The Effect of Modality and Accent on Perceptions of Credibility.

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Abstract

How credible an individual is perceived to be can effect many aspects of their life. Perceptions of credibility are influenced by a number of factors, including whether information is written or auditory. When information is auditory, additional cues such as accent can influence how credible information is perceived to be and the linguistic identity (i.e. accent) of the evaluator can affect how these auditory cues are interpreted. This study examined how different modalities and accents affected participants' perceptions of credibility. General South African English (gSAE) and Black South African English (BSAE) were used in this study. Participants (n=88) rated audio and written versions of eight statements on a credibility scale. It was found that audio versions were rated as significantly less credible than written versions in the six of the eight statements. However, when rated by ingroup members (participant accent and statement accent match) there was no significant difference in how credible the audio and written versions were perceived to be. This indicates that speaker identity and evaluator identity may interact to affect perceptions of credibility. South Africa is a linguistically diverse country with a history of discrimination, and understanding biases is thus important. This study was limited to looking at only ingroup and outgroup accents. Future research should investigate this pattern in more nuance to fully understand how accents are perceived.

Keywords: Accent, Credibility, Modality, SAE and BSAE

The way information is presented can affect how credible it is perceived to be. This has significance in a range of contexts, for example, in courts of law and job interviews. In these situations, important credibility assessments are being made that affect individuals lives. There are many factors that influence how these evaluations are formed. The modality in which the information is received determines the cues evaluators use to make these assessments. The additional cues embedded within a modality open up new avenues of bias. Embedded in audio statements is information about the speaker that can influence the evaluator's perception, this includes linguistic cues that signal gender, age or accent. Accent is the predictable and systematic use of stress, prosody and pronunciation in spoken language and has been found to affect credibility assessments. This is particularly relevant in linguistically diverse contexts such as South Africa (SA). It is therefore important to consider how credibility is perceived across modalities as well as how additional linguistic features, such as accent, can affect credibility judgments.

There are three subsections to the credibility judgements (Appelman & Sundar, 2016) source credibility is how trustworthy, competent and charismatic the communicator is perceived to be; message credibility refers to the accuracy, authenticity and believability of the message; and media credibility refers to the perceived integrity of the outlet that the information was acquired in (Appelman & Sundar, 2016). Each of these factors inform credibility assessments to varying degrees. While these distinctions can be useful in theoretical discussions, they are intricately intertwined and hard to distinguish when assessing real life credibility judgements.

One of the many factors that influence credibility assessments is the modality of presentation. Seminal studies into the effects of modality on credibility found information presented in audio formats was perceived to be less credible than when the same information was read (Furnham & Gunter, 1989). It was theorized that poor-sensory modalities, such text,

allowed individuals to process information at their own pace, allowing them to feel comfortable with the information. The additional cues within sensory rich modalities, such as audio, were thought to interfere with credibility judgements as there is more information to process (Furnham & Gunter, 1989).

Recent research into the impact of modality on credibility perceptions has found conflicting information on how modality impacts perception. Wissmath, Weibel and Reber, (2010) compared the credibility ratings of four politicians when their debates were presented either as audio recordings or as transcriptions. The politicians were rated as more credible by those who heard the debates compared to those who read the transcriptions, although the degree to which this occurred varied across the four politicians. It was theorized that the increase in sensory information allowed evaluators access to additional information to inform their credibility assessments (Wissmath et al., 2010). The addition of auditory cues, such as intonation, stress and rhythm, disambiguates information, making evaluators more comfortable in their assessments and they subsequently perceive the source of the information to be more credible (Wissmath et al., 2010).

What is clear is that when the information is presented in an audio format, more than just the content of the message is used to make the credibility judgment. An increase in the credibility assessment of an audio version implies that the verbal qualities expressed by the speaker are perceived to be credible, while a decrease may imply that the audio qualities of the speaker are perceived negatively as they are reducing the perceived credibility of the information (Wissmath et al., 2010).

This shift in how modality affects perception may be influenced by how information consumption has changed in the intervening years. Information consumption has evolved dramatically since the 1970s when the foundation studies were conducted (Furnham, de Siena, & Gunter, 2002). The increase in the availability of and exposure to sensory rich

information could affect how individuals respond to such forms of communication. Furnham, et al. (2002) found younger individuals perceived news presented on television to be significantly more credible and memorable than the same information presented in print. However, older individuals exhibited no such bias. While this may be due to age, it seems likely that in an information rich world, individuals' perception of the modalities could have shifted. This indicates that more research is needed to establish how audio and written information is perceived today.

It is hard to disentangle the effects of the modality of the information from other influencing factors. The assessment of audio statements can be affected by the linguistic identity of the speaker, as well as features that are encoded into the audio format, such as the age and gender of the speaker. As such it can be hard to tell if differing credibility ratings are due to the different cognitive mechanism behind the processing of the modalities, the perceptions of the different modalities or the increased awareness of the individual who provides the information.

Language and accent are highly salient and politicized features in SA. Under the Apartheid regime, language was used as a tool of oppression (Rudwick, 2018). This shaped a language hierarchy that is embedded in post-apartheid SA whereby African languages and the accents associated with them, while spoken by the majority of the population (Khokhlova, 2015), are seldom featured in official contexts (Rudwick, 2018).

To understand how accents are perceived, linguistics distinguishes between "standard" and "nonstandard" accent varieties. "Standard" refers to the non-stigmatised, prestigious accent variety commonly used in public discourse. What is considered to be "standard" is context specific and is a constructed abstraction of perceived social norms (Lippi-green, 2012). These descriptors can be problematic but are used in the linguistic sector to identify patterns in how accent varieties are perceived across a range of contexts. A meta-

analysis of the effect of accent on interpersonal evaluations reviewed studies from a wide range of contexts and found that "standard" accents were consistently viewed more positively than "non-standard" accents (Fuertes, Gottdiener, Martin, Gilbert, & Giles, 2012). "Non-standard" speakers were consistently evaluated negatively on a number of scales including credibility and truthfulness (Dragojevic, 2016). A French study in 2016 (Delhomme & Boulanger) found that people with a Magrabi accent were viewed as less employable than those who had a neutral French accent.

This type of linguistic bias is evident in SA. Older research in SA found that accent could influence how likely individuals are to be convicted of crime (Dixon, Tredoux, Durrheim, & Foster, 1994). General South African English (gSAE) is considered a "standard" variety within South Africa and is associated with first language English speakers who have attended private and model C schools (Bekker & van Rooy, 2015). gSAE is rated highly on assessments of credibility, competence and intelligence, while other South African accents are often perceived negatively (Meyer & Tredoux, 2016). For example, Makoe & Mckinney (2014) found that Black South African English (BSAE), which is commonly associated with Nguni first language speakers, is often perceived as incompetent.

As is the case with many BSAE speakers, "non-standard" speakers are often individuals who do not speak English as a first language. Speaking a second language can increase cognitive demand and individuals will often appear to be concentrating hard and exhibit slower speech rates (Leach, Snellings, & Gazaille, 2017) . Another reason posited for why second language and non-standard speakers are perceived as deceptive is that these behaviours associated with speaking in a second language are also commonly associated with deceptive behaviour (Leach et al., 2017). This linguistic behaviour is also associated with deception. Additionally, different cultural linguistic norms can be misinterpreted cross-culturally (Castillo, Tyson, & Mallard, 2014). For example, in Australian Aboriginal

discourse pragmatic features such as gratuitous concurrences (responding affirmatively to yes- no questions regardless of whether the answer is yes or no) differ from mainstream English. This has resulted in mistreatment and wrongful conviction of many individuals due to cross-cultural misunderstandings (Eades, 2012). When individuals rate gSAE speakers as more trustworthy than BSAE speakers (Yagman & Keswell, 2015) it may be that evaluators are interpreting the linguistic behaviours as untrustworthy rather than the individual.

Linguistic biases are often explained using Social Identity Theory (SIT). SIT posits that individuals identity with a group (be it linguistic, gender or racial identity) and seek to enhance the status of their groups by diminishing the status of other groups (Tajfel & Turner, 1979). Accent can prime an individual's group identity, thus triggering an ingroup response. When accent indicates one's group identity, it can elicit the stereotypes and prejudices commonly held against those groups, linking those prejudices to the accent and subsequently the speaker (Cargile & Giles, 1997).

While SIT is used to explain how this bias may operate, very few studies have acknowledged the potential role the linguistic identity of the speaker could play. Hanzlíková, Skarnitzl (2017) found that "non-standard" speakers also exhibited negative bias towards other non-standard speakers. However, the study used speakers of multiple "non-standard" varieties thus the participants may have been exhibiting this negative bias towards other "non-standard" varieties. This was thought to be due to linguistic diversity of the evaluators, most of whom spoke multiple languages. SA also has high linguistic diversity but the socio-political context of SA is very different to Switzerland. How accent is perceived by ingroup (same accented individuals) and outgroup (individuals with different accents) members in SA could provide insight into how linguistic diversity is experienced and perceived within South African society.

Rationale, aims and hypothesis

Credibility assessments can have important impacts on individuals lives, from affecting how judges perceive them to whether they are hired for a job. In SA, individuals are required to give visa voce testimony in courts. However, it is unclear how audio statements are perceived compared to written statements. This is especially important when linguistic features of accent could further compound this effect. It is important to understand how credibility ratings are affected by modality because it is unclear how modality can affect perceptions of credibility. This study aims to address that issue, therefore:

Hypothesis 1: Audio statements will be rated as more credible than written statements.

Within audio statements there are a large number of factors that can affect credibility ratings. How these factors affect judgements could be influenced by the evaluator. The accent of the evaluator will affect both the evaluator's social identity and perception of the accents around them. When the accent of the evaluator and the accent of the speaker match (ingroup) the evaluator will focus on the content of the argument and will not perceive a difference between how credible the written and the audio versions of the statement are.

Hypothesis 2: For ingroup members there will not be a significance difference in the credibility ratings of statements across modality.

However, when the accent of the evaluator and the accent of the speaker differ (outgroup), the evaluator will be influenced by the linguistic identity of the speaker as well evaluator. The additional linguistic cues available will influence perceptions of credibility, resulting in a significant difference between credibility rating of the written and audio versions of the same statements.

Hypothesis 3: For outgroup members there will be a significant difference in the credibility ratings across modality.

While there are many accent varieties in SA, little work has investigated how BSAE accents affect perceptions of credibility. While gSAE is considered a "standard" variety, it is important to investigate how it is perceived by others. Therefore, this study will use BSAE and gSAE accent varieties.

Method

Design and setting

This study used a quasi-experimental 2 (statement accent) x 2 (medium) x 2 (veracity) x 2 (participant accent) partially crossed factorial design. There is a sampling factor within veracity as two statements were used in each condition. The between-subjects factor is participant accent, coded as ingroup (same accent as speaker in statement) and outgroup (different accent to speaker in statement) relative to the statement being rated. This results in a 32-cell design (see Appendix A for Figure 5). Participants rated the credibility and veracity of eight statements.

Statements were obtained from the study *The danger of speaking in a second language* run in the UCT psychology department (A. Dippenaar, personal communication, March 8 2018). Statement accent refers to the accent in the audio recording used as stimuli in the experiment. Two accent varieties were used in this study as levels of an independent variable, namely BSAE and gSAE. BSAE is characterised by vowel neutralization and lengthening of the penultimate vowel in words ending in a light syllable. South African English (SAE) is characterised by the KIT-SIT split and the raising of the TRAP vowel /æ/ towards DRESS [ɛ] (Bekker & van Rooy, 2015). The audio recordings were transcribed verbatim, creating written transcripts of each of the audio recordings. Verbatim transcripts included pauses, "uhms" and misspoken or repeated words and contained many of the cues

that may affect credibility ratings. Eight audio statements were used in the experiment, each provided by different speakers. This was to control for individual differences in vocal characteristics that may confound results. Four statements were spoken in BSAE and four in SAE. Within each accent variety, two statements were true and two were false. Two versions of the experiment were created to counterbalance the modality the statements were presented in (see visual diagram in Appendix A). Participants were randomly assigned to a version of the experiment. Individuals never rated the audio and written version of the same statement as this would have been redundant.

As the study investigates the interaction between participant accent and statement accent, participants were audio recorded. Participant accent was then analysed and categorized into three groups, SAE, BSAE and other.

This study was conducted in the ACSENT laboratory in the University of Cape Town (UCT) Psychology Department.

Participants

Participants were selected through convenience sampling, using the Student Research Participation Program (SRPP) run by the UCT Psychology Department (see Appendix B for advertisement). Participants were rewarded with two SRPP points for their participation. Participants were able to withdraw from the study at any point and retain their points, none chose to do so. All participants were UCT Psychology undergraduate students. This study used stimuli obtained in a study run earlier in 2018 within the UCT Psychology Department; as such participants who participated in that study (discussed below) were not eligible to participate in this study. This study uses audio stimuli and it was required that participants have no hearing impediments that could not be managed with corrective devices. 83 timeslots were opened between the 8th August and the 27th September. 156 people signed up to attend sessions. 93 individuals completed the session and data from 88 participants were retained

(four were discarded due to incorrectly captured data and one incomplete). Individuals that did arrive were emailed, 25 provided reasons for not attending (for full attrition diagram see Appendix C). Of the 88 participants, 61 were female and 27 male and the age range was 18 to 26. (*M*=20.89, *SD*=2.44). 31 participants were black, 29 white, 16 coloured, 4 Asian and 8 other (racial categories based on the South African Census). Linguistic analysis of the participant recordings revealed that there were 22 SAE, 9 BSAE and 57 "other" accented participants (see Appendix D for overview description of "other" accents).

Measures

Credibility. Credibility was rated using the Witness Credibility Scale (WCS) (Brodsky, Griffin, & Cramer, 2010). This measure reports a high internal consistency (Cronbach alpha = .91 to. 98) (Brodsky et al., 2010). Some of the items in the scale were reworded to be appropriate for both audio and written stimuli (see Appendix E for the scale as used in this study). An average credibility rating was created by averaging the score for each item on the on a scale of 1 to 10. Perceptions of credibility could be influenced by how similar the opinion expressed in a source is to the opinion of the evaluator. If participants agree with the opinion expressed in a statement they may find it inherently more credible because it is congruent with their worldview. This may be a confounding variable and participants were asked to rate their agreement with the viewpoint presented in the statement on a 7-point Likert scale ranging from 'not at all' to 'completely'. This was factored into the analysis as a covariate.

Evaluator Accent. While accent has several components, participants read a set document and only phonetic features were used to identify accent groups. South African accents were evaluated according to the key features specified in (Bekker & van Rooy, 2015). The same key features used to establish SAE and BSAE in statement accent were used to establish participant accent. These are defined in the section on study design.

Individuals often display features associated with multiple accents. To be identified as a speaker of an accent variety participants had to display two or more of the key features associated with the accent. If a participant displayed two or more key features belonging to multiple accent varieties, the participant was grouped with the accent for which the participant displayed the most features. Individuals who did not have gSAE or BSAE accents were grouped as "other". This analysis was conducted by two individuals[1] with linguistics degrees, who individually coded the accents and compared the result. Across the accents, three participant accent ratings were inconsistent, and a third linguist was consulted.

Materials

Participant recordings. Participants in the study were recorded reading the consent form. This recording was edited to exclude the participant's name and then linguistically analysed to establish participant accent.

Statements. The statements used in the experiment were obtained from a study run in the UCT Psychology Department by André Dippenaar; namely *The dangers of speaking in a second language: An investigation into lie bias and cognitive load* (A. Dippenaar, personal communication, March 8 2018). In Dippenaar's study participants were audio recorded arguing in opposition to their opinion (i.e. lie/false) or in alignment with their opinion (i.e. truth) on a topic they feel strongly about (A. Dippenaar, personal communication, March 8 2018). The topics of the statements are controversial. Controversial topics increase emotionality, which is also present in many high-stake situations of credibility and veracity judgements. Thus, the emotive nature of the statements mimics the emotionality of high stakes situations, improving the ecological validity of the study. Similarly, using naturalist

[1] Sarah Erasmus (the primary researcher) and Dimpho Hlela (linguistics honours student, UCT).

recordings of the individuals who initially made the statement improves the ecological validity of the study, compared to studies that have individuals read set statements (Campbell-Kibler, 2016). Recordings given in Dippenaar's study were analysed to determine their appropriateness as stimuli in this study. Only statements given by females between the ages of 18 and 25 were considered, as age and gender can affect credibility ratings (Boyle, 2014). A linguistic analysis revealed eight potential BSAE recordings and six potential SAE recordings. Controlling for veracity of statement, four recordings were randomly selected from each of the accent groups. Each audio recording was approximately 3 minutes long. The audio recording was transcribed verbatim (i.e. including repeated words, misspoken words, uhm, pauses and other spoken indicators) (see Appendix F for statements).

Procedure

The study was advertised on the SRPP Vula site (online portal for UCT students) under the name of *Deception detection in audio and written stimuli*. Participants booked a session on Vula. A maximum of five participants could sign up for each session. Participants were sent reminder emails a week before and the day before the study. Participants met at the ACSENT laboratory in the Psychology Department, where it was explained that this study used an audio consent form (see Appendix G). Participants were then individually recorded reading the consent form. Participants also signed the consent form to acknowledge the contact information. Once all participants were seated at the computers, the researcher explained the experiment to participants (omitting the information on accent) and asked that they remain seated after completing the experiment. The experiment lasted approximately 45 minutes and was run on E-Prime software 2.0 (Psychology Software Tools, Pittsburgh, PA). In Phase one, participants rated the statements. Eight statements were randomly presented to each participant. Four statements were audio and four statements were written. Two of the audio statements were in SAE and two were BSAE. Two of the written statements were

transcriptions of the statements given in SAE and two were transcriptions of statements given in BSAE. After each statement, the participants rated the statement on the credibility scale before proceeding to the next statement. Once all eight statements had been rated the participants proceeded to Phase 2, which consisted of a group identity measure and a brief sociodemographic questionnaire (this information is not analyzed in this thesis). Thereafter the experiment exited. Once all participants had completed the experiment, the group was verbally debriefed, and each participant was given a written debriefing form (see Appendix H). Participants were then given the opportunity to comment and ask questions about the study before leaving.

Data Analysis

Data were stored in an encrypted file on a password locked computer and participant identifying information was stored separately to data. Data was captured on E-Prime, then converted to Microsoft Excel, where it was checked that values where in range and subsequently analyzed on SPSS (version 25.0.0.0). Data were checked for outliers using the median and interquartile deviation method, the threshold was set to 2.22. Assumptions for all tests were checked and upheld, unless otherwise stated. Missing data was excluded pairwise. To check the appropriateness of the credibility scale, Cronbach's alpha was computed using data obtained in this experiment and showed high reliability (α= .94) indicating that it is an effective measure.

In the analysis, results for SAE false statements ($S1_{SAE}F$[2] and $S5_{SAE}F$) are described first, then for SAE true ($S2_{SAE}T$ and $S6_{SAE}T$), then BSAE false ($S3_{BSAE}F$ and $SF7_{BSAE}F$) and

[2] This notation is used to indicate the qualities of the statement. The subscript indicates the accent of the statement provider and the letter indicates the veracity of the statement (T=true, F=false). For example, $S1_{SAE}F$ is statement one, provided by an SAE speaker and it was false. $S4_{BSAE}T$ is statement four, it was provided by a BSAE speaker and it was true.

then BSAE ($S4_{BSAE}T$ and $S8_{BSAE}T$). To test hypothesis 2A and 2B participant accent was coded as ingroup (participant accent and statement accent are the same) or outgroup (participant accent and statement accent are not the same), relative to each of the statements. Participants who had the same accent as the accent in the audio statement (and thus the written version as well although this could not have been known to participants) were rated as ingroup.

As the content and speaker of each statement is unique, statements cannot be directly compared, and an omnibus test could not be run. For this reason, each statement was analysed individually, such that the credibility ratings of the audio version of each statement was compared to credibility ratings of the written version of the same statement. As per psychological research convention the significance level will be set at .05 for all tests. Power was calculated before the study, while it is possible to compute this is not recommended.

Ethics

Ethical approval was obtained from the UCT Psychology Department. The subject matter in this project is sensitive; accent can be an intricate part of the self and as such information that indicates differentiation on this basis could have detrimental repercussions. This is particularly true in SA where an individual's accent and the connotations attached to accents are informed by a long complex history of racism and oppression. The aim of this study was to explore how accent biases operate so that these biases and the humans who hold them may be better understood. This study makes use of categories to understand how they operate, not to enhance the prejudice and stereotypes that surround them. Additionally, this study involved deception as participants were not aware that accent was the factor being investigated until they had completed the experiment as high monitoring effects have been found in accent studies (Bernstein, 2018). Due to the sensitive nature of the research, participants received an intensive debriefing after the experiment in which they were

encouraged to ask questions and comment on the experiment. A large number of students expressed interest in the project, emphasizing how relevant and imperative the research is in contexts such as SA. This supports the intention of the study to engage individuals and encourage them to think critically about how perceptions are formed.

Results

Hypothesis 1

To test if there was a difference between the credibility ratings of audio and written versions of the same statement a one-way ANCOVA was conducted controlling for the extent to which the participant agreed with the viewpoint presented in the statement. The analyses were conducted per statement as participants could not have read and heard the same statements thus an omnibus test was not valid. A non-significant result indicates that there is no difference between the credibility ratings of the audio and written modalities when controlling for the extent that the participant agrees with a statement. The results of the ANCOVA are represented in table 1. For six of the eight statements the audio version was rated as significantly less credible than the written version. Three SAE and three BSAE statements show a significant decrease in perceived credibility in the audio version. The partial η^2 for the effect of modality ranged from .08 to .27. This indicates the percentage of variance explained by the modality varies between the statements and ranges from small (for $S3_{BSAE}F$ and $S6_{SAE}T$) to large (for $S7_{BSAE}F$). In $SF5_{SAE}$ and $ST4_{BSAE}$, there was no significant difference across modalities but the covariate, agreement, was significant.

As such, it seems that modality does impact credibility ratings but the extent to which it does varies across statements.

Table 1

ANCOVA summary table for credibility ratings by modality

	Audio		Written					Audio		Written	
	n	Mean (SD)	n	Mean (SD)	*F*	*p*	Partial η^2	95% Confidence Interval		95% Confidence Interval	
								Lower	Upper	Lower	Upper
$S1_{SAE}F$	45	5.62 (1.56)	43	6.46 (1.1)	8.09	<.05*	.09	5.33	6.03	6.04	6.76
covariate					26.73	<.001**	.24				
$S5_{SAE}F$	41	5.66 (1.68)	46	6.12 (1.42)	1.54	.217	.02	5.33	6.10	5.69	6.43
covariate					45.17	<.001**	.35				
$S2_{SAE}T$	42	4.55 (1.3)	43	5.15 (1.63)	6.64	<.05*	.08	4.07	4.89	4.82	5.63
covariate					21.74	<.001**	.21				
$S6_{SAE}T$	42	4.21 (1.9)	45	5.00 (1.48)	7.03	<.05*	.08	3.74	4.64	4.59	5.45
covariate					31.18	<.001**	.27				
$S3_{BSAE}F$	44	6.69 (1.23)	38	6.69 (1.23)	6.84	<.05*	.08	3.91	5.00	5.20	6.41
covariate					13.29	<.001**	.14				
$S7_{BSAE}F$	42	3.68 (1.4)	42	3.50 (2.11)	26.86	<.001**	.25	3.50	4.14	4.70	5.34
covariate					40.72	<.001**	.34				
$S4_{BSAE}T$	46	3.25 (1.3)	40	3.79 (1.46)	.10	.751	.001	3.14	3.80	3.19	3.90
covariate					59.01	<.001**	.37				
$S8_{BSAE}T$	42	5.00 (1.72)	45	6.13 (1.21)	12.53	<.05*	.13	4.69	5.47	5.67	6.43
covariate					30.71	<.001**	.27				

Note. S denotes statement, T = statement is true, F = statement is false, SAE = general South African English, BASE = Black South African English *p<.05. **p<.001.

Hypothesis 2

For hypothesis 2, an ANCOVA was run on each of the eight statements using ingroup participants to determine if ingroup members rated the credibility of written versions and audio versions of the same statement differently. The degree to which the participant agreed with the content of the statement was the covariate. As the number of participants with BSAE accents was extremely low, the BSAE ingroup results must be interpreted with caution and are tentative at best. As shown in table 2, when rated by ingroup members, there is no significant difference in the credibility ratings across modality when controlling for agreement in any of the eight statements.

Figure 2 and 3 below show the credibility ratings by ingroup members. The credibility ratings for ingroup SAE are fairly close. However, for BSAE ingroup participants the ratings displayed much more variability, with particularly large standard deviations in the audio statements. While not significant it is interesting to note that the audio rating for $S4_{BSAE}T$ is higher than the written. While none of these are significant, there is more variability in the BSAE ingroup and the pattern is less consistent than the SAE ingroup though this is likely influenced by the small sample size of in the BSAE ingroup.

It would appear that ingroup members do not rate the credibility of statements differently across modalities although there is a large variability within ingroup BSAE.

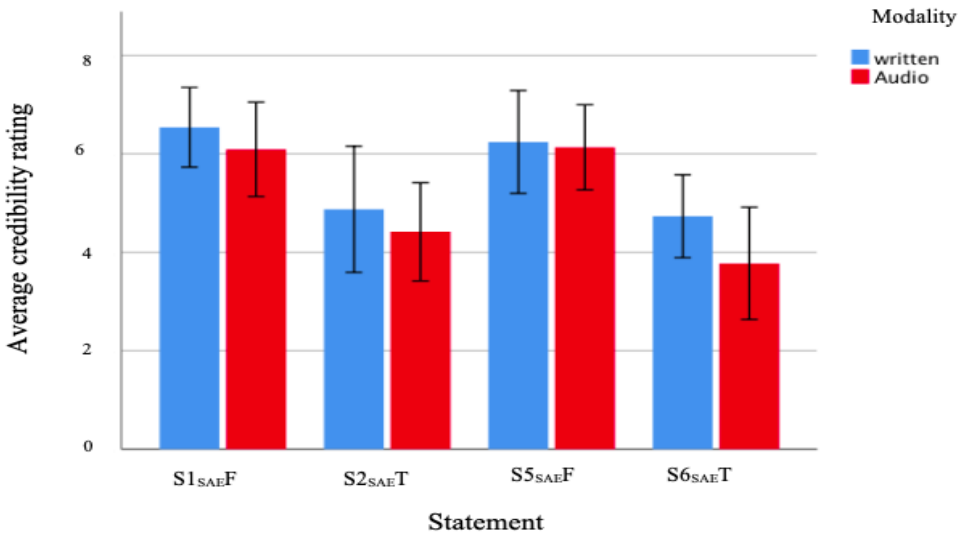

Figure 1.

Average credibility rating for SAE Ingroup

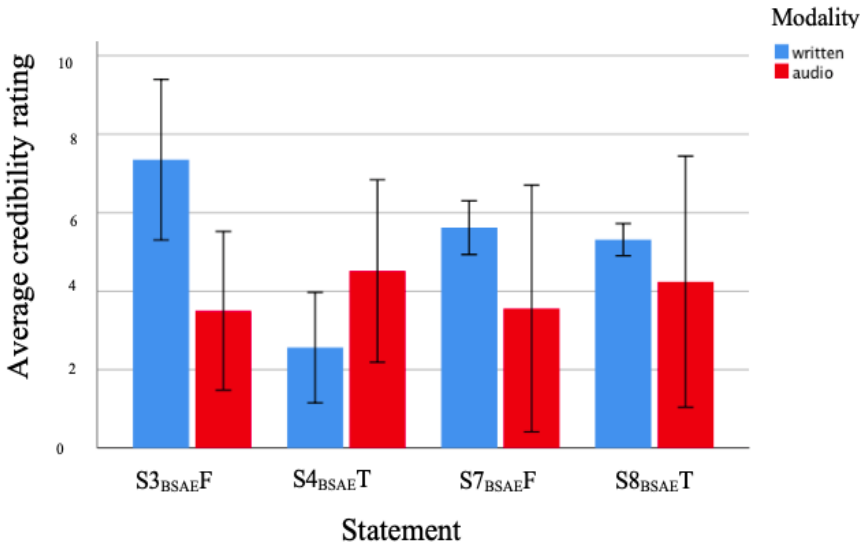

Figure 2.

Average credibility rating for BSAE ingroup

Table 2

ANCOVA summary table for ingroup credibility ratings for audio and written with agreement as a covariate.

	Audio		Written					Audio		Written	
	n	Mean (SD)	n	Mean (SD)	*F*	*p*	Partial η^2	95% Confidence Interval		95% Confidence Interval	
								Lower	Upper	Lower	Upper
$S1_{SAE}F$	12	6.09 (1.51)	10	6.54 (1.13)	.85	.368	.04	5.49	6.73	5.84	7.20
covariate					15.78	<.05*	.45				
$S5_{SAE}F$	10	6.14 (1.21)	12	6.24 (1.64)	.72	.89	<.01	5.35	6.96	5.49	6.96
covariate					9.95	<.05*	.34				
$S2_{SAE}T$	11	4.73 (1.2)	10	4.88 (1.79)	29.79	.597	.02	3.95	4.90	4.84	5.75
covariate					2.327	.145	.11				
$S6_{SAE}T$	10	3.78 (1.6)	12	4.73 (1.33)	1.65	.215	.08	3.01	4.78	3.83	5.44
covariate					5.09	<.05*	.21				
$S3_{BSAE}F$	4	3.5 (1.27)	4	7.35 (1.29)	.10	.765	.02	3.75	7.53	3.32	7.10
covariate					11.61	<.05*	.7				
$S7_{BSAE}F$	5	3.56 (2.53)	3	5.62 (.28)	.79	.416	.14	4.19	6.64	1.27	10.00
covariate					<..01	.964	.00				
$S4_{BSAE}T$	4	4.51 (1.46)	5	2.56 (1.13)	.03	.864	.01	1.80	5.28	1.85	4.83
covariate					4.24	.085	.41				
$S8_{BSAE}T$	5	4.24 (2.58)	4	5.31(.26)	<.01	.995	.00	3.29	6.14	3.11	6.33
covariate					10.73	<.05*	.64				

Note. S denotes statement, T = statement is true, F = statement is false, SAE = general South African English, BASE = Black South African English
*p<.05. **p<.001.

Hypothesis 3

Hypothesis 3 was tested using a one-way ANCOVA to detect if the credibility of the statement was different across modalities when rated by outgroup members, when controlling for agreement with the statement content. As shown in table 3 there was a significant difference in credibility ratings across modalities for $S1_{SAE}F$, $S2_{SAE}T$, $S6_{SAE}T$, $S3_{BSAE}F$, $S7_{BSAE}F$ and $S8_{BSAE}T$ when rated by the outgroup. Little variance is explained by the change in modality for some of the statements (e.g. $S6_{SAE}T$, partial η^2=.08) while for other statements the variance is large (e.g. S7BSAEF, partial η^2=.36).

While, there was no significant effect of modality in $S5_{SAE}F$ and $S4_{BSAE}T$ for outgroup, agreement did have a significant effect. From figure three we see that while the differences between the modalities is significant the pattern across the statements remains relatively consistent. Figure four shows the written credibility rating was much higher for $S3_{BSAE}F$.

Outgroup members rated the credibility of six of the eight statements as significantly different across modalities, consistently rating audio as less credible.

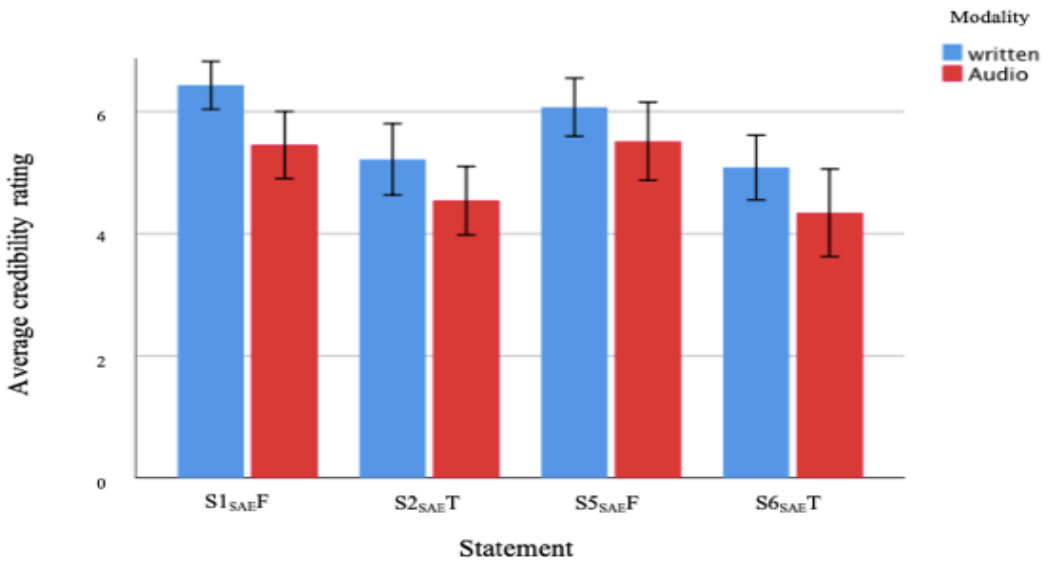

Figure 3.

Average credibility rating for SAE outgroup

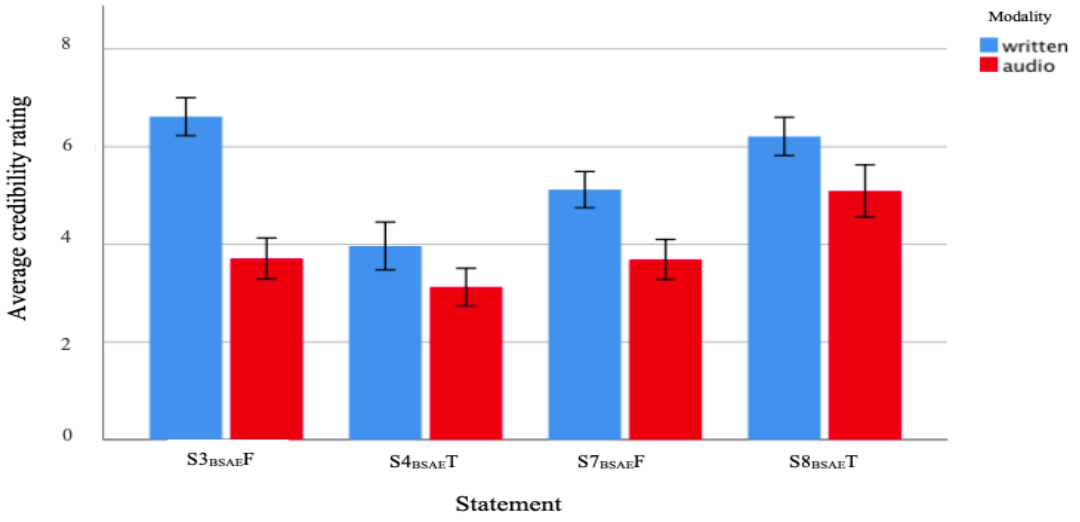

Figure 4.

Average credibility rating for BSAE outgroup

Agreement

The degree to which a participant agreed with the content of a statement was the covariate in all of the ANCOVAs. It is notable that agreement seems to be accounting for a much larger portion of the variance in credibility scores than modality. Due to the strong effects of agreement as a covariate this measure was investigated further. A negative linear relationship was found between agreement and credibility ratings for all statements in both modalities (See Appendix I for scatterplots). This indicates that agreement may be influencing how credible participants perceive a statement to be but that the more they agreed with the content of the statement the less credible they perceived the statement to be.

Table 3

ANCOVA summary table for outgroup credibility ratings by modality with agree as a covariate

	Audio		Written					Audio		Written	
	n	Mean (SD)	n	Mean (SD)	*F*	*p*	Partial eta^2	95% Confidence Interval		95% Confidence Interval	
								Upper	Upper	Lower	Upper
$S1_{SAE}F$	33	5.45 (1.55)	33	6.43 (1.1)	7.834	<.05*	.11	5.08	5.94	5.94	6.8
covariate					13.66	<.001**	.18				
$S5_{SAE}F$	31	5.50 (1.6)	34	6.07 (1.36)	1.74	.192	.03	5.11	6.04	5.56	6.45
covariate					32.72	<.001	.35				
$S2_{SAE}T$	31	4.49 (1.35)	33	5.23 (1.61)	7.01	<.05	.10	3.95	4.89	4.84	5.75
covariate					19.25	<.001	.24				
$S6_{SAE}T$	32	4.34 (2)	33	5.10 (1.54)	5.55	<.05	.08	3.74	4.81	4.64	5.69
covariate					24.80	<.001	.29				
$S3_{BSAE}F$	40	3.71 (1.31)	34	6.61 (1.11)	6.79	<.05	.09	3.83	4.96	5.17	6.46
covariate					9.87	<.05	.12				
$S7_{BSAE}F$	37	3.69 (1.23)	39	5.12 (1.14)	40.37	<.001	.36	3.09	3.87	4.94	5.70
covariate					9.68	<.05	.12				
$S4_{BSAE}T$	42	3.13 (1.24)	35	3.97 (1.43)	.28	.599	<..01	3.08	3.80	3.19	4.00
covariate					30.90	<.001	.30				
$S8_{BSAE}T$	37	5.09 (1.52)	41	6.21 (1.24)	12.52	<.05	.14	4.74	5.56	5.77	6.55
covariate					23.38	<.001	.24				

Note. S denotes statement, T = statement is true, F = statement is false, SAE = general South African English, BASE = Black South African English
*p<.05. **p<.001.

Discussion

This study investigated if there was a difference in perceptions of credibility across modalities and if this difference was evident for ingroup (participants with the same accent as the statement accent) and outgroup members (participants who had a different accent to the statement accent). Hypothesis 1 was that audio statements would be rated as more credible than written statements. The written version was rated as significantly more credible than the audio in six (three gSAE and three BSAE) of the eight statements. While this was not true for all statements, it suggests that audio statements were perceived as less credible.

Hypothesis 2 was that for ingroup members, credibility ratings of audio and written versions of a statement would not be significantly different. For all eight statements there was no significant difference between the perceived credibility of the audio and written versions when rated by ingroup members. Hypothesis 3 predicted that for outgroup members, the credibility of audio and written versions of a statement would be rated differently. When rated by outgroup members, audio versions were rated as significantly less credible than the written version in six out of the eight statements. This suggests that group membership affects how the credible a message was perceived to be. The findings of the hypotheses imply that perceptions of credibility were influenced by more than the content of the statement.

Audio statements were consistently perceived to be less credible than their written counterparts, which is in accordance with the findings of foundational modality studies (Furnham & Gunter, 1989) but not those of the more recent research (Wissmath, et al. 2010). Audio statements include additional cues, such as tone, that could be used to assess the credibility of statements. A greater number of pauses, repeated words and other common verbal mishaps are associated with lower credibility scores (Castillo, et al., 2014). The verbatim written statements included these linguistic markers in an attempt to convey these cues in the written modality. However, individuals are not accustomed to interpreting these

indicators in written text. These linguistic markers could have been more meaningful and interpretable in audio statements and thus would have a greater impact on the credibility scores of the audio statements.

The statements used in this experiment were not planned, edited arguments; rather they were naturalistic, unstructured justifications of an opinion. As such, the statements could appear disorganised and uninformed. In written text, this may have had less of an impact as participants could reread the written statements and clarify unclear aspects. As a result, participants may have perceived the statement to be more credible because they had the opportunity to clarify discrepancies. When presented as audio, the participants may have been more affected by the disorganised format of the argument as they could not refer back to previous points made in the argument. This may have resulted in participants perceiving the statement to be less credible because they had not been able to follow the argument in the audio version.

Additionally, when a statement is audio, the evaluator has more information about the speaker. This is provided by the verbal indicators of age, gender and, potentially, race and demographic background inferred from accent. As such, when rating audio statements, the salience of the statement provider's identity is heightened.

Therefore, when a statement is heard, there is a potential interaction between the content of the statement and the perceived identity of the speaker. Presumably the nature of this interaction would vary depending on the content of the statement and the perception of the speaker. In this study all the statements were unique and provided by different speakers. The two non-significant results may be an example of an interaction between statement content and the perceived identity of the speaker. For example, $S4_{BSAE}T$ was provided by a BSAE accented speaker advocating that children should not be allowed to attend schools outside of their local area. $S5_{SAE}F$ was a gSAE accented speaker advocating that the mother

of an unborn child does not have the right to abort without the father's consent. In both statements, the identity of the speaker could influence how the content of the message is understood and ultimately affect the perception of the speaker's credibility. When listening to the statement, evaluators would likely be able to deduce the gender and race of the speaker from their verbal cues, while this information was not available in the written statements. In $S5_{SAE}F$, evaluators were aware that it was a woman arguing against a woman's right to choose and this may increase the perceived credibility of the message, and subsequently affect the perceived credibility of the source. Similarly, in $S4_{BSAE}T$, when evaluators heard the speaker they would likely surmise her race and, given South Africa's history of segregation, may find the argument for restricting children to local schools more credible when spoken by a black individual. For these statements, it is possible that knowledge of the source of the information, deduced from the audio cues, increased the perceived message credibility.

The salience of identity when rating credibility is also apparent in the distinction between how ingroup and outgroup members perceived the statements in the different modalities. There was no significant difference between how ingroup members rated the credibility of the audio and written versions of the statements. This indicates that ingroup members are basing their credibility judgements on the content and are not as influenced by verbal cues. This can be explained according to SIT. When participants hear the audio they are aware of the outgroup status of the statement provider, and thus they are more critical of the statement and the source and subsequently perceive it to be less credible. However, when the statement was written the identity of provider was unknown and thus could not have influenced the evaluators credibility assessment.

Across groups, there are different cultural and linguistic norms surrounding pragmatics (Castillo et al., 2014). Outgroup members may have perceived audio statements

as less credible if they were unfamiliar with the verbal cues used in the audio statement. It may be that ingroup members interpret these linguistic nuances more accurately, while outgroup members misconstrue unfamiliar verbal cues resulting in the speaker being perceived as less credible. However, these accents are familiar in SA and gSAE is the "standard" variety and thus the many people are accustomed to the variety and the associated norms. It therefore seems unlikely that the differences in ratings were due to cross cultural misinterpretations.

It is possible that the speaker identities indexed by the auditory information are prompting stereotypes relating to those groups, causing them to perceive the statement as less credible. However, this seems unlikely as there are different stereotypes associated with gSAE and BSAE speakers and the audio versions were rated as less credible than the written version for both SAE and BSAE accents. Previous research into accent suggests that "standard" accents will be perceived as more credible than "non-standard" accents. This was not directly tested in this study as the content of each statement was not comparable and therefore it would be inappropriate to compare perceptions of credibility across statements. However, if this was the case, one may expect a different pattern in how credible the audio versions of the statements were perceived to be compared to their written counterpart within each accent group. This is not the case, the audio versions of BSAE and gSAE statements are both rated as less credible than the written versions. This could be due to social desirability.

A study run by Bernstein (2018) found no difference in the perceived credibility of non-native and native speakers. However, follow up qualitative interviews revealed that many participants had been aware of accent and indicated that they had been actively attempting to counteract biases they held. The saliency of the accent may have affected individual's responses as they attempted to respond in a socially acceptable manner. As the

sample in this study was university students it is possible that these are individuals to whom biases, accent or otherwise, are salient.

Alternatively, the similarity in the pattern across accents may be because the speakers of the "non-standard" variety do not exhibit the cues that commonly lead to "non-standard" varieties being associated with dishonest behaviours. The statement provides all spoke English at native level proficiency. Theories that link "non-standard" and second language speech to lower credibility ratings attribute this to the similarity between the manifestation of deceitful behaviours and the additional challenges often associated with speaking in second languages (Castillo, et al., 2014). While the BSAE statement providers all reported their first language to be either isiXhosa or isiZulu, they are UCT students and as English is the medium of instruction at UCT, can effectively communicate in English. Additionally, while BSAE may be considered "non-standard" in academic and economic sectors, it can be considered the "standard" variety in South African political sectors (Hibbert, 2016) and is familiar to all South Africans.

Stocker (2017) found no difference between the credibility ratings of native accents and foreign accents. Many of the evaluators in the study where multilingual and had diverse linguistic backgrounds. Thus, the evaluators where familiar with foreign accents as well as situations where their own accent is considered foreign. This could affect how the evaluators responded to the accents in the study. SA is highly linguistically diverse and while English is the *Lingua Franca*, it is the first language of only 9.6% of the population (Khokhlova, 2015). As such exposure to an array of "non-standard" varieties is high in this context. This exposure to the accent could explain the similar pattern of credibility ratings across accents.

The negative correlation between perceptions of credibility and the extent to which evaluators agreed with the view presented in the statement is peculiar. The statement providers were instructed to either argue for or against a particular opinion. As a result, the

statements provided tend to be fairly one-sided. However, research has found that two-sided messages are perceived to be more credible (Stapleton & Wu, 2015). Thus, an individual's credibility ratings may have been influenced by the partisan nature of the statement. Even though they agreed, they did not perceive the speaker as credible because the statement provider did not present a balanced or nuanced argument.

As mentioned previously, the statements used were not planned and edited arguments; rather they were naturalistic, unstructured justifications of an opinion. As such, the statements can appear disorganised and uninformed. While an evaluator agreed with the viewpoint presented in the statement, they may still not have agreed with the rationale the speaker used. In this case, the evaluator may have felt that the speaker was misrepresenting the opinion and thus even though the evaluator agreed with the opinion, they may not have felt that the speaker was adequately justifying the view. A misrepresentation of a shared opinion may make the speaker seem less credible while a misrepresentation of a contrary opinion may make the speaker seem more credible.

A misrepresentation of a shared view also highlights discrepancies between the evaluator and the speaker. Participants perceptions of the effectiveness of the arguments made in the statements were not recorded in the study and could be confounding the results. However, this is speculation as there is a scarcity of literature examining the relationship between agreement and credibility.

Limitations and directions for future research

This study indicates that group membership may play a role in how credible accents are perceived to be. However this study was unable to account for the nuance of accent due to design constraints. Grouping accents into ingroup and outgroup resulted in lost distinctions and failed to show a detailed picture of the varieties of accent and accent perception in SA. It is advised that future research investigates how other accent varieties are perceived and how

the speakers of those varieties perceive each other. In so doing, future studies could aim to recruit more representative samples. The low number of BSAE participants in this study could be affecting the results and restricts the conclusions that can be drawn.

Familiarity and salience of accent identity could also be mediating this result. Accent is more salient for some groups in SA than others. A study investigating how accent-group identity interacts with perceptions of accents could create a clearer picture of how this bias is operating. Studies should also consider how the salience of and familiarity with an accent can affect evaluators' perceptions of the accents. While having the same accent does imply familiarity with an accent, exposure to accent varieties could be a potentially influence how evaluators perceive speakers.

The negative relationship between agreement with the viewpoint represented in a statement and its perceived credibility warrants investigation. Little to no research has been conducted on the relationship between agreement and credibility ratings and further research and replication is imperative before conclusions on this relationship can be drawn.

During the debriefing many participants went on to share their own experiences of accent and the biases that can surround it. These experiences were vast. Many participants spoke about feelings of alienation due to accent while others spoke about times they had judged others due to their accent. As such, qualitative studies into the how accents are perceived to effect judgements would be valuable to create a well-rounded understanding of accent bias.

Conclusion

This research investigated how different modalities and different factors within audio can affect perceptions of credibility. It was found that audio versions were perceived to be less credible than written transcriptions of the same statement. However, this effect was mediated by the accent of the evaluator. For individuals who had the same accent as the

statement they were rating there was no difference in how credible they perceived the statement to be in different modalities. This indicates that audio cues can affect judgements but how they do so may be influenced by the identity of the evaluator. In a multilingual country with a history of oppression and discrimination it is important to be aware of how biases operate. Conversations around prejudice are controversial and often avoided; however the willingness of participants to share these experiences indicates that for some people this may be an area where the conversation can begin. The keen interest, stories and support that this research aroused in participants confirms the importance of this research. Research into how modality and accent can affect perceptions of credibility begins a dialog about how these biases operate and provides opportunity to challenge them.

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Appendix A

Diagram of study design

		SAE				BSAE			
		FALSE		TRUE		FALSE		TRUE	
		1	3	2	4	5	7	6	8
INGROUP	AUDIO								
	WRITTEN								
OUTGROUP	AUDIO								
	WRITTEN								

Figure 5.

Diagram illustrating study design.

Grey blocks indicate the modality of the statements heard in version 1 of the experiment and the white blocks indicates the modality of the statements heard in version 2 of the experiment. The order of the statements was randomised.

Appendix B

SRPP announcement to undergraduate students for recruitment

I am conducting an experiment on how people detect and perceive deception for my honours project.

What? For this study, you will need to rate audio and written statements, be willing to have your own voice recorded and fill out a sociodemographic questionnaire (e.g. your age, where you went to school, the languages you speak ect.).

The experiment will take 1 hour.

Who? The study involves audio so participants must have no hearing impediments that cannot be managed with corrective measures (e.g. hearing aids).

Please note if you took part in the "Language and bias study" run by Andre Dippenaar in first semester you cannot take part in this study.

Where? The ACSENT Lab in the P.D. Hahn Psychology Building, Ground Floor.

SRPP points? You will receive 2 points for taking part.

How? To sign up please go to the **"Sign up' tab** on the SRPP vula page and select a timeslot.

If you have any questions please email erasmus.lee.sarah@gmail.com.

Kind regards,

Sarah Erasmus

Appendix C
Attrition diagram

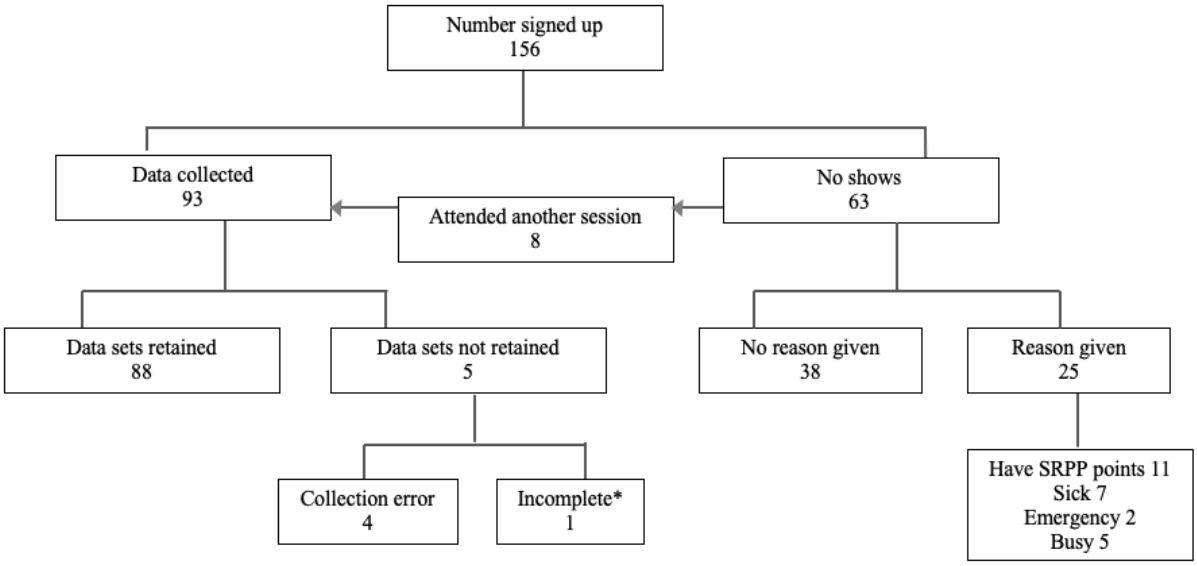

Figure 6.

Diagram of attrition in study. *Indicates participant who completed study in impossibility short about of time and thus the data was discarded.

Appendix D

Overview description of “other” accents

There are many accents in South Africa. The following accents were recorded in this experiment.

Model C accent refers to a “hybrid” variety appearing on the continuum between SAE and BSAE. Similarly to SAE model C speakers exhibit fronting of the GOOSE vowel however, it is not as extreme as in gSAE. Model C speakers also exhibit increased rhoticity (Bekker & van Rooy, 2015).

In Cape Flats English /r/ is commonly realised as a resonant [ɹ] or as fricative[ɾ̆]. In word initial environments /h/ is tends to be realised as [j] and in word final nasals are often emitted (Bekker & van Rooy, 2015).

Foreign accents were accent that did not exhibit any local accent features while foreign (African) indicates that the speaker a non-local African accent (exhibiting features such as /i/ realised as [e] and vowel neutralisation (Bekker & van Rooy, 2015).

Number of participants per accent

Model C - 29

Cape Flats English - 16

Foreign - 10

Foreign (Other African countries) - 3

Appendix 5

Items asked of participants

Questions

Each question/rating appears on a separate slide. Question 1,2 and 3 will appear first, after which the scales will be randomized.

1.Do you think the person is telling the truth (accurately presenting their own opinion)?

Yes=1

No=0

2. How confident are you in your assessment that the person is or is not telling the truth?

1 --2---3--4--5--6--7

Not at all Extremely Confident

3.Do you agree with the view point presented in statement?

1 --2---3--4--5--6--7

Not at all Extremely

Witness Credibility scale

1 --2---3--4--5--6--7--8--9--10

Friendly Unfriendly

1 --2---3--4--5--6--7--8--9--10

Disrespectful Respectful

1 --2---3--4--5--6--7--8--9--10

Unkind Kind

1 --2---3--4--5--6--7--8--9--10

Ill-mannered well-mannered

1 --2---3--4--5--6--7--8--9--10

Pleasant Unpleasant

1 --2---3--4--5--6--7--8--9—10

Untrustworthy Trustworthy

1 --2---3--4--5--6--7--8--9—10

Trustful Untruthful

1 --2---3--4--5--6--7--8--9--10

Dependable Undependable

1 --2---3--4--5--6--7--8--9--10

Reliable Unreliable

1 --2---3--4--5--6--7--8--9—10

Not Confident Confident

1 --2---3--4--5--6--7--8--9--10

Comprehensible Incomprehensible

1 --2---3--4--5--6--7--8--9--10

Tense Relaxed

1 --2---3--4--5--6--7--8--9--10

Friendly Unfriendly

1 --2---3--4--5--6--7--8--9--10

Not self-assured Self-assured

1 --2---3--4--5--6--7--8--9--10

Informed Uninformed

1 --2---3--4--5--6--7--8--9--10

Illogical Logical

1 --2---3--4--5--6--7--8--9--10

Educated Uneducated

1 --2---3--4--5--6--7--8--9--10

Unscientific Scientific

1 --2---3--4--5--6--7--8--9--10

Honest Dishonest

1 --2---3--4--5--6--7--8--9--10

Wise Unwise

Appendix F

Written transcripts

Statement 1

It should be mandatory for 18-year-old South Africans specifically males because…uhm, it's up to the younger people and the younger generations to fight for our country and to fight for what they believe in because it's seen that younger people have a lot more stamina and like younger people are like very willing to like stand up for what they believe in and fight and specifically males should. It should be mandatory for because males are obviously seen as stronger and seen as more braver and I think like males will definitely be more willing to like go and fight for their country specifically if it's what they believe in so much. Because you're here like you're in South Africa that's where you want to be and that's what you want to do and I think its very important because even though like we don't have a lot of like…attacks or like stuff like that I still think its important for there to be a strong base so that people know that like people South Africa's strong and like South Africa and people in South Africa specifically are like willing to fight for their country because like often like people see South Africans as lazy and people see South Africans as like kind of like, mmm, not really willing to do things so I think that making military service mandatory it will just like get people to like start like being proud of south Africa and like I think that's what my main point is, is like people need to be proud and I think by making the military service mandatory it just makes people a lot more proud in my ya…Uhm…I also think its like also its like what people used to do and like I think its like drawing back on a heritage and I think its like really important for this to happen because so like all 18 year old's can go and then like have this huge life experience and then like be able to say like I fought for my country and like this is what I was able to do which i think is like really important and I think

its like a really im- like amazing thing to do is to be able to say I like fought for my country and like this is what I'm proud of and like there is no need to be like…all hesitant about it because like this is what I'm doing and this is what I'm proud of and …uhm…ya and I also think … it is, it should be mandatory like everyone should go so that like it's not discriminatory against race…uhm but I think males are more important like I said earlier because like stronger and uhm…like usually that's like that's what they're seen as not afraid and I think its like really important for them to go.

Statement 2

I believe that, uhm, as students go through high school we gain maturity and students are exposed to alcohol from a very young age whether it be their parents drinking wine at the dinner table or uhm… going out for a drink and having a beer and therefor they've grown up, if they do have parents that drink alcohol, they grow up, uhm, being exposed to it and as you mature and are exposed to these things you can make your own decisions as to whether you want to consume alcohol or not uhm…the consumption of alcohol although it is risky, uhm, I believe that at age 18 you are old enough to make informed decisions about whether you wish to drink or not, uhm, it does come with a risk as you may not know the …implications of drinking alcohol however you do learn that as you start to uhm… consume the substance. I also believe that, uhm…the drinking age should be kept at 18 as, uhm…the major risks of alcohol are uhm… drinking and driving and th-that's why uhm…I would assume they wish to increase the age limit however, uhm, students have, would have been driving for most likely a year after they get their learners and pass their drivers test and this, uhm…this is enough time in my opinion that…students have to decide whether they are able to…drive, uhm, and they are not over the limit, uhm…ya, I think that the age limit should be kept at 18 as …you are often exposed throughout school to what alcohol does

to your body and you're able to make your own decisions about how you wish to, uhm, to go in the future and you're also open, you're exposed to many many different life decisions that are far more, uhm…far more influential than whether you drink alcohol or not and if you are unable to make the decisions about whether to drink, uhm, in the right or wrong circumstance then maybe you're not able to make decisions about living by yourself at university. Or…ya, just general decisions that you make when you're older, uhm… there is a lot of … at least in my circumstances they've been, there's been a lot of exposures as to drinking the correct way which is why I still think that it should be 18. Uhm… I know that I've been informed…in my household to drink the correct way...uhm, and I think that at age 18 I was responsible enough to make decisions about whether I wanted to drink and how much.

Statement 3

We preach every day about forgetting and forgiving, and as much as they've hurt us in the past it doesn't mean we wouldn't forgive them. We won't easily forget about what happened, but it's time to move on and not dwell on the past. And removing English and Afrikaans from the national anthem simply means we're holding that grudge, we're holding the fact that, now in the past they did this, in the past they did that. How long are we going to go on about the past? How long are we going to keep that grudge? And they did this to my grandfather. Yes, they did that, but it's over now. It's been 20, is it 22? 22 years ever since all that happened. We preach about the rainbow nation, we preach about loving the next person. And as a Christian person, I always preach about forgiving. And also treating the next person, loving the next person as you love yourself. The Bible also says that God is love, God caters for everyone, God doesn't go about race. So, now if you say you are a Christian and you believe in loving the next person, you believe in creating unity, you believe in peace, then why would you remove the national anthem, the English and Afrikaans from the national anthem?

I mean, it's about time we brought peace. Now, removing it, removing the two languages will just create this war between the black South Africans, and also the English and the Afrikaner. I mean, it will just create war on top of the war there already is in South Africa. So, it just caters for everyone. Sotho and Tswana are already there, Xhosa and Zulu are already there in the national anthem. And also, I think it's fair. It's fair that English and Afrikaans are also part of the national anthem, because the rainbow nation, we're different, not everyone is the same. And it's about time that we see that in South Africa we're different and there are different races and yes, we're just different. And it's okay to be different, and it's okay to forgive. It's okay to just move on from the past, and just look forward to a new South Africa that just caters for everyone. A new South Africa that doesn't criticise because of race, all the language you use. A new South Africa that just is for everyone who live in it, and everyone who was born in it, just as I always preach. And just learn to love one another. Learn to just accept who we are and not judge each other because of our, the skin of our colour, the colour of our skin. Or what other people did to our grandfathers, our ancestors and stuff like that. We are different from them. We are different from what they did. They are also different from what their ancestors did to our ancestors. So yes it should be removed

Statement 4

Okay, they should not be allowed to attend schools because… They should not be allowed to attend schools because… Because of what? Okay, let me put it this point: People might leave their schools in their area and go to another area because they wanted to be there. But not putting in mind that that area also have their own kids. And then they might be closing space for those kids that are in that area. And also, because… Maybe some people might have the money to go to another area and then they go to that area and then they fill up the space for other children that are from that area. Which is not okay for the kids that are in that area. Some of them will not have the money to go to another area. So I believe it…

People should stick where they are from. They should stick where they are from. And also, it would be easier to make friends with people that you know and you will help each other. Because you know so-and-so cannot do this because you… You play together at school. You play together at playground. You play together at home. So you easily get to know each other and to know the personalities of other people. Whereas, if you are from this area and go to that area, there might be conflict of choices and personalities because you are not from the same area. And to avoid conflict people should just stick from the… Where they come from. And also… To avoid what? I think also people should stick to their… To their areas… People should stick to their areas because it would be good for them. They would save financially. In terms of travelling. They will also save time because they will have to travel long distances. They will also save themselves from starting a new friendship from the ground. So, yes. It will be very helpful for them to stick where they come from.

Statement 5

The mother of an unborn child doesn't have a right to abort without the fathers consent as it takes two to tango. It wasn't just her who had sex like he, if they both made a child together they should both have a decision on what is the child's future. As maybe the mother feels that she can't look after the child when actually the father wants to and can support the child. Uhm, the mother doesn't have the right to abort without the fathers consent as its unfair to have to go through the abortion process by herself she wouldn't she shouldn't…like men often don't have… like they don't experience this first hand and a woman shouldn't go through a traumatic experience without having the person who got her there in the first place. Uhm, the father should have a voice in whether the child should or shouldn't be aborted as the father may have the resources to look after this child without the mother even though she's just carrying the child the father can look after it once its born without the mother. Uhm they both parent to the unborn child so he will have a, he should

have a voice towards its future. Uhm, the mother of the unborn child doesn't have the right to abort without the fathers consent as… if she's in a relationship with this man and she falls pregnant he should know, and he should have a voice and if they're in a marriage often they share money and living space so if the wife uses the husbands money to go abort the child then he should know and he should have a voice in whether it can or cannot be done. Uhm…even in a, even if the father is a rapist it's not the child who was the rapist it's an innocent child and it shouldn't be aborted just because of an a experience, experience of a mother. It can be loved and once its born often you'll feel otherwise than ,uhh, anger sadness from the rape and the mother of an unborn child doesn't have the right to abort without the fathers consent as in court if anything had to happen you'll need both parents anyway.

Statement 6

I agree with the statement because the mother is the one who has to physically carry the child and go through the physical changes and quite often the costs of the birth at the hospital and schooling because the father might not necessarily be present for the rest of that child's life. {Mmm- K} Uhm. And also, this also calls into question whether the fetus has any right to life as well, uhm, and as it is not a born human it's too difficult to say so I would say the mothers rights are the most important in that situation between the father and <laugh> the mother. UHM. What else do I think about this statement … {So what has lead you to having this opinion}. So, what has lead me to have this opinion? Uhm this opinion has been informed by being a woman myself and being able to uh picture myself in that situation uhm also experiences of other woman from a community uhm has led me to have this opinion. Also, uhm, reading a little bit, uhm, on ethics and philosophy although I'm not particularly skilled in that department just having some general information has helped me to form the opinion, uhm, also probably media representations of uhm woman and uhm the impacts that having a child that they didn't plan for can have on them but less so the men unless they are

involved …uhm ya, I'm trying to think what else Uhm <laugh> Uhm…Yes, also social support from the government isn't necessarily good enough uhm for mothers to uhm have to raise children just because the father didn't give consent for an abortion, Uhm cause in South Africa the grant is pretty low and people don't always get by uhm with what they are presented with and also collection of child support doesn't function very well <laugh>

Statement 7

I think if someone would like to end their life they should be given the right to because they clearly don't want to live on this earth any more. And it is their lives, so they should be given the right to. And, let's say they don't want… They no longer want to be a burden on their families any more, and they just don't… They feel like they've lost all their dignity, and being alive is just, you know, they can't bear it anymore, and it's just too much and it's just embarrassing. And let's say because they're terminally ill they can't do anything for themselves. So, they're basically, being practically children, just being taken care of the whole time, and that could be very embarrassing for people. And it's hard on families that have to like take care of them as well. And so, they should just be given the right to commit the suicide, and it will be obviously painless because nobody wants to necessarily die in a painful state. So, if they can also, if doctors, doctors can also like help, can ensure that this assisted suicide can be done in a less painful manner, then I think this would be absolutely no problem for them to… There's absolutely no problem with this assisted suicide.

Statement 8

The consumption of marijuana should not be legal in south Africa because it is, it will increase crime rates in that…Uhm, … Nopepe boys will will, so like, take advantage of that if it's also legalized. People will have an excuse in terms of saying "Oh, I'm sorry I was high. I couldn't do this and this and this." It might encourage younger children to take more drugs more… stronger drugs such as tik, uhm…Marijuana is considered a gateway drug so it could

do that, uhm… it might promote unsafe behavior amongst young people uhhh…to much of it could seriously cause, uhm, addiction which means that an addiction problem and then the state has to.. like allocate funds for rehab facilities especially for young people uh…. Uhhhh…Woo…Uhm…Q…It will, selling marijuana will also open, will will…disguise other drug cartels because people just say "oh no I'm just selling marijuana" whereas they are also selling stronger drugs, Uhm…Selling and consuming marijuana especially in clubs might promote more drug abuse …and causing more, uhm, troubles amongst people because there is already this thing, which is really stupid, that, uhm, Nigerians are drug dealers so it might cause further conflict amongst communities and people so… uhhh…and South Africa is already In a state whereby, a lot of people abuse alcohol so, uhm, legalizing marijuana might not help the statistics anyway …. So yea it's a tough one… Legalizing ok, legalizing marijuana in for for for medication could also be further expenses for the state.

Appendix G

Consent form

University of Cape Town

Deception detection in audio and written stimuli

Please read aloud until the blue line

I, _____(name) consent to the audio recording of my reading the consent form being used as data in the experiment and give consent for the recording to be linguistically analysed.

Purpose

This study aims to access individual's ability to detect deception in audio and written statements.

Procedure

If you participate in this study you will be asked to rate written and audio statements on a number of scales (such as honesty, confidence etc.). Subsequently you will complete a questionnaire on sociodemographic information (such as where you went to school and the languages you speak). This study should take approximately 1 hour and you will be rewarded 2 SRPP points for your participation. Should you feel the need to withdraw from the study you will be able to keep your SRPP points.

Possible Risks, Withdrawal, Confidentiality

There are no anticipated risks of social, psychological, or physical harm. However, participation in this study is completely voluntary and you are free to withdraw at any time without any repercussions. All information and responses you provide in this study will be kept confidential, and your identity will be kept anonymous (i.e. your name will not be linked to the data you provide).

If you have any further questions about the study please email the researcher, Sarah Erasmus, erasmus.lee.sarah@gmail.com or contact Colin Tredoux, Supervisor (Email: colin.tredoux@uct.ac.za, phone: 021 650 3424). If you would like to lodge a complaint, comment on the project or would like information about your rights as a participant please contact Rosalind Adams (email: Rosalind.adams@uct.ac.za, phone: 021 650 3417).

Consent

I, _____, have read and understood the information provided above and I give my informed consent to participate in this study.

Signature: _____ Date: _____

Researcher's Signature: _____

Appendix H

Debriefing form

The Effects of Accent on Perceptions of Credibility

Thank you for taking part in this research.

South Africa's history is one of injustice and discrimination. One needs to be conscious of the how these patterns can repeat themselves. In a multilingual country like South Africa, it is important to be aware of how subtle seemingly extraneous variables such as accent can affect potentially important evaluations. This study aims to shed light on one of the ways biases operate in South Africa by contributing to the body of knowledge exposing the role accent can play in interpersonal credibility assessments. Knowledge of how accent effects perceptions of credibility may be valuable to individuals who are required to make credibility judgments on a daily basis, such as judges, police, lawyers and magistrates.

The purpose of this study is to investigate whether accent can affect perceptions of credibility. Prior research has shown that the accent an individual speaks with can affect how credible others perceive them to be. This has real life implications for people in many contexts, such as legal trials and job interviews. Speakers who deviate from the perceived norm in a given society are often seen, unfairly, as deceptive (Castillo, Tyson, & Mallard, 2014). In South Africa, previous research has suggested that South African English accent (this is the accent associated with mother tongue English speakers) has been rated more reliable, likable, confident and honest than the Cape Flats English accent (Meyer & Tredoux, 2016). While the accent associated with African first language speakers is often constructed as problematic (Makoe & McKinney, 2014). In these studies, the same piece information was presented to participants, all that changed was the accent. The different responses to the

information when only the accent changes indicate bias. For more information about the accents being referred to, please see Mesthrie (2008) for a comprehensive description and explanation.

These biases and perceptions are problematic as they can lead to unfair and inaccurate assessments. This study aims to investigate how accent bias may function in South Africa. The most prominent explanations for the ways accent effects perceptions stem from Social Identity Theory. Social identities are formed through the groups one identifies with. Language and accent are salient features in South Africa and are often linked to identity construction (Álvarez-Mosquera, 2017; Botsis, 2016). This is why you were asked questions about group identity in the questionnaire.

The recordings you heard where collaborators reading transcripts they were given, and are not their actual views. This study will use the ratings of the recordings participants have given to establish if the recordings of one accent are rated as more or less credible than another accent. If there is a difference this could indicate bias.

Few studies have considered whether the accent of the evaluator (i.e. you) can affect how accents are perceived. This is why you were recorded reading of the consent form. The recording will only be used to code your accent variety. The purpose of this is to investigate if the accent an individual has affects how they perceive the accents of others. Your identity will be kept confidential.

Please do not share this information with anyone else who may be taking part in the study.

If you have any questions, would like to discuss issues brought up by the project or would like to know more about the project please email

Sarah Erasmus(researcher)

Email: Erasmus.lee.sarah@gmail.com

Phone: 072 582 3113

or

Colin Tredoux (Supervisor)

Email: colin.tredoux@uct.ac.za

Phone: 021 650 3424

If you would like to comment on the study, lodge a complaint about the study or have questions regarding your rights as a participant please contact Rosalind Adams.

Email: Rosalind.adams@uct.ac.za

Phone: 021 650 3417

If you are upset by any the information in the study, please contact student wellness

Telephone : 021 650 1017

For more information on these topics please see:

Álvarez-Mosquera, P. (2017). Young white Afrikaans speakers in South Africa: A case of liminal identity?. *Folia Linguistica*, *51*(3), 639-670. doi:10.1515/flin-2017-0024

Cargile, A. C., & Giles, H. (1997). Understanding language attitudes: Exploring listener affect and identity. *Language & Communication*, *17*(3), 195-217. doi:10.1016/s0271-5309(97)00016-5

Dixon, J. A., Tredoux, C. G., Durrheim, K., & Foster, D.H. (1994). The role of speech accommodation and crime type in attribution to guilt. *The Journal of Social Psychology*, *134*(4), 465-473. doi:10.1080/00224545.1994.9712197

Makoe, P., & McKinney, C. (2014). Linguistic ideologies in multilingual South African suburban schools. *Journal of multilingual and multicultural development*, *35*(7), 658-673. doi:10.1080/01434632.2014.908889

Mesthrie, R. (2008). *Africa, South and Southeast Asia.* Berlin: Monton de Gruyter.

doi:10.1515/9783110208429

Meyer, M. I., & Tredoux, C. G. (2016). Who do you believe? Effects of English, Cape Coloured and gay accents on perceived witness credibility. *Acta Criminologica: Southern African Journal of Criminology*, *29*(1), 18-32. Retrieved from

Appendix 9

Scatter diagrams

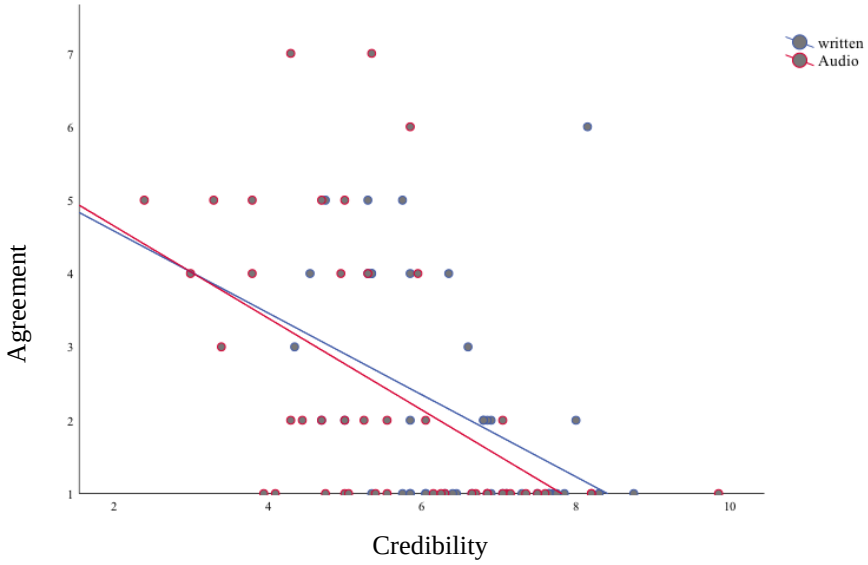

Figure 7.
Scatterplot showing relationship between agreement and credibility to audio (R^2=0.17) and written (R^2=0.28) for statement 1

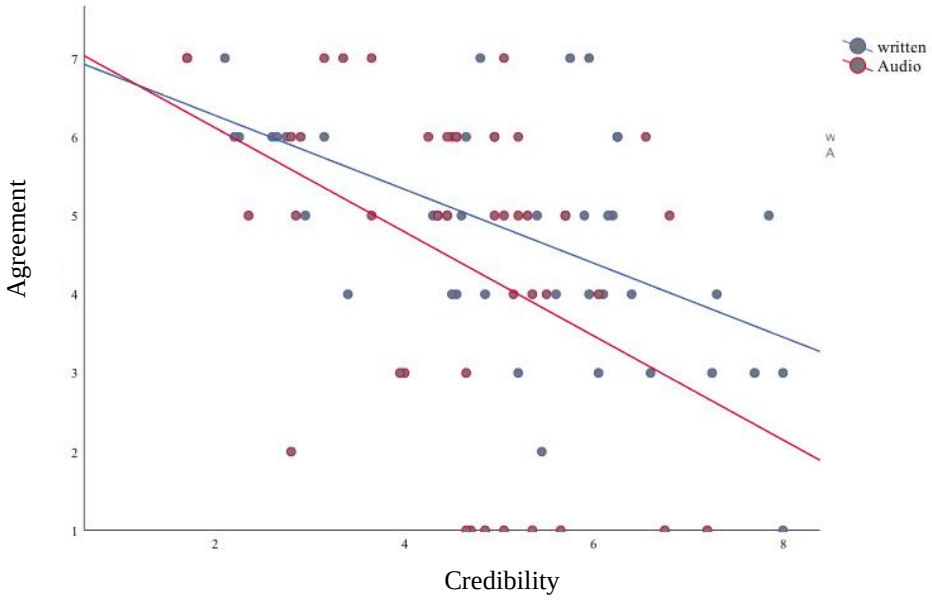

Figure 8.
Scatterplot showing relationship between agreement and credibility to audio (R^2=0.18) and written (R^2=0.3) for statement 2

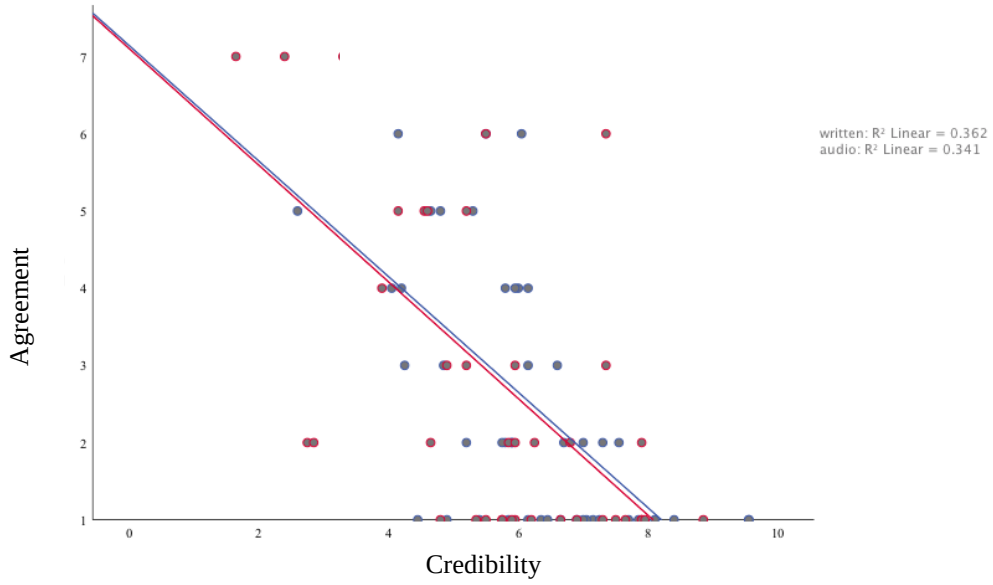

Figure 9.
Scatterplot showing relationship between agreement and credibility to audio (R^2=0.36) and written (R^2=0.34) for statement 5

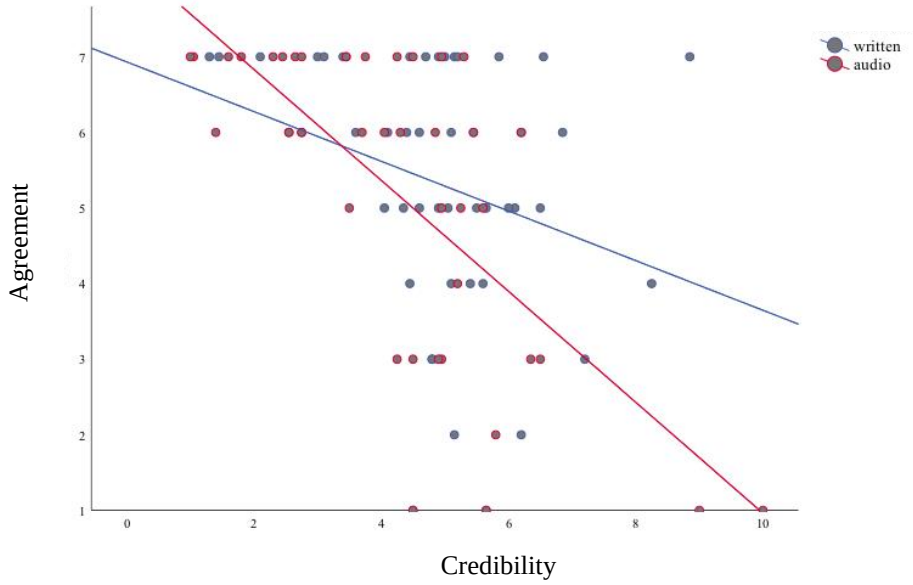

Figure 10.
Scatterplot showing relationship between agreement and credibility to audio (R^2=0.48) and written (R^2=0.08) for statement 6

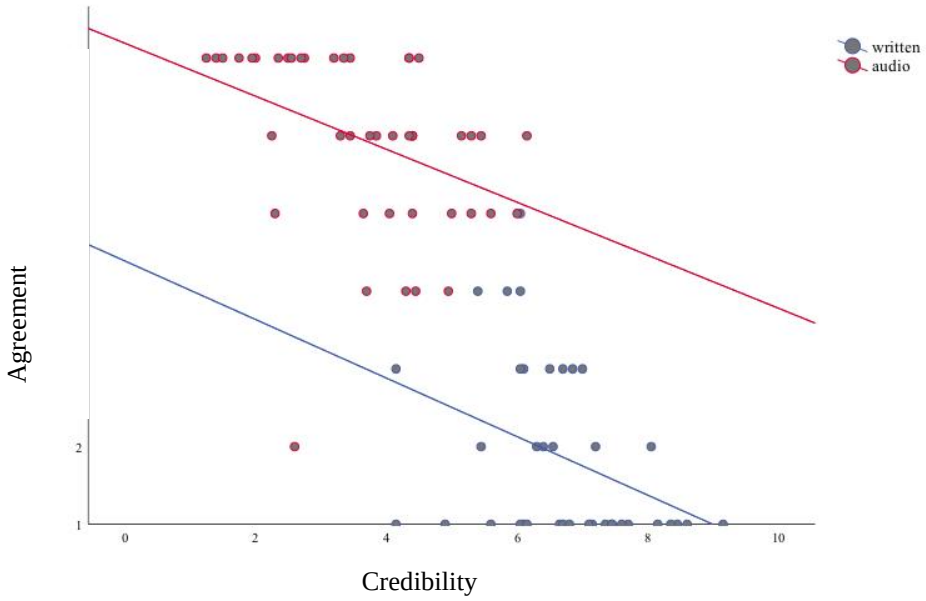

Figure 11.
Scatterplot showing relationship between agreement and credibility in audio (R^2=0.15) and written (R^2=0.14) for statement 3

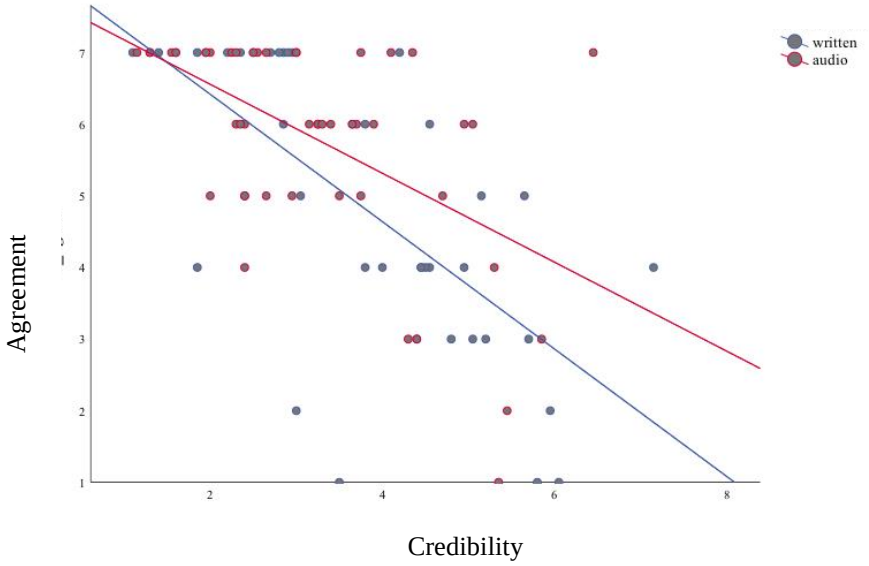

Figure 12.
Scatterplot showing relationship between agreement and credibility in audio (R^2=0.44) and written (R^2=0.27) fo

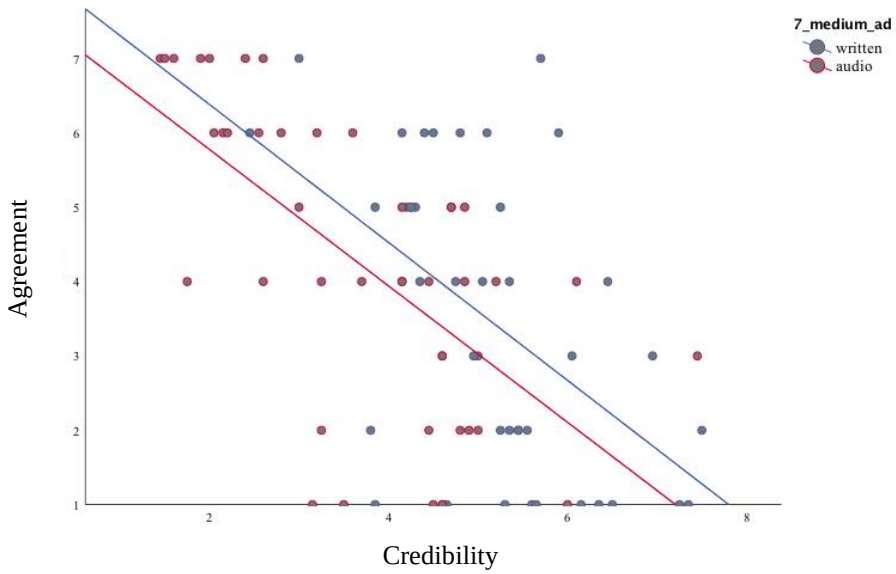

Figure 13.
Scatterplot showing relationship between agreement and credibility in audio (R^2=0.4) and written (R^2=0.27) for statement 7

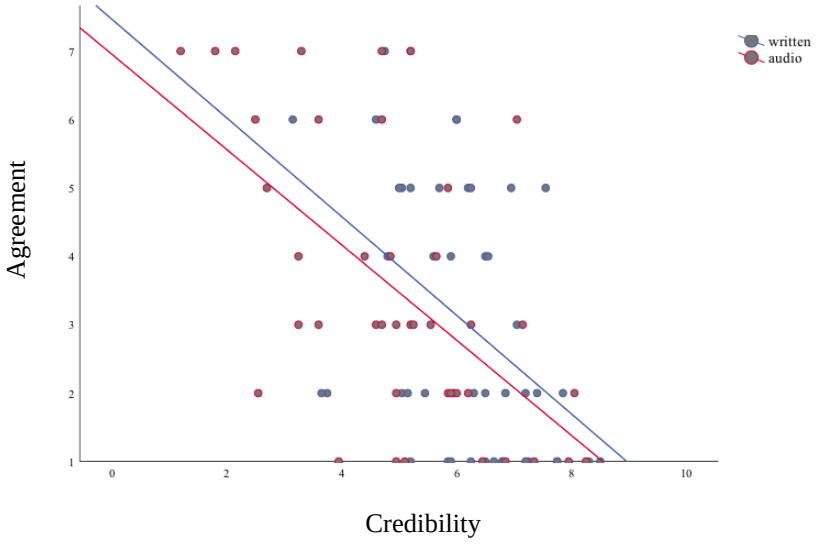

Figure 14.
Scatterplot showing relationship between agreement and credibility in audio (R^2=0.4) and written (R^2=0.20) for statement 8