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It's How You Say It: A Study of Social Perceptions of Speech Rate and Accent

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Abstract

Speech rate and accent respectively have been shown to impact perceptions of personality and social competence. This study seeks to determine whether perceived intelligence and effectiveness of persuasion are influenced by both speech rate and accent. Participants were randomly assigned to listen to a speech performed one of four ways: fast rate with neutral accent, fast rate with southern accent, slow rate with neutral accent, and slow rate with southern accent. They rated the speaker on persuasiveness, intelligence, and the Big Five personality traits. The results indicated that speech rate has an effect on perceived extraversion, conscientiousness, persuasiveness, and communication skills, and that accent has an effect on perceptions of agreeableness, intelligence, and communication skills.

Communication is typically thought of in terms of verbal messages. Ideally, when information is being communicated, the verbal content of the message would be the most important part of the message. However, people often rely on nonverbal forms of communication like appearances, facial expressions, or body movements (Ambady, Hallahan, & Rosenthal, 1995). These are some of the most conspicuous forms of nonverbal communication. People are often unaware that their perception of a person can be impacted by paralinguistics or characteristics of speech. Further research into this matter could help individuals prevent themselves from stereotyping others based on paralinguistics, and it could help individuals alter their speaking patterns when addressing an audience.

Research also shows that characteristics of speech can influence perceived characteristics of speakers. Pearce and Brommel (1972) conducted a study in which a male speaker delivered the same speech once in a conversational style and once in a dynamic style. Conversational style is generally characterized by lower pitch, less volume, and less us of pauses or fluctuation in speech rate. Dynamic style generally has more fluctuation in pitch and rate and is louder than conversational style. Participants rated the conversational speaker as being significantly more trustworthy than the dynamic speaker. There is evidence that vocal characteristics play a part in how persuasive individuals perceive a speech to be. In a study by Packwood (1974), participants rated persuasive statements as highly persuasive or less persuasive. Researchers then measured the decibel levels of the 24 highest and lowest rated persuasive statements. They found that the statements that were rated as highly persuasive were louder than the statements that were rated as less persuasive. In another study, participants listened to 24 short speeches. They were then asked to rate the speakers' personality traits. The researchers found that participants rated speakers with more resonance as more conscientious and more emotionally stable. Speakers with

higher pitched voices were rated as less emotionally stable and less agreeable (Scherer, 1978). Similarly, Apple, Streeter, and Krauss (1979) found that participants rate speakers with high-pitched voices as less trustworthy and more nervous.

Within the realm of paralinguistics, research has shown that speech rate affects social perceptions and persuasion. Perceived social attractiveness, intelligence, and persuasiveness are three of the most studied traits in terms of speech rate. Perceived social attractiveness can be influenced by speech rate. Buller, LePoire, & Eloy (1992) found that participants gave the highest ratings of social attractiveness to speakers who had similar speech rates. These results were duplicated in a similar study by Feldstein, Dohm, & Crrown (2001). A study conducted in 1974 tested the effect of speech rate on perceptions of benevolence. The researchers found that speech rate and benevolence were negatively correlated so that fast speakers were rated as less benevolent than slow speakers (Brown, Strong, & Rencher, 1974).

Speech rate has also been shown to affect perceptions of competence or intelligence. Brown, et al. (1974) found that while speech rate and perceived benevolence were negatively correlated, speech rate and perceived competence were positively correlated. Participants in this study evaluated 28 voices with paired opposite adjectives that relate to competence or benevolence. They found that as speech rate went up, perceived competence also went up. Miller, Maruyama, Beaber, & Valone, (1976) sought to determine whether known credibility of the speaker and speech rate would impact participants' perceptions of competence. They found that participants rated the faster speaker as having greater intelligence, greater knowledge, and more objectivity regardless of the credibility of the speaker.

Accent can also affect social perception. A standard accent is the accepted accent of the majority of the population. A non-standard accent refers to accents that are considered foreign or

spoken by minorities (Fuertes, Gottdiener, Martin, Gilbert, & Giles, 2011). In a North American class room, researchers tested perceptions of intelligence in speakers with North American, British, and Malaysian accents. The results showed an in-group bias with subjects rating the North American accented speaker as more intelligent. After listening to the speeches, those who heard the North American accented speech scored significantly higher on a comprehension and recall test (Gill, 1994). In a meta-analysis that measured the effects of standard and non-standard accents of social perceptions, researchers found that overall, standard accents are rated more positively than non-standard accents. Specifically, standard accents were perceived as significantly more intelligent and successful than non-standard accents. In the United States, the standard accent favorability was stronger than in any other country studied (Fuertes, et al. 2011). Within the United States, regional accents also play a role in social perception. Kinzler and DeJesus (2013) studied the influence of accent on social perception in children. They used two age groups: 5-6 year olds and 9-10 year olds. They also studied children from two different regions: north and south. The northern 5-6 year olds reported that they would prefer to be friends with the northern accented speaker over the southern accented speaker while the southern 5-6 year olds had no preference. The 9-10 year age group from both the north and the south rated the northern speaker as seeming smarter and the southern accented speaker as sounding nicer. These results are supported by a study conducted by Boucher, Georgina, McLaughlin, & Henry (2011). Participants in this study were adults who were asked to evaluated speakers with either a United States southern accent, or a U.S. neutral accent. The neutral accented speaker was viewed as more competent while the southern accented speaker was viewed as more benevolent.

This study seeks to determine if speech rate, or accent, or a combination of both affects perceptions of personality, intelligence, and competency in persuasion and communication skills.

While previous research supports altered social perceptions influenced by speech rate and accent, the literature is sparse. Even rarer is research that combines speech rate and accent in an evaluation of social perceptions.

It is predicted that fast speech rate and neutral accent will be rated as more conscientious while the slow speech rate and southern accent will be rated as more agreeable. The second hypothesis is that faster speech rate and neutral accent will be perceived as more intelligent than the southern accented slow speaker. Finally we predict that the neutral accent and fast speaker will be perceived as more competent in persuasion and communication skills. The design of this study is a 2 (fast/slow speech rate) x 2 (neutral/southern accent) factorial. Each participant was randomly assigned to one of four conditions: fast neutral, fast southern, slow neutral, or slow southern.

Method

Participants

Participants were 101 undergraduates from a private Southern Christian university who participated in exchange for course credit. 72 female, and 29 male participants were analyzed, 90.1% being Caucasian, 5.9% African-American/Black, 2% Bi-or Multi-Racial, 1% Hispanic/Latino/a, and 1% Native American. Participants ranged in age from 18 to 22 years old. The mean age was 20.26 with a standard deviation of 1.29. 96% of participants grew up in the southern region of the United States.

Materials

The participants listened to an argumentative speech about the importance of recycling. The speech was recorded by a male theater student at Ouachita Baptist University. He recorded the speech once in a neutral, or American mid-western, accent and once in an American southern

accent. The researchers then manipulated the two recordings so that each accent condition had two speech rates. The fast speech rate condition averaged 180 words per minute. The slow speech rate condition averaged 125 words per minute. The script to this speech is located in Appendix A. The participants were given a series of questionnaires. The first questionnaire was created by the researcher, and it asked participants to rate the persuasive qualities of the speech. The persuasiveness scale consisted of 6 items (α=.75). The second questionnaire was also created by the researcher, and it asked the participants different questions about the speaker. The participants rated statements such as "I think this speaker is intelligent" and "I think this speaker has good communications skills". Both the first and second questionnaires were measured using a 5-point Likert-type scale from 1 (disagree strongly) to 5 (agree strongly).

The Ten Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003) is a 10-item measure of the Big Five (or Five-Factor Model) dimensions. Participants rated the speaker on the personality traits of extraversion (α=.659), agreeableness (α=.527), emotional stability (α=.425), openness to new experiences (α=.329), and conscientiousness (α=.560) on a 7-point scale from 1 (disagree strongly) to 7 (agree strongly).

Procedures

Participants were randomly assigned to one of the four conditions involving accent and speech rate. After filling out the informed consent form, participants were asked to fill out a demographics form. Then, they listened to the speech. Finally, participants completed the Speech and Speaker questionnaire and the Ten Item Personality Measure. The design of this study was a 2 (fast/slow speech rate) x 2 (neutral/southern accent) factorial.

Results

Big 5 Personality Traits

An analysis of variance was conducted to see if speech rate, accent, or a combination of the two variables had an effect on perceptions of the Big 5 personality traits: Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness to Experience.

There was a main effect of speech rate on perceptions of Extraversion [$F(1,100)=14.06, p<.05$] with participants rating the fast speaker as more extraverted than the slow speaker. There was no main effect of accent on perceptions of Extraversion [$F(1,100)=0.13, p>.05$]. There was no significant interaction between speech rate and accent on perceptions of Extraversion.

There was no main effect of speech rate on perceptions of Agreeableness [$F(1,100)=2.09, p>.05$]. There was a main effect of accent on perceptions of Agreeableness [$F(1,100)=7.65, p<.05$] with participants rating the southern accent speaker as more agreeable than the neutral accent speaker. There was not a significant interaction between speech rate and accent on perceptions of Agreeableness.

There was a main effect of speech rate on perceptions of Conscientiousness [$F(1,100)=5.75, p<.05$] with participants rating the fast speaker as more conscientious than the slow speaker. There was also a main effect of accent on perceptions of Conscientiousness [$F(1,100)=4.48, p<.05$] with participants rating the neutral accent speaker as more conscientious than the southern accent speaker. There was not a significant interaction between speech rate and accent on perceptions of Conscientiousness (See Figure 1).

The analysis showed no significant results for Emotional Stability, and Openness to Experience (See Table 1 for complete list of results).

Intelligence

An ANOVA was conducted to see if speech rate, accent, or a combination of the two variables had an effect on perceptions of intelligence. There was no main effect of speech rate on perceptions of intelligence, [F(,1,100)=2.86, p>.05]. There was a main effect of accent on perceptions of intelligence, [F(1,100)=4.02, p<.05] with participants rating the neutral accent speaker as more intelligent than the southern accent speaker. There was no significant interaction between speech rate and accent on perceptions of intelligence (See figure 2).

Persuasiveness

There was a main effect of speech rate on perceptions of persuasiveness, [F(1,100)=4.82, p<.05] with participants rating the fast speaker as more persuasive than the slow speaker. There was no main affect for accent nor was there a significant interaction between speech rate and accent on perceptions of persuasiveness (See table 2 for complete list of results).

Communication Skills

There was a main effect of speech rate on perceptions of communication skills [F(1,100)=17.33, p<.05] with participants rating the fast speaker as having better communication skills than the slow speaker. There was a main effect of accent on perceptions of communication skills [F(1,100)=4.49, p<.05] with participants rating the neutral accent speaker as having better communication skills than the southern accent speaker. There was also a significant interaction between speech rate and accent [F(1,100)=4.58, p<.05] with participants rating the fast, neutral accent speaker significantly higher than the other conditions (See Figure 3).

Discussion

Previous research has shown that speech rate and accent can affect social perceptions. The present study supports the existing research and provides insight for possible future directions.

The first hypothesis of this study predicted that fast speech rate and neutral accent would be rated as more conscientious and that slow speech rate and southern accent would be rated as more agreeable. The results showed that fast speech rate was rated as more conscientious than slow speech rate and that the neutral accented speaker was rated as more conscientious than the southern accented speaker. The results only partially supported the prediction that slow speech rate and southern accent would be rated as more agreeable. There was no main effect of speech rate, but the southern accented speaker was rated as significantly more agreeable than the neutral accented speaker. This supports the findings of Kinzler and DeJesus (2013) and Boucher, et al. (2013). These results suggest a tendency towards the Southern hospitality stereotype. However, the facts contradict this stereotype. According to FBI 2012 crime statistics, the southern region of the United States has more violent crime than the rest of America (U.S Federal Bureau of Investigation 2012).

The second hypothesis predicted that faster speech rate and neutral accent would be perceived as more intelligent than the slower speech rate and southern accent. Our results were partially supported. There was no significant interaction, and there was no main effect of speech rate. However, the results show that the neutral accented speaker was perceived as significantly more intelligent than the southern accented speaker, regardless of speech rate. This finding was interesting considering that 96% of my sample grew up in the southern region of the United

States. It is interesting that they would rate the southern accent as less intelligent when that is what they encounter daily.

The final prediction was that the faster speech rate and neutral accented speaker would be perceived as more competent in persuasion and communication skills than the slow, southern accented speaker. For competence in persuasion, our hypothesis was partially supported. Participants rated that fast speaker as more persuasive than the slow speaker. There was no main affect for accent nor was there a significant interaction between the two variables for persuasiveness. The hypothesis for competence in communication skills was fully supported. Participants rated the fast, neutral speaker as having significantly better communication skills than all other conditions.

Limitations

There were a few limitations in this study that should be addressed. Our sample was taken from students at a small, private, southern, Christian university, where environment, beliefs, and values might differ from the general population. In addition, our sample consisted primarily of Caucasian females. Packwood (1974) demonstrated that loudness of speech can have an effect on social perceptions. The volume of the speeches in this study was not closely controlled and could have affected results.

Future Directions

Based on the results of the current study, there are many future related topics that should be researched. Future research should take into account the limitations of the current study. It would be interesting to duplicate this study in the northern region of the United States. If southerners gave the southern accented speaker poor ratings, it could be predicted that northerners would be even harsher. It is possible that the gender of the speaker could have an

influence on persuasiveness or intelligence. It would be interesting to see whether speech rate and accent play an even bigger role in social perception of women. This study could also be adapted to measure social perceptions of different ethnic accents within the United States.

These results are important because they can be applied in many areas of the professional world. Individuals who are in charge of hiring, should keep in mind that their perception of a potential employee may be influenced by something as little as how quickly they speak. Job hunters can prepare for interviews by using the results of this study in order to sound like an ideal candidate. Any public speaker can use this information to train themselves how to speak in a way that will be most persuasive. A politician could speak in a neutral accent if they wanted to seem intelligent, or they could speak in a southern accent if they wanted to seem more agreeable or benevolent. It is important to continue research on this topic so that the general public can be aware that stereotypes associated with paralinguistics exist and will know to avoid them.

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Table 1

Means and standard deviations for Big Five personality traits by accent condition

	Speaker					
	Neutral Accent			Southern Accent		
Variable	Fast Speech Rate	Slow Speech Rate	Total	Fast Speech Rate	Slow Speech Rate	Total
Extraversion						
N	23	21	44	32	25	57
M	4.00	2.86	3.45	3.75	2.92	3.39
SD	1.31	1.31	1.42	1.52	0.95	1.36
Agreeableness						
N	23	21	44	32	25	57
M	4.24	3.55	3.91	4.53	4.48	4.51
SD	1.19	1.04	1.16	1.06	1.11	1.08
Conscientiousness						
N	23	21	44	32	25	57
M	5.48	4.98	5.24	5.03	4.6	4.84
SD	0.89	1.17	1.05	0.95	0.87	0.93
Emotional Stability						
N	23	21	44	32	25	57
M	5.28	4.83	5.07	5.33	5.38	5.35
SD	0.90	1.08	1.00	1.04	0.82	0.94
Openness to Experience						
N	23	21	44	32	25	57
M	3.61	3.31	3.47	3.73	3.50	3.63
SD	1.14	1.25	1.19	0.86	0.98	0.91

Table 2

Social Attributions as a Function of Speaker Speech Rate and Accent

Variable	*F*	*df*	*p*
Intelligence			
Speech Rate	2.86	1	.094
Accent	4.02	1	.048
Speech Rate*Accent	1.45	1	.230
Extraversion			
Speech Rate	14.06	1	.000*
Accent	0.13	1	0.723
Speech Rate*Accent	0.35	1	0.553
Agreeableness			
Speech Rate	2.82	1	0.097
Accent	7.65	1	.007*
Speech Rate*Accent	2.09	1	0.151
Conscientiousness			
Speech Rate	5.75	1	.018*
Accent	4.48	1	.037*
Speech Rate*Accent	0.03	1	0.86
Persuasiveness			
Speech Rate	4.82	1	.030*
Accent	3.07	1	0.083
Speech Rate*Accent	0.008	1	0.93
Communication Skills			
Speech Rate	17.33	1	.000*
Accent	4.49	1	.037*
Speech Rate*Accent	4.58	1	.035*

Figure 1

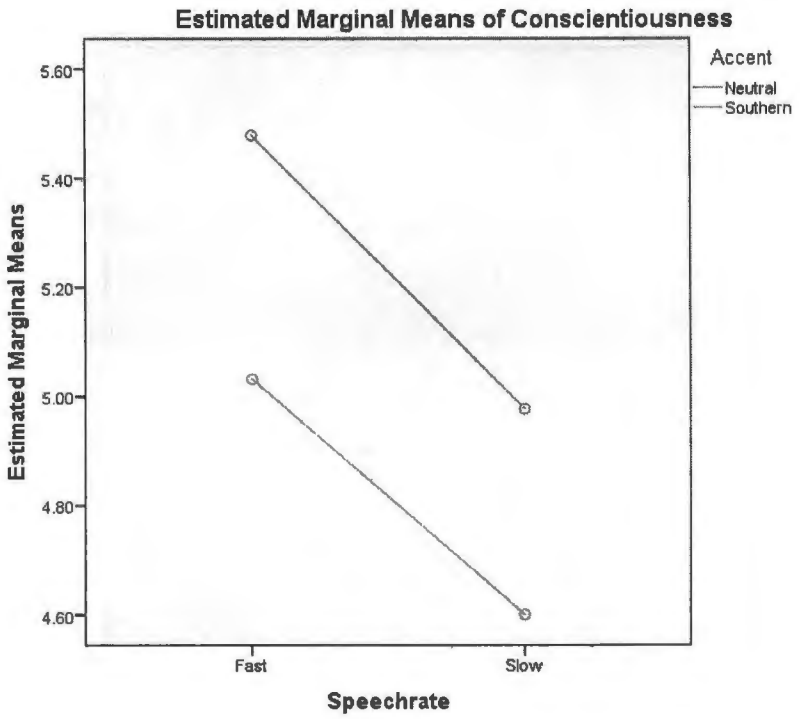


Figure 2

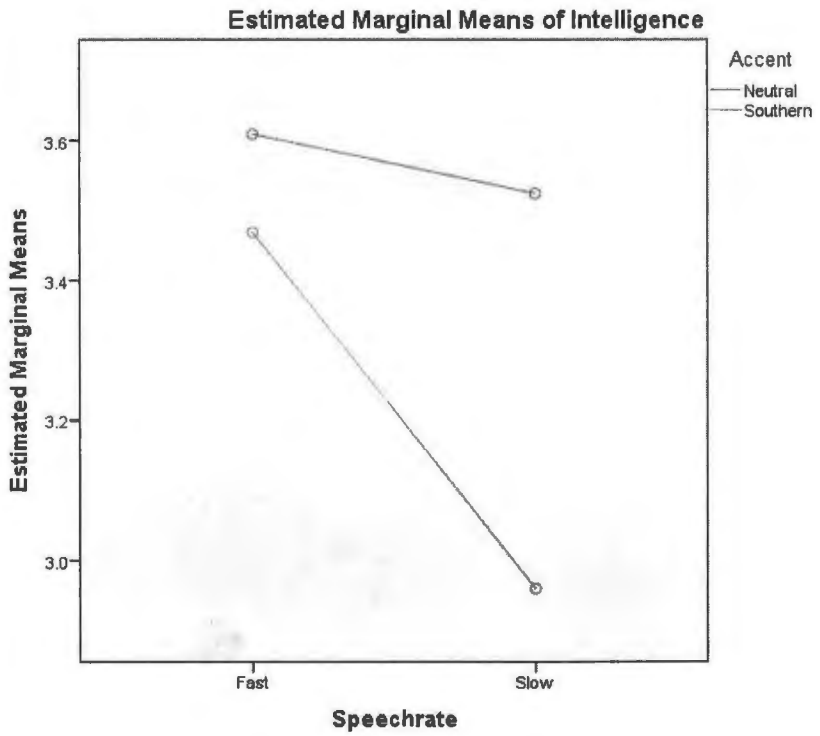
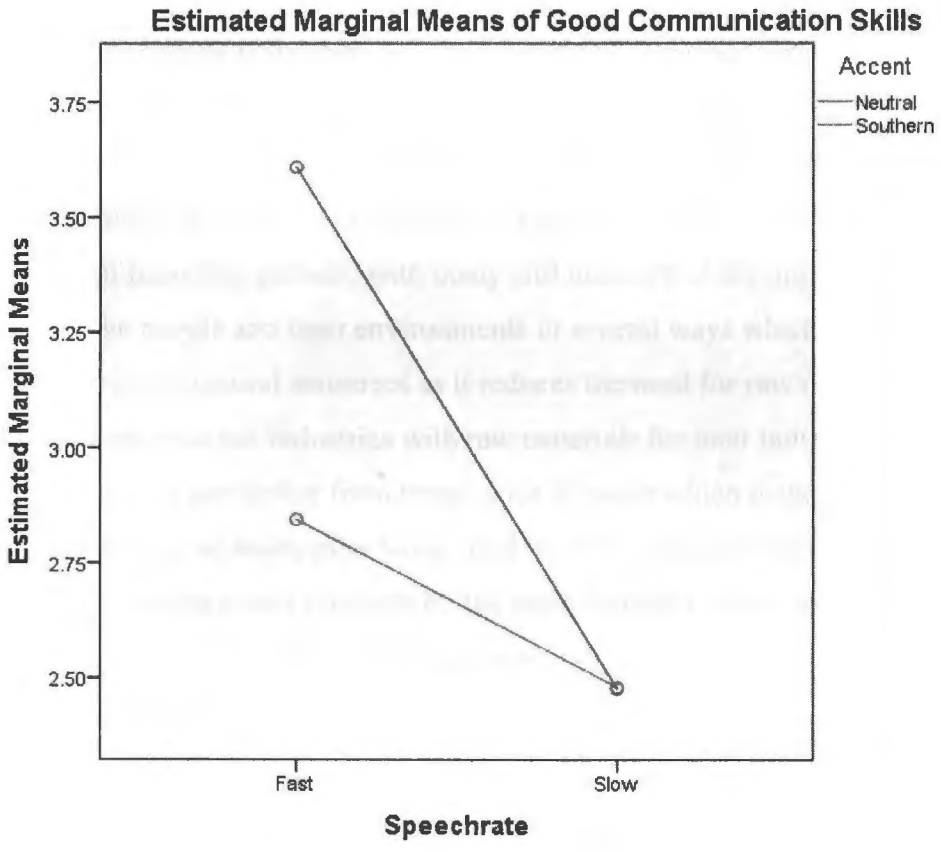


Figure 3


Estimated Marginal Means of Good Communication Skills
Accent
Neutral
Southern
Estimated Marginal Means
3.75
3.50
3.25
3.00
2.75
2.50
Fast
Slow
Speechrate

Appendix A

Script of speech

Recycling of waste is the making of new products from materials that have previously served their use or are not required. These materials are put into new use which otherwise could have been thrown away. Recycling can also be seen as an environment friendly way of disposing off these materials from our environments. Large populations of people today are realizing the benefits of recycling globally with many still unaware of the importance of doing so. Recycling benefits the people and their environments in several ways which include the following:

It conserves the natural resources as it reduces the need for raw materials by Industries. Natural resources provide our industries with raw materials for their industrial processes like Paper factories which use timber from trees. A lot of paper which is the finished product of these factories end-up as waste after being used in offices and schools. These can be collected and recycled to produce new products by the same factories. Many paper industries today are recycling paper waste to make toilet papers and paper bags which are most commonly used around the world.

Recycling also protects the environments that we live in by preventing pollution. It is common in many third world nations to find litter which comprises plastic bags and paper which cannot decompose thus maintaining their state for years on the soil. This makes the environment unpleasant to be in or even look at. Discharge of raw sewage into our environments also worsens the situation by contaminating it. In order to ensure that our environment is protected, we should embrace the concept of personal responsibility by ensuring we re-use and reduce all non-biodegradable materials.

Recycling plays an important role in modern economies that are characterized by increasing industrialization which creates pressure for limited natural resources by ensuring waste is re-used and reduced.