The "Autistic Accent": Can People Really Guess if Someone is Autistic Based on How They Speak?

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B.A., University of New Hampshire, 2023

A thesis submitted to the
Faculty of the Graduate School of the
University of Colorado in partial fulfillment
of the requirement for the degree of
Masters of Arts
Department of Linguistics
2025

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Abstract

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The "Autistic Accent": Can People Really Guess if Someone is Autistic Based on How They Speak?
Thesis directed by Rebecca Scarborough and Kira Hall

This study aims to investigate whether the average listener can identify autistic speakers based solely on phonetic patterns found in autistic speech. Participants completed a listening-based survey where they were asked to assess the person's autistic status. The percentage of correct answers, d-prime, and certainty scores were analyzed both for the participants and the speakers. Results showed that middle-aged participants outperformed the younger and older age groups. They also suggest that women are more likely to be labeled 'not autistic' compared to their male counterparts. Finally, the ultimate conclusion is that the 'autistic accent', as investigated in purely phonetic terms in the current study, is slightly perceivable. These results have implications for linguistic profiling and perceptions of neurodivergence.

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CHAPTER 1

1. INTRODUCTION

The neurodiversity movement has grown significantly since its inception, gaining traction and visibility throughout society, particularly online, where individuals share their experiences, challenges, and triumphs. Judy Singer's introduction of the term 'neurodiversity' in 1998 within the autism rights movement marked an important moment, shifting the conversation from viewing neurological differences solely as disabilities to recognizing them as part of the natural variation in human cognition (Kapp 2020). In this thesis, I will explore a concept born of this movement, often called the 'autistic accent,' and if something is being phonetically and prosodically perceived.

The 'autistic accent' is a metalinguistic term used especially by autistic speakers themselves that has arisen recently in tandem with neurodiverse activism online. Many creators have noted their differences in speech and referred to these differences as an 'autistic accent.' Creators such as @morgaanfoley (2023), @angelfromthebloc (2024), @goddessofbees (2023), and @candy.courn (2023) describe imitating the people, family and friends, around them to fit in societally, which sometimes has the opposite effect.

To understand the idea of an 'autistic accent' more specifically, I will expand on additional context for neurodiversity. Despite starting within the autism rights movement, the neurodiversity movement has evolved to encompass a wide range of neurodivergent experiences beyond exclusively autism, now including ADHD, dyslexia, borderline personality disorder, Tourette syndrome, and more. Its core principle is celebrating and accepting neurodiversity as an intrinsic aspect of human diversity rather than a deviation from a norm. By promoting understanding, acceptance, and accommodation, this movement has brought reflexivity, meaning

speakers themselves are beginning to notice ways of speaking associated with autism, along with the researchers who study autistic speech.

Online platforms have played a crucial role in fostering community, supporting, and raising awareness about neurodiversity. Through blogs, forums, social media groups, and other digital spaces, people can connect with others who share similar experiences, exchange advice, and challenge societal stereotypes and stigmas associated with neurodivergence.

1.1 A Brief Overview of Autism

Autism spectrum disorder (ASD) is characterized by differences in communication and social interaction in everyday situations (Grice et al. 2023). Traditionally, research on empathy and social connections assumed that autistic individuals experience empathy in ways parallel to neurotypical people (Ortega & Suparna 2011). This exclusion overlooked the subtle distinction of autistic people's social experiences, who may express empathy differently or face challenges in social situations.

Historically, funding for autism research has predominantly focused on biogenetic and neurological approaches aimed at curing or preventing autism (Hart 2014). This narrow focus has preserved the idea that autism is a deviation from the norm rather than a valid variation of human neurodiversity. Furthermore, sensationalized claims, such as the debunked link between the MMR vaccine and autism first proposed by A J Wakefield in 1998, have fueled misinformation and stigmatization surrounding autism (Godlee, Smith, & Marcovitch 2011). Such false statements have reinforced understandings of autism exclusively as a pathological condition and thus in need of a cure rather than a legitimate neurological difference.

In recent years, there have been tremendous advancements in our understanding of autism and in promoting increased acceptance and inclusion of autistic people. There is still a persistent perception of individuals with autism as essentially ‘other’ or them being holistically different from their neurotypical counterparts. This deeply ingrained belief not only undermines attempts to recognize and honor the wide range of experiences and assets within the autistic community, but also feeds negative stereotypes and false beliefs. The road to true inclusivity and understanding is still long and complex, despite constant efforts to humanize autistic people and refute these dominant narratives.

Initiatives to counteract stigmas and advance neurodiversity have emphasized appreciating each person’s intrinsic worth and individuality, regardless of their neurocognitive profile. In addition to recognizing the variety of ways people perceive and navigate the world, embracing neurodiversity means actively tearing down obstacles to inclusion and creating environments that value individuality. To be truly inclusive, one must go beyond tolerance and cultivate true empathy, understanding, and respect for the many ways that neurodiversity enhances the human experience as a whole. In pursuing a more inclusive society, we must elevate the voices and viewpoints of people with autism, give prominence to their experiences in conversations about the condition, and collaborate to build a culture that values and celebrates neurodiversity in all its forms. This study aims to lay the groundwork and a step toward a more inclusive understanding of autistic speech by considering the speakers themselves and giving the space to continue research focusing on the speaker’s experience. In an attempt to elevate the autistic experience and highlight the literal voices of this group, I will consider the discourse surrounding autistic speech and ask whether the voices of autistic individuals are identifiably autistic.

1.2 Linguistic Effects Found in Autism

Let us start with the phonetic features. In Figure 1, taken from Grice et al. 2023, the differences between autistic and non-autistic speakers are categorized into rhythm, pitch range, pitch contours, pitch dynamics, and pauses. These categories are particularly important, as most of the studies sampled show a difference in them between the two groups of speakers.

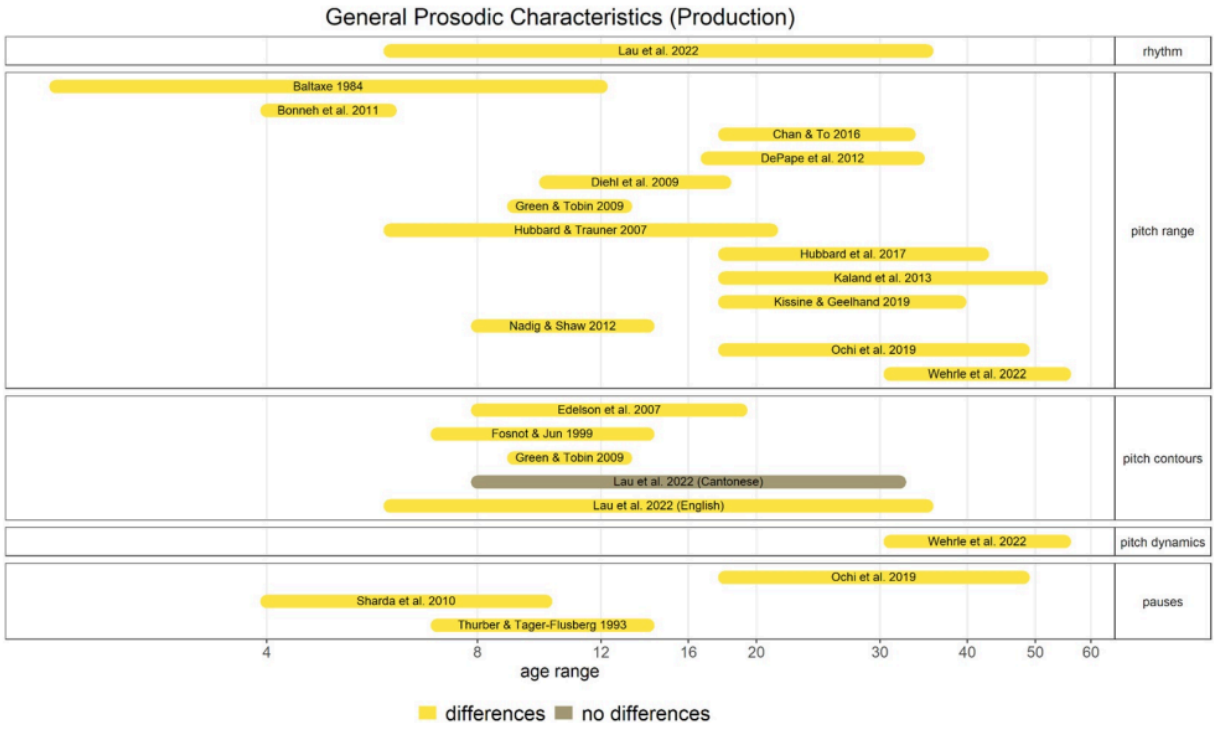

Figure 1: "Overview of studies on general prosodic characteristics according to prosodic parameters and to whether differences were found between ASD and control groups (yellow) or not (grey)."(Grice et al. 2023).

A significant portion of linguistic research on autistic individuals has centered on the study of prosody (Grossman et al. 2010, Krüger et al. 2018, & Kruyt & Beňuš 2021), encompassing various linguistic categories such as lexical stress, lexical tone, speech acts, turn-taking, as well as semantic elements like intentions, information structure, and emotional expression (Grice et al. 2023). Figure 2, taken from Grice et al. 2023, outlines the framework of

the 51 studies compiled in Grice et al.'s article. These move from more formal speech patterns like lexical stress and lexical tone to more intuitive aspects of language like emotional state, which changes the pitch of a sentence or word.

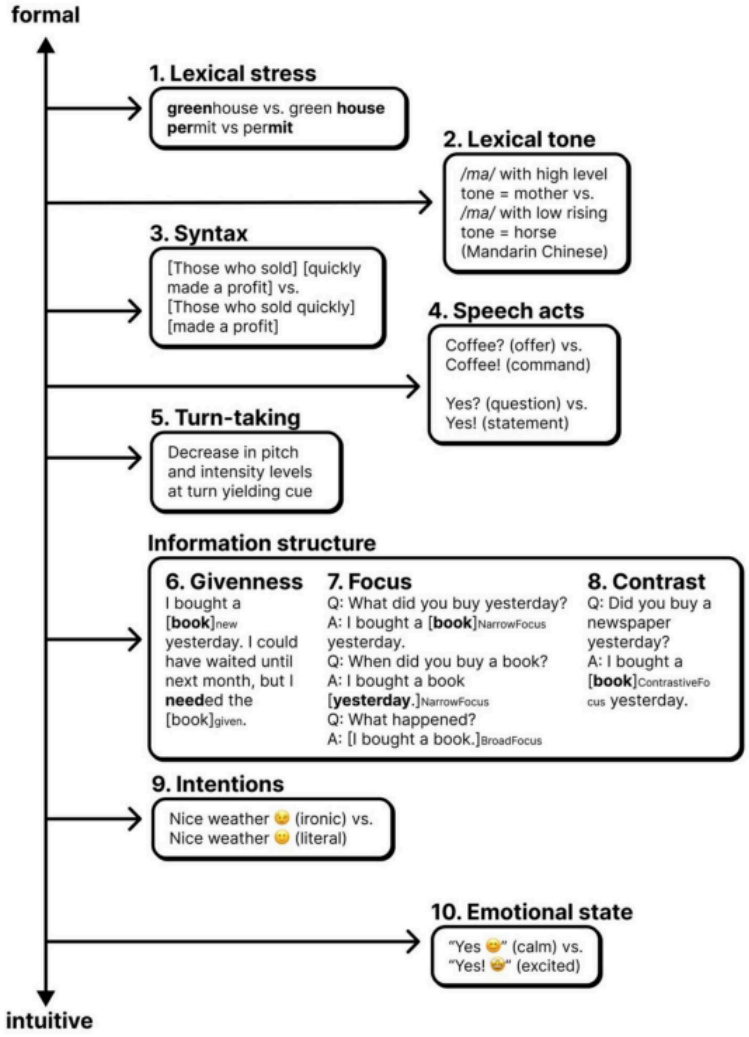

Figure 2: "Functions of prosody ordered according to their degree of formality." (Grice et al. 2023)

For instance, Grossman et al. (2010) observed that autistic children exhibit proficiency in perceiving emotions conveyed through sentence structure and demonstrate an understanding of lexical stress patterns. Grossman et al. point out that people with autism produced prosody in a different way than the control group. Although the difference was slight, it was still statistically

significant. The ASD group produced lexical stress, on both first and last syllable stress, on par with the control group. Still, they produced their stressed syllables longer than the control group, even without a difference in pitch or intensity allocation between the two syllables. Although their sample size was quite small, they feel that the wide age range led to part of the inconsistent findings and point out that the control group's data is largely inconsistent. They do, however, call for greater research on how people with ASD produce prosody (Grossman et al. 2010).

In addition, Kruger et al. (2018) found that both autistic and neurotypical individuals similarly utilize pitch with distinctions primarily emerging in stress placement within given information and the selection of pitch accent types for nuclear syllables. They have a hypothesis on why the individuals with ASD use more abnormal tones compared to the control group. Specifically, "The extensive use of H* [high tones] in the ASD group … the most striking aspect of their prosody … may in fact be a compensation strategy: Using a prosodic pattern that makes the referent neither too prominent nor too attenuated could be seen as a hedging, non-committal way of communicating" (Krüger et al. 2018). They suggest that the nuclear pitch accent in the ASD groups may emulate hedging since that is where we normally see high tones in this case (Krüger et al. 2018).

Research delving into prosodic alignment (integrating intonation, stress, and rhythm with words, phrases, and sentences) during conversational interactions among individuals with autism has yielded nuanced results. While autistic participants may show some level of prosodic entrainment, albeit to a lesser extent compared to control groups, the degree of this entrainment appears to vary based on the structure of the experimental setting (Kruyt & Beňuš 2021). This suggests that the context and structure of communicative tasks may influence the extent to which autistic individuals engage in prosodic alignment. However, the field continues to debate and

question the capabilities and limitations of individuals with autism in relation to prosody, even within these studies. Figure 3 presents all studies conducted on the prosody of autistic speech and the varying results found throughout linguistic research (Grice et al. 2023).

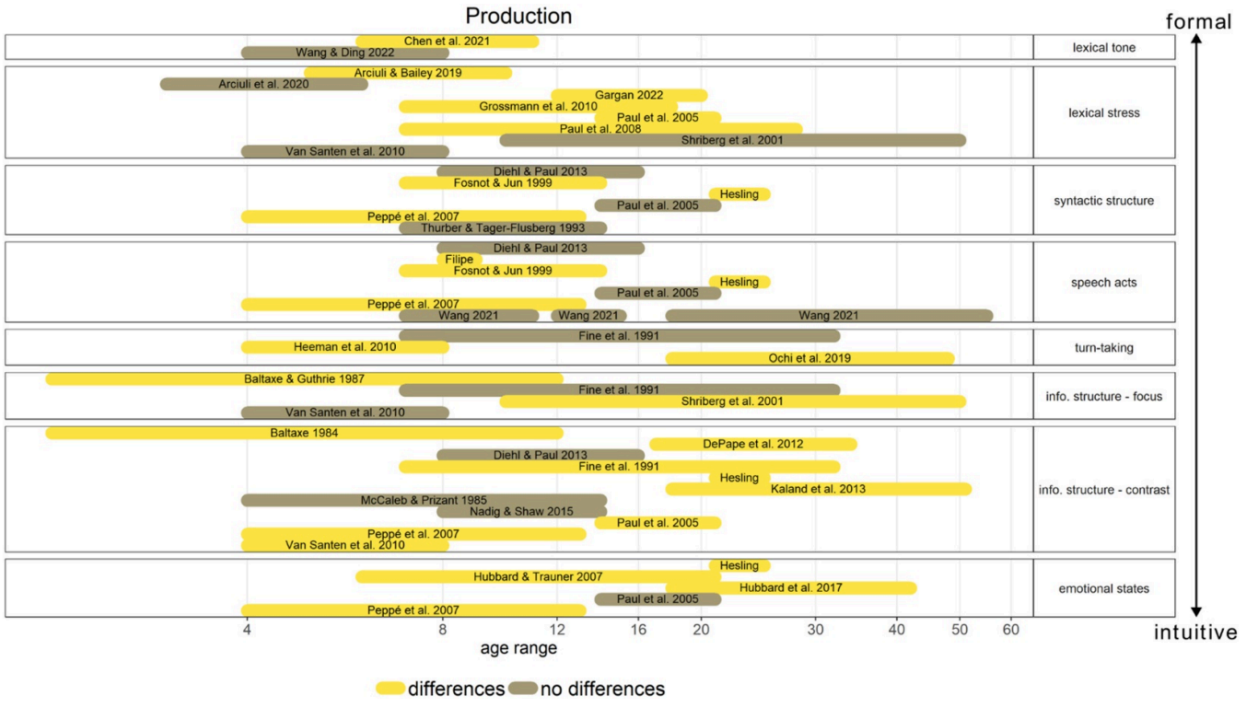

Figure 3: “Compilation of studies on production according to prosodic function and whether differences were found between ASD and control groups (yellow) or not (grey)” (Grice et al. 2023).

For example, in the category of lexical tone, Wang and Ding (2022) did not find a difference in ASD speech and neurotypical speech in disyllabic words or pseudo-words in Mandarin. They state that the ASD individuals can accurately mimic the tonal differences, but the participants with ASD showed acoustic differences such as narrower pitch range and smaller pitch variation (Wang & Ding 2022). The other study shown in Figure 3 displays a difference in lexical tone. Chen et al. (2021) found that when controlling for intensity and duration within the speech, which many other researchers neglected to consider, they found lexical tone differences

in ASD speech. Specifically, they found that there was an increased pitch difference in autistic speech that was masked by its intensity and duration (Chen et al. 2021).

This figure shows the varying results of ASD speech research and other related topics of focus, along with the differences found in varying age groups. Wang and Ding (2022) did not find a difference in lexical tone. However, they were also looking at a younger age group when compared to Chen et al. (2021). These differences are important to take into account, as some of the differences in speech could be influenced by the age of the participants.

The inclusion of emotional states within the category of production differences in ASD speech, as depicted in Figure 3, reflects a broader trend in theory of mind (ToM) research. ToM is "the cognitive ability to predict and explain human behavior in terms of mental states such as intention, desire, and belief" (Hale & Tager-Flusberg 2005). Studies such as those by Hale and Tager-Flusberg (2005) exemplify this trend, wherein a more intuitive approach is prioritized to look into the complexities of ToM. Some findings suggest that deficits in ToM significantly impact discourse development in autistic children, leading to difficulties in understanding and generating narratives that consider the listener's perspective (Hale & Tager-Flusberg 2005).

Despite being frequently used, ToM has come under fire in the autistic community for failing to adequately describe the range of experiences and cognitive functions that people on the autism spectrum encounter. Although ToM deficiencies are frequently mentioned as a factor in autistic individuals' discourse difficulties, this explanation falls short of explaining the complex nature of communication issues that the autism community has to deal with. The intricate interactions between neurocognitive elements and social interaction dynamics are oversimplified when these difficulties are only explained by ToM, which may cause misunderstandings and stigmatization. Therefore, even if ToM research unquestionably provides insightful information

about social cognition, its application in autism research must be approached cautiously, acknowledging the need for inclusive, nuanced frameworks that consider the variety of autistic experiences and talents.

Moving away from ToM research, linguists have also explored syntax and semantics within autistic speech. Similar to investigations in prosody, studies have been conducted to understand the linguistic patterns observed in ASD. Schroeder et al. (2023) identified notable features in the narratives of people with autism, which included reduced narrative coherence, unconventional utilization of pronouns and verb forms, and decreased narrative complexity. These findings show the significance of examining syntax and semantics in ASD, contributing to a more comprehensive understanding of communication challenges experienced by individuals on the autism spectrum (Schroeder et al. 2023). While syntax and semantics may not be a category that comes to mind when thinking about an accent with a more phonetic definition, it is important to note that the listeners may perceive these differences as accents like the sociolinguistic definition rather than focusing on phonetic differences.

Finally, the last aspect of autistic speech to be mentioned in this paper that has garnered attention from linguists is the phenomenon of accent adoption among individuals on the autism spectrum. Rambathla and Rao (2013) focused on three autistic British children who showed symptoms of Foreign Accent Syndrome (FAS) by speaking with an American accent. However, the study ultimately suggests that these cases may involve underlying brain injuries, typically associated with FAS, that are obscured by the presentation of ASD. Remarkably, this remains one of the few academic research articles exploring the intersection of FAS and autistic speech under this name (Rambathla & Rao 2013).

However, Hall and Parish (2024) focus on the idea of accent adoption in agentive terms as a form of masking for autistic individuals. They define masking as a set of diverse practices that enable speakers to 'pass' as neurotypical or lessen the stigmatized traits associated with autism (Hall & Parish 2024). They interviewed people with ASD about their experience of accent adoption, both with foreign and non-local domestic accents. Some participants stated that adopting accents was a way to help them 'explain away' their autistic traits, accounting for interactional behaviors perceived as "strange" by neurotypical speakers (Hall & Parish 2024). Hall and Parish's research questions the idea that autistic speech behaviors are purely cognitive, as often assumed in psychological studies, instead showing that the adoption of accents may be agentive and socially strategic. This perception appears to be shared by many autistic people online who have advanced the idea of an "autistic accent," which is the focus of this study.

All of these linguistic features of autistic speech have been found to be true in a wide variety of speakers in age, background, and other demographic information. This suggests that many of these features are shared by those on the ASD spectrum. This doesn't mean, however, that all autistic speakers necessarily share all of these phonetic features or that all autistic speakers sound the same. Similar speech research, like early research on the alleged "gay accent," implemented similar phonetic and non-phonetic tactics. For instance, Gaudio (1994) critiqued his own study, where he had only openly gay speakers, as they are more likely to partake in the sociological phenomenon of 'gay speech' that is outside of sexual orientation itself. Yet the current study, like Gaudio's 1994 study, is a starting place for examining perceptions of speech and accent related to identities. Starting with openly gay or openly autistic speakers allows for research to expand on the topic, as research on gay speech has now done.

1.3 Internet Discourse Surrounding the Idea of an 'Autistic Accent'

Much beyond the scope of available academic discourse, discussions surrounding an 'autistic accent' have grown rapidly online, with individuals sharing personal experiences and insights into this phenomenon. For instance, Morgan Foley, a TikTok user, describes her own 'autistic accent' as a tendency to mirror and mimic the speech patterns of those around her, particularly when in unfamiliar environments or on vacation (@morgaanfoley 2023). Similarly, Angel, a person of color TikTok user, recounts instances where she has been questioned about her speech "sounding white", blaming these inconsistencies on her masking behaviors and the pressure to assimilate to societal norms (@angelfromthebloc 2024). Bee, yet another TikToker, suggests that the acquisition of different accents and slang by autistic individuals stems from a natural inclination to mimic the linguistic cues of their social environment, even if it results in deviations from their native accent (@goddessofbees 2023). Courn, an influencer on both TikTok and Instagram, highlights the tendency for people with autism to imitate voices encountered in their daily lives or media consumption, viewing it as a means to better integrate into social settings and communities (@candy.courn 2023).

These accounts are part of a larger online discussion referring to the 'autistic accent.' The word "accent" is viewed as an ideological term in sociolinguistic research. Those who are perceived as speaking differently from the standard are often characterized as "speaking with an accent," although everyone speaks with an accent, of course, including those who speak the standard (Lippi-Green 2011). A more phonetic definition of accent and dialect is "accent concern[s] solely phonetic and phonological variation, whereas dialect differences involve more than this: they also include differences in vocabulary and syntax" (Carr 2012). However, a sociolinguistic definition of accent that takes language ideology into consideration focuses on the

way certain speech patterns are perceived as coming from ‘someplace else’, whether “another state, country, or social group” (Lippi-Green 2011) . The online discourse around the ‘autistic accent’ seems to use more of the sociolinguistic definition as it focuses more on sounding ‘other.’ This is highlighted in the Hall and Parish (2024) article with firsthand accounts from autistic speakers discussing how they adopted accents from ‘elsewhere’. One example was a participant who stated that although they were from Alabama, the people around them identified their accent as being more British-sounding, which caused the participant to also label themselves as such, as it was an easier response than explaining their speech as ‘not normal’ (Hall & Parish 2024).

In addition to the idea that persons with ASD adopt different accents to express themselves, each of these influencers discussed intonation differences, similar to findings in other academic studies (Grossman et al. 2010; Krüger et al. 2018; Kruyt & Beňuš 2021; Hall & Parish 2024). Morgan, Angel, and Bee all explicitly state that they have heard criticism their entire lives about how “monotone” or “inconsistent” their intonation is. A separate video by Courn describes “a few distinct vocal traits: speaking monotone or without inflection, talking overly fast, over or under pronunciation of words” as some of the characteristics of an ‘autistic accent’ (@candy.courn 2023).

The investigation of intonation and accents among the autistic population illuminates the complex nature of communication variations faced by people on the spectrum. Influencers such as Morgan, Angel, and Bee have been transparent about the criticism they receive for their intonation, bringing attention to the intersection between their autistic identities and how society perceives speech patterns. These firsthand accounts align with research findings from academic journals as they touch upon the pitch and prosody differences along with accent adoptions that

have been researched in autistic speech. The intersection of personal experiences shared by autistic influencers paired with empirical findings from linguistic research shows the importance of understanding prosody in autism research. The online discourse inspired the current study, which is designed to find whether or not these phonetic features are perceptible by listeners.

1.4 Current Study

Using the linguistic features found in autistic speech and the online discourse surrounding the idea of an 'autistic accent,' this study is a first attempt to answer the research question: Is the 'autistic accent' perceivable to the average listener? This study aims to only focus on phonetic influences of autistic speech by keeping the audio tokens short and to a single full utterance as to avoid other influences from syntax or semantics. This is a small portion of what I believe adds to the autistic accent, as in the previous research, there have been differences between autistic and neurotypical individuals in features like pitch, speech rhythm, and prosody differences. Further research can use these other studies to add to the budding research on the "autistic accent". Along with this ultimate research question, I hypothesize that listeners' age will affect their responses' accuracy and more specifically, younger participants will be better at identifying if a person is autistic. Another question I aim to address is which characteristics of speakers' speech or demographic information affect the participant responses. The last question I aim to investigate is which demographic information of the participants affects their own responses.

CHAPTER II

2. METHODS

This online survey uses audio clips from influencers online. These clips were taken from influencers on Instagram with public accounts and their public videos. To find videos for the 14 autistic speakers, key terms were used, such as ‘Autism’, ‘Autistic Woman’, and ‘Autistic Man’. I sorted through videos to find content creators who state they are autistic either in a public video or in their Instagram bio. Then, I searched through these accounts to find videos where they are talking about everyday topics (hobbies, interests, entertainment, etc.).

Once the autistic videos were obtained, I searched for accounts from influencers who discussed similar topics but did not state that they were autistic. I also found 7 male and 7 female speakers to match the 14 autistic speakers. These are to be used as a neurotypical control for the potential variation of autistic speech. I found these videos by using key terms from the autistic videos. For example, there is a video of an autistic individual talking about camping in their new RV. I used key terms like ‘camping’ and ‘RV’ to find an influencer who has similar talking points but does not mention being autistic anywhere on their account.

After collecting the 28 videos (14 autistic influencers and 14 presumed neurotypical influencers), I took these videos and created smaller audio clips. I chose complete utterances from the autistic influencers for which relatively similar utterances from the neurotypical influencers could be found. I found two sentences within each video (i.e., two per influencer) for a total of 56 audio tokens, 28 autistic audio tokens, and 28 neurotypical audio tokens.

An online survey was made in the University of Colorado Boulder Qualtrics. The audio clips were partially randomized to ensure that the matched clips were not following one another. Each participant only heard 28 clips, one randomly from each influencer. All 56 clips were heard

throughout the total participants. All the randomizers on Qualtrics were set to ensure that all the clips were shown equally across all experiment repetitions. The participants were asked to listen to 28 audio clips and rate them as ‘autistic’ or ‘not autistic’, along with how sure they were on a scale of ‘Unsure’, ‘Somewhat Unsure’, ‘Somewhat Sure’, and ‘Sure’. I converted the participant’s certainty answers into numeric scores. The four options were given a score of one through four. I averaged these for both the participants and the speakers they rated. A four-point scale was specifically chosen to avoid participants choosing a middle option for every clip, forcing them to at least choose if they were ‘Somewhat Unsure’ or ‘Somewhat Sure’.

After the 28 questions, they were asked eight demographic questions about themselves and their experience with autistic individuals. A list of these questions is included in Appendix A. After the demographic questions, they were asked to think of an autistic or non-autistic speaker and list the linguistic features they believed they were listening for. A sample of this question can be found in Appendix B. The survey was distributed on my personal Facebook, Instagram, and Reddit pages such as r/samplesize, r/takemysurvey, and r/surveyexchange. On Facebook, along with two of the subreddits, the link to the survey was posted with a short paragraph about the survey. The Instagram post had a picture with key terms and the survey’s name, while the post’s description had the same paragraph about the survey.

After extracting and organizing the data from Qualtrics, I calculated both percent correct accuracy and d prime (d’) in Excel for each demographic question I could collect. Calculation of d’ considers the hits, which are instances of responding ‘autistic’ when the speaker is autistic, and false alarms, which are instances of responding ‘autistic’ when the speaker is not autistic. Essentially, it allows for analyzing how well participants respond or pick up signals correctly while also considering their bias.

I excluded the participants who did not complete the survey, which, as per the consent form, meant they dropped out of my study. After these exclusions, only one participant who completed the survey was excluded from the results. This participant was excluded because they only answered ‘not autistic’ throughout the survey. The participant also did not spend a large amount of time in the survey, leading me to believe that they did not take the time needed to answer the 28 audio questions with precision. The final count of participants was 156 respondents.

CHAPTER III

3. RESULTS

This section analyzes the accuracy, both in terms of the percentage of responses (‘autistic’ and ‘not autistic’) they got correct and d’ of participants’ responses of ‘autistic’ or ‘not autistic’ to the sound clips they heard.

3.1 Sharp Ears or Just Lucky? Accuracy, Certainty, and d’ in Responses

In this online survey of 156 participants, they heard 28 short audio samples of speech from 28 speakers, half of whom were autistic and half were not. Participants had to listen to each token and give a forced-choice response indicating whether they thought the speaker was autistic or not, and then a rating between ‘unsure’ and ‘sure’ of how certain they were of their response.

Starting with the overall statistics, regardless of correctness, there were more responses for the speakers being ‘not autistic’ than the number of responses for the speakers being ‘autistic’. Specifically, people responded ‘not autistic’ 2,539 (58.1%) out of the 4,369 responses in total. Overall, 58.8% of responses were correct: 51% for autistic speakers and 67% for not

autistic speakers. Given the higher rate of ‘not autistic’ responses overall, the higher rate of correct responses for not autistic speakers is not surprising as it does not consider the participants’ bias towards that answer.

Accuracy scores ranged from 43% correct (produced by 2 participants) to 75% correct (produced by 3 participants). A score of 14 corresponds to 50% accuracy, and most participants (130 out of 156) scored more than 14. This is shown below in Table 1. The most frequently occurring score among participants was 61% correct (29 participants).

Table 1: A list of the scores received by the number of participants.

Correct Responses (Out of 28)	Count of Participants
12 (43%)	2
13 (46%)	8
14 (50%)	16
15 (54%)	25
16 (57%)	27
17 (61%)	29
18 (64%)	25
19 (68%)	17
20 (71%)	4
21 (75%)	3

As noted above, participants responded ‘not autistic’ more often than ‘autistic’. Thus, producing a correct response for a non-autistic speaker’s speech would be more likely than getting a correct response for an autistic speaker. To take this difference into account, I calculated d’. As stated above, d’ considers the hits – responding autistic when the speaker is autistic – and

false alarms — responding ‘autistic’ when the speaker is not autistic. A d’ of zero means that the participant is responding at chance between the labels of ‘autistic’ and ‘not autistic’. A positive d’ score indicates greater sensitivity to autistic speakers, meaning the participant is more likely to correctly identify an autistic speaker as autistic. A negative d’ score suggests the opposite — the participant is more likely to misidentify an autistic speaker as not autistic.

The survey results show that the participants are slightly better than chance at identifying autistic speakers as autistic (average d’: 0.4964). While this is above zero (chance), it is not largely above chance, or zero. In principle, the largest d’ that a participant can get is 4.65, which means they had 99% hits (responded autistic when the speaker was autistic) and 1% false alarms (responded ‘autistic’ when the speaker was not autistic). With d’ equaling 0.4964, if one divides it by 4.65 the largest possible score, it would equal 0.1068. This value is only 10.68% of the possible range from chance (0) to the maximum sensitivity (4.65). This indicates that a d’ of 0.4964 is a relatively poor sensitivity (Loschky, 2020). According to guidelines for interpretation from the American Psychological Association (2018), a d’ score of 3 is near-perfect performance, and a score of 1 is considered fairly good.

When looking at the breakdown by speaker gender, people are more likely to correctly use the autistic label when a male speaker is autistic (average d’: 0.8458). While participants are still more likely than chance to use the autistic label when a female speaker is autistic (average d’: 0.3041), d’ accuracy is still significantly lower than for the male speaker responses.

3.2 Who's Listening? Performance by Participant Demographics

3.2.1 Participant Gender

The data can also be organized to show the d' scores by various participant demographics, such as the participants' gender. There were 82 women, 55 men, 17 nonbinary people, and three people who preferred not to answer that participated in the survey. The women had the largest d', meaning they were using the autistic label more accurately. This is seen in Table 2. The percent correct scores do not show much difference between the groups. The women's and men's percent correct scores are not significantly different (p=0.1748).

Table 2: The average score and d' per participant self-reported gender.

Participant Gender	Average d'	Correct Responses (Out of 28)
Woman	0.5312	16.64 (59.42%)
Man	0.4703	16.34 (58.35%)
Non-binary	0.4407	15.94 (56.92%)
Prefer not to say	0.3020	15.66 (55.92%)

3.2.2 Participant Race

Participant race was gathered by a 'check all that apply' question in an attempt not to leave any identities out. However, this led to many answers to this question being given by fewer than 10% of the participants (i.e., 15 or fewer). The groups with more than 10% of participants were 'Asian' (11% of participants: 17 participants) and 'White/Caucasian' (71% of participants: 110 participants). The other 28 participants not shown in these identities had more specific racial identities, leaving them the sole participants in their category. For the sake of practicality, only the racial identities with more than 10% of participants will be shown in this section.

The accuracy scores and d's are listed in Table 3 below. Based on this data, participants who identified themselves as 'Asian' had a larger d'. However, this difference shouldn't be over-interpreted since the group size for Asians is small compared to the largest group of 110 participants ('White/Caucasian'). With this being said, the two groups are not statistically different from each other (p= 0.2955).

Table 3: The participants' average score and average d' by reported race.

Participant's Race	Average d'	Correct Responses (Out of 28)
Asian	0.5898	16.8235 (60%)
White/Caucasian	0.4950	16.5 (58.92%)

3.2.3 Participant Country

The participants who took my survey were from 22 different countries. Two countries had more than 10% of the participants (i.e., 15 or more): the United States (92 participants) and Canada (20 participants). This made the average scores difficult to generalize over a larger population. However, looking at Canada and the United States alone showed that participants' percent correct scores did not vary based on location, as seen in Table 4. The scores for Canadians were not statistically different from the United States percent correct scores (p=0.4524).

Table 4: The average d' and score based on participant country.

Participant Country	Average d'	Correct Responses (Out of 28)
Canada	0.5389	16.7 (59.64%)
United States	0.4662	16.3152 (58%)

3.2.4 Participant Age

Examining the participants' ages led to an interesting finding: Most age groups have similar percent correct and d' scores. However, the 45-54 age group has a larger percent correct and a larger d' (average d': 0.7201), meaning that they more accurately use the autistic label for autistic speakers than other participant age groups. Thirteen participants reported being in this age group. All age groups are listed below in Table 5.

Table 5: The average d' and score based on participant age group and the count of participants in each group.

Participant Age Group	Average d'	Correct Responses (Out of 28)	Count of Participants
18-24 years old	0.5210	16.5606 (59.14%)	66
25-34 years old	0.4543	16.2291 (57.96%)	48
35-44 years old	0.3963	16 (57.14%)	23
45-54 years old	0.7201	17.5384 (62.63%)	13
55-64 years old	0.4598	16.25 (58%)	4
65+ years old	0.4692	16.3333 (58.32%)	3

3.2.5 Participant Neurodiversity Status

There were 82 participants who said that they were neurodivergent, 32 people who said that they might be neurodivergent, and 42 people who said they were not neurodivergent. As stated in the methods section, this survey was posted on Reddit, Facebook, and Instagram. The largest amount of interaction was on Reddit. There were quite a few comments on the posts I created on Reddit of people stating their scores and how they were autistic, and that is why they participated. This interaction may explain the large number of neurodiverse participants. All of these demographics by neurodiversity status have a similar d'of around 0.5, as seen in Table 6. If

we count the ‘maybes’ and the ‘nos’ as one category, they are almost the same d’ as those identified as neurodivergent.

Table 6: The average d’ scores of participants’ self-reported neurodivergence.

Participant Neurodiverse Status	Average d’
Yes, they are neurodivergent	0.4942
No, they are not neurodivergent	0.5173
Maybe they are neurodivergent	0.4739
Both the No and Maybe categories combined	0.4956

3.2.6 Participant Experience with Autistic Individuals

Another demographic question participants answered questioned how much experience they had with autistic individuals. The question allowed the participants to click all the options that applied to them. To group participants together, I gave the category options a score based on the assumed social bonds and presumed time exposure to the autistic person they have experience with. The categories of ‘family member(s)’ and ‘friend(s)’ were labeled as 3s, as their social bonds would be more relevant and presumed to have a longer time exposure. The categories of ‘co-worker(s)’, ‘student(s)’, and ‘professor(s)’ were all given a 2, as there is still a long time exposure but most likely not as strong of a social bond. The final category was comprised of ‘distant acquaintance(s)’ and ‘customer(s)’, which were given a score of 1, as these people are least likely to have a strong bond or a large amount of time spent with the participant. I added these scores together if they clicked multiple of one category. A participant with a score of two could have clicked either ‘distant acquaintance(s)’ and ‘customer(s)’ or one of the labels deemed a two, like ‘co-worker(s)’.

The group with the largest d' average and the largest percent correct are people who scored 2-3 based on the groups above. This would mean that the people with some experience but not a lot are using the autistic label when the person is autistic more often than the other groups. The group with the lowest d' and lowest number of correct responses are the participants with the greatest number of autistic contacts, with a score of 10+. This is seen in Table 7.

Table 7: A list of average d', average accuracy score, and count of participants organized by the participant's experience with autistic individuals.

Experience with Autistic Individuals Score	Average d'	Correct Responses (Out of 28)	Count of Participants
0-1	0.4821	16.1826 (57.79%)	51
2-3	0.6723	17.2045 (61.44%)	28
4-5	0.5090	16.25 (58%)	16
6-7	0.5095	16.5892 (59.24%)	34
8-9	0.4367	16.1454 (57.66%)	16
10+	0.2198	15.1 (53.92%)	12

3.2.7 Participant Certainty

The certainty scores of the participants, which is a possible range between 1 (Unsure) and 4 (Sure), reveal that the participants are not certain of their responses. The average of all 156 participants is 2.54, which is in between 'Somewhat Unsure' and 'Somewhat Sure'. This certainty average is not statistically different from the midpoint of the certainty scale of 2.5 ($p = 0.4$). This means that the participants overall are both not unsure and not sure.

Breaking down the certainty averages by demographic information yields similar results. Participant gender does not show a statistically different number than the scale midpoint of 2.5,

though the certainty score of female participants (2.63) approaches significant difference. The p values by gender are shown in Table 8.

Table 8: Certainty Scores by participant gender.

Participant Gender	Certainty Score With P Values
Female	2.63 (p=0.0761)
Male	2.45 (p=0.6307)
Non-binary/Third Gender	2.42 (p=0.5974)
Prefer not to say	2.60 (p=0.8166)

Looking at the certainty averages by age yields similar results with one small exception. Most participant age groups do not show a statistically different number than the midpoint of 2.5. The age grouping of 18-24-year-olds have an average certainty score of 2.67, which is statistically different from 2.5 (p=0.0283). This means that 18-24 year-olds are more sure of their answers, even though they only got 59.14% of the answers correct. The other age groups had a percent correct range between 57% and 58%, with the exception of the 45-54 year-olds, who received an average percent correct of 62%. While the 45-54 year-olds had a higher certainty score, theirs was not statistically significant as they had more variability within their certainty score. This would mean that the second best performing group, regarding percent correct, is the group most sure of their answers. The p values by age are shown in Table 9.

Table 9: Certainty score by participant age.

Participant Age	Certainty Score with p Values
18-24 years old	2.67 (p=0.0283)
25-34 years old	2.42 (p=0.4612)
35-44 years old	2.38 (p=0.4931)
45-54 years old	2.71 (p=0.0844)
55-64 years old	2.09 (p=0.4344)
65+ years old	2.64 (p=0.7837)

Participant race has similar results as the rest of the data. Participants who self-identified as Asian have a certainty average of 2.59 (not different from midpoint, p=0.6380). Participants who identified as White/Caucasian have a certainty average of 2.54 (also not different from the midpoint, p=0.4935). This means that race most likely does not change the participants' certainty.

The countries of the participants showed some difference in certainty. Participants from Canada had a certainty score of 2.45 (p=0.7808), and participants from the US had a score of 2.64 (p=0.0301). Much like the 18-24 year-old participants, US participants are slightly more sure of themselves even though they responded 58% of the answers correctly. Canadians had a percent correct of 59.64%, which means that they were less sure of their answers but better at guessing overall.

Lastly, participants' self-reported neurodiversity does not seem to change the participant certainty scores. Participants who stated that they were neurodivergent had a certainty score of 2.51 (p=0.8093). Participants who were not neurodivergent had a certainty score of 2.54 (p=0.7473), and participants who were not sure had a certainty score of 2.62 (p=0.2878). This

means that the neurodiversity status of the participants does not have a significant effect on their certainty.

3.3 Who's Talking? Speaker Effects on Identification

3.3.1 Percent Correct by Speaker

As stated above, d' considers the relative rate of hits (responding autistic when the speaker is autistic) and false alarms (responding 'autistic' when the speaker is not autistic). When looking at speaker performance, d' can not be calculated since a speaker cannot be both autistic and not autistic. However, we can still examine the percentage of correct responses. For the autistic speakers, only three out of the 14 speakers were rated 'autistic' by over 66% of the participants (103 participants or more). All three of these speakers were men. There were 5 autistic speakers rated 'not autistic' by over 66% of the participants, meaning that less than 53 participants responded correctly. Four of these speakers were women, and 1 of these speakers was a man.

For non-autistic speakers, eight out of the 14 speakers were rated as 'not autistic' by over 66% of the participants. Out of these eight speakers, four were men, and four were women. Only two non-autistic speakers were rated 'autistic' by over 66% of the participants. One of the speakers was a woman, and the other was a man. The number of correct responses for autistic speakers stepped down gradually in percent correct across speakers, going from 80% to 65% and 60% to 49%. However the non-autistic speakers had a much steeper decline in percent correct in the lower numbers, going from 53% to 28% correct. The non-autistic speakers only had 2 speakers below 33%, while there were five autistic speakers below 33%. This can be seen in Table 10.

Table 10: A list of the 28 speakers and the number of correct responses by participants.

Autistic Speaker	Correct Responses (Out of 156 Participants)	Not Autistic Speakers	Correct Responses (Out of 156 Participants)
AM6	131 (83.97%)	NAF7	144 (92.3%)
AM1	126 (80.76%)	NAF2	141 (90.38%)
AM4	125 (80.12%)	NAM2	130 (83.33%)
AF7	102 (65.53%)	NAM4	130 (83.33%)
AM5	101 (64.74%)	NAF3	127 (81.41%)
AF3	94 (60.25%)	NAF5	121 (77.56%)
AM2	77 (49.35 %)	NAM5	118 (75.64%)
AM7	77 (49.35%)	NAM7	109 (69.87%)
AF4	74 (47.43%)	NAF1	94 (60.25%)
AF2	49 (31.41%)	NAF4	92 (58.97%)
AM3	49 (31.41%)	NAM1	88 (56.41%)
AF5	46 (29.48%)	NAM3	84 (53.84%)
AF1	35 (22.43%)	NAF6	44 (28.20%)
AF6	21 (13.46%)	NAM6	40 (25.64%)

There were a total of 13 speakers who were labeled as ‘not autistic’ by more than 66% of the participants (103 participants or more). Eight of those speakers were not autistic, and five speakers were autistic. Also, eight of these 13 speakers were women, and five were men. To specify, out of these 13 speakers, only one man was mislabeled as ‘not autistic’ when he was autistic (68.58% of responses), while four women were mislabeled as ‘not autistic’ when they were autistic (68.58% of responses or above). The speaker with the most ‘not autistic’ labels,

NAF7, received 144 ‘not autistic’ responses (92.3% of responses) and is both a woman and not autistic.

There were five speakers that were labeled ‘autistic’ by 66% or more of the participants. Four of these speakers were men, and one was a woman. Three of these speakers were indeed autistic, but two of these speakers were mislabeled, meaning they were not autistic. To be more specific, only one man was mislabeled as ‘autistic’ (74.35% of responses), and one woman was labeled ‘autistic’ when she was not (71.79% of responses). The speaker labeled ‘autistic’ the most, AM6, received 131 autistic responses (83.97% of responses) and is both a man and autistic.

3.3.2 Certainty by Speaker

Much like the by-participant certainty scores, the scores given by-speaker do not yield a statistical difference from the midpoint of the certainty scale of 2.5. This is true regardless of whether a speaker was autistic or not autistic. Speakers who were autistic received a certainty score of 2.52 (not different from midpoint, $p=0.4642$). Speakers who were not autistic received a score of 2.56 ($p=0.1855$). This means the participants were similarly unsure of their responses when broken down by speaker neurodiversity.

Speaker gender also yielded no statistical difference from the midpoint of 2.5. Women speakers received a certainty score of 2.57 ($p=0.1052$), and men speakers received a 2.51 ($p=0.6783$). However, since neither score is different from midpoint, this means that the participants were equally as unsure of their responses despite being better at correctly responding to the autism status of men compared to women.

Breaking it down further, the average certainty score for autistic men was 2.53 (p= 0.6391) and not autistic men was 2.49 (p= 0.9090). The average certainty score for autistic women was 2.52 (p=0.4845) and not autistic women was 2.62 (p=0.1549). This is an interesting finding as well, because even though the participants were better at guessing autistic men overall, they were not more sure of their answers in a statistically significant way. In fact, none of the certainty scores were statistically significant results from the certainty scale midpoint of 2.5.

CHAPTER IV

4. DISCUSSION

As stated above, this study was a first attempt to explore whether the 'autistic accent' is perceivable to the average listener. In addition, I hypothesized that a listener's age influenced their accuracy, with younger participants being better at identifying autistic speakers. Another key question was which aspects of a speaker's speech or demographic background influence participants' judgments. Finally, I examined how participants' own demographic characteristics may shape their responses.

4.1 Familiarity or Stereotypes? Generational Differences in Speaker Perception

One of the hypotheses of this study is that listeners' age will affect their responses accuracy, specifically for younger participants. This prediction is based on the increase in autistic diagnoses. During the time period of 2001 to 2016, ASD diagnoses increased "from 0.189 (95% confidence interval (CI) = 0.170–0.210) per 1000 people in 2001 to 5.068 (95% CI = 4.979–5.159) per 1000 people in 2016" (Underwood et al. 2022). Another study found that children born in 1992 had a diagnosis rate of 1 in 150 children, while children born in 2012 had a rate of 1 in 36 (Centers for Disease Control and Prevention, 2024). The hypothesis that younger

participants would be better at recognizing the speech of autistic individuals was made because of the greater likelihood of these participants having peers with autism diagnoses and being in the age group where diagnosis is increasingly more common. However, the above results show that 18-44 year-olds were not the highest-performing group (average percent correct of 58.08%) and were remarkably similar to the 55+ group (average percent correct of 58.16%).

The prominence of autism activism and autistic creators on YouTube, Instagram, and TikTok may explain the performance of the younger participants in that these influencers created a greater understanding of the nuance and diversity of autism. One of the first activism groups that did not discourage people with ASD and instead elevated their voices and experiences was the Autism Self-Advocacy Network (ASAN), which was created in 2006 by a group of autistic individuals (Hookway, 2023). International Autism Acceptance Day in 2007 was founded by Paula Durbin Westby who wanted to switch the activism movement towards acceptance rather than awareness (Hookway, 2023).

Along with these rising activism groups, more online communities were created for people with ASD to help support each other and make connections or friendships (Hookway, 2023). These communities have been made not only through websites, but through influencer communities through TikTok and Instagram as well. These autistic influencers are targeting their communities while helping to spread awareness to others by sharing their experiences with their diagnoses. Since these platforms are used by a large majority of the 18-34 year-old age group, they have more exposure to ASD and the idea of autism as a spectrum. The increase in awareness of the diagnosis and the autism spectrum, along with the increased number of diagnoses among the younger age group, may be the reason for their lower score and d'. These groups of people have more awareness of autism as a diagnosis and an understanding that autism

comes in many different forms. With this understanding, they may not have a prototypical autistic speaker or a stereotype of what autistic speakers sound like compared to other age groups who have this stereotype or prototypical speaker.

The 55+ age group performed similarly to the younger age groups. The lack of exposure to autistic research, awareness and understanding of autistic individuals in their formative years (young adult and younger) could account for this age group receiving a low percent correct and a low d'. The first person to name and explain the autism diagnosis was Eugen Bleuler in 1910 but there was little understanding of the diagnosis (Hookway, 2023). One of the first studies looking into autism talked about behavioral patterns as compared in neurotypical children and schizophrenic children (Kanner, 1943). Kanner observed different autistic children to document their behaviors and did not talk about the prevalence of the diagnosis (Kanner, 1943). In 1966, a study theorized that 4.5 per 10,000 children were autistic in Middlesex County (Lotter, 1966). These rates are significantly lower than the rate of 1 in 36 children in 2012. This age group would have grown up with this type of research and more underdiagnosed people, as people 55+ were born in 1970 or earlier. This would lead to a lack of understanding of autism as a spectrum due to the under-researched topic during their formative years (young adult and younger). This also leads to a lack of familiarity with people who have been diagnosed as autistic in this age group. Both of these factors could be contributing to the lower scores.

In contrast with these groups, the best age in terms of percent correct and d' were the 45-54 year-olds. This group would be familiar with autism as a spectrum, as the definition of autism in the DSM-IV defined autism as a spectrum in 1994 (Zeldovich, 2024). Additionally, with the rise of diagnoses, this age group might have diagnosed children or peers of their children, leading them to learn more about autism. The combination of learning about ASD as a

whole, as within the younger age group, and having the prototypical autistic speaker that they were taught about as children from the older age group, would lead to a higher score. It would be beneficial to have more studies that look into participants from different age groups, their experience with autism, and their ability to perceive an 'autistic accent.' Due to the limits of this study, there is no existing data in this research to support the hypothesis that people in the 45-54 year old age group have less experience with autistic individuals across the spectrum, and that they learned about ASD for the children in their lives.

4.2 Outliers or Experts? The Participants Who Broke the Mold

Out of the 156 participants, only three earned the top score of 21 (75% correct) in identifying clips from autistic and non-autistic speakers. These participants were in the top 2% of the participants who took the survey. First, let's examine the three participants' d' and demographic information to find factors that might contribute to especially good performance on the study's tasks.

Participant 43 is a 25-34 year-old White/Caucasian woman from the United States and is a native English speaker. She also reported that she is neurodivergent in some way and had a score of 11 in regard to her experience with autistic individuals. She stated that she had been exposed to autism through family member(s), friend(s), distant acquaintance(s), co-worker(s), and student(s). This participant had a d' of 1.3576, which is 29.19% of the possible range from chance (0) to the maximum sensitivity (4.65) (Loschky, 2020). This d' of 1.3576 indicates a moderate sensitivity in identification. When breaking down her d' by speaker gender, both scores are relatively high: d' of 1.2476 for women speakers and d' of 1.6335 for men speakers. Again,

this is a moderately high sensitivity, especially compared to the average participant d' score of 0.4964.

Participant 44 is a 45-54 year-old White/Caucasian woman from Canada and is a native English speaker. She also reported that she may be neurodivergent in some way and received a score of 8 when looking at her experience with autistic people. She stated that she had been exposed to autism through friend(s), distant acquaintance(s), co-worker(s), and student(s). This participant had a d' of 1.337, which is 28.75% of the possible range from chance (0) to the maximum sensitivity (4.65) (Loschky, 2020). This indicates that a d' of 1.337 is a moderate sensitivity. When breaking down her d' by speaker gender, both scores are relatively high: d' of 1.2476 for women speakers and d' of 1.6335 for men speakers. Much like Participant 43, this is a moderately high sensitivity compared to the average participant d' score.

Finally, Participant 121 is a 25-34 year-old Asian woman from Canada. She does report that English is an additional language for her but states that she speaks English fluently. She reported that she might be neurodivergent and has no experience with autism, according to my demographic questions. This participant had a d' of 1.3576 as well, which means it is also 29.19% of the possible range from chance (0) to the maximum sensitivity (4.65). Her d' for female speakers was worse than the other two participants – d' of 0.746, which is 16.04% of the possible range from chance to maximum sensitivity – but her d' for men speakers was a lot higher than the other participants – d' of 2.8923 which is 62.2% of the possible range from chance to the maximum sensitivity.

Participants 43 and 44 seem equally good at identifying both male and female autistic speakers. However, Participant 121 is specifically very good at identifying male speakers. With an experience score of zero, this is an interesting result that does not follow the rest of the data.

One factor that was not included in the survey design was that the questions about autistic experience did not include categories for entertainment such as TV characters, movie characters, influencers, etc. This could be the reason why they have a good ear; if they are consuming media of autistic men online or in shows and movies, this survey was almost inadvertently tailored to them.

These participants do not have a lot of demographic information that is common between them. However, they are all women and follow the trend of women having a higher d' overall than male participants. This may be because there were fewer men participating in the survey, although it is unlikely that is the only reason. This is something that should be researched further to see if women are more likely to perceive certain versions of autistic speech versus men.

4.3 Did They Fit the Prototype? Speakers Who Matched (or Broke) Expectations

We can also consider differences across individual speakers to see whether there might be specific factors that would contribute to their being particularly well identified or poorly identified as either 'autistic' or 'not autistic'. The autistic speaker with the most autistic identifications (131 responses, or 83.97% correct) also had the second-largest certainty score out of all of the speakers (2.833). The certainty score is still not a large difference from the midpoint of 2.5; it is interesting that even the person with the most correct autistic responses and the second highest certain score still does not have a very high certainty score. This is similar to the non-autistic speaker with the most 'not autistic' responses with 144 responses or 92.3% correct but a certainty score of 2.78.

Unlike the participants, there is not much demographic information on the speakers. The demographic information that is stated, like gender, is presumed. This is also true for non-autistic

speakers. If the influencer has not stated that they are autistic, they are presumed to be neurotypical. With this being said, there do seem to be some gender effects in autistic perception. There were eight out of the 14 total women who were labeled ‘not autistic’ by over 66% of the participants (103 participants or more). There was only one woman labeled ‘autistic’ by over 66% of the participants. However, there were five out of the total 14 men labeled ‘not autistic’, and four men labeled ‘autistic’ by 66% of the participants. This means that men were about equal between the top ‘autistic’ labeled and the top ‘not autistic’ labeled. The women, on the other hand, were increasingly labeled ‘not autistic’ by a majority of the participants compared to the men. This may be attributed to the idea that autism was classified as a ‘male’ condition (UCLA Health 2023). This leads to many underdiagnosed women since autism sometimes looks different in women than in men. In this study, women are more likely to be labeled ‘not autistic’ compared to men.

Other than gender, there is a potential that race is also affecting the perception of an ‘autistic accent.’ There were only two African-American speakers included in this survey: an autistic woman and a non-autistic man. As stated in the results, men are more likely to be rated autistic than women. However, this is not the case with the male speaker. The non-autistic African-American man received 130 ‘not autistic’ responses (83.33% correct).

This may be part of a larger stereotype that African-American people cannot be autistic. Catina Burkett (2020) talks about how this stereotype has affected her in her own life, stating that she was told not to tell people about her diagnosis because they would not want to work with her. She wrote that when she did open up to “a psychiatrist and a few clinical therapists who are colleagues that I recognize I have autism traits, they instinctively rejected the idea. ‘You’re just going through something,’ they said” (Burkett 2020). She also revealed that she received her

official diagnosis at the age of 46, and when she went looking for resources to potentially help her, she did not find any research on black autistic individuals (Burkett 2020).

This stereotype might also explain the fact that the African-American autistic female speaker also has more 'not autistic' responses (92 responses, 39.74 % correct). However, there is the trend that women are more likely to be rated as 'not autistic,' which may also be playing into this speaker's score. The average 'not autistic' response for women was 102.42 responses (65.65% of participants). So this black autistic woman is labeled 'not autistic' lower than the average white woman speaker. More research needs to be conducted before a broader claim can be made about speaker race in regards to perceiving an 'autistic accent.'

4.4 Lost in Translation: The Challenge of Identifying an 'Autistic Accent'

Based on the data that was collected for this study, an 'autistic accent' is slightly perceivable at least in a phonetic sense. It has been claimed that pitch and prosody are important factors in differentiating the speech of autistic and non-autistic speakers (Grossman et al. 2010, Krüger et al. 2018, & Kruyt & Beňuš 2021); however, the data collected for this study suggests this may not be enough to yield clear perceptual distinctions. Most of the phonetic features like pitch and speech rate would be perceivable in these shorter audio tokens, but it may be worth mentioning that prosodic effects may need to have longer utterances than the ones in this study to be well-perceived.

In the post-identification survey, where participants were asked about the factors they considered, most participants talked about pitch as the reason they chose the responses they did. 120 participants (76.92% of participants) talked about pitch when referring to 'not autistic' responses, and 117 participants (75% of participants) referred to pitch for their autistic responses.

This has been studied many times (Grossman et al. 2010, Krüger et al. 2018, & Kruyt & Beňuš 2021), and it has been said that there is a difference in neurotypical speakers' pitch compared to autistic speakers. However, based on the current study, I do not believe that this is enough to claim that there is a perceptible phonetic 'autistic accent' that all people with ASD share.

While it is outside the scope of this study, there may be non-phonetic differences that contribute to identification responses as well. For example, participants noted differences in the word choice and sentence structure of autistic speakers. There were 66 participants (42.3% of participants) who talked about word choice and 64 participants (41% of participants) who talked about sentence structure when asked about their 'not autistic' responses. While not necessarily related to accent in terms of a more phonetic definition (Carr 2012), it is related to the sociolinguistic definition of sounding from someplace else (Lippi-Green 2011), and it may be that there is a feature in the syntax or word choice that participants thought they heard. This would be reasonable due to the study examining the syntactic difference in autistic speech (Schroeder et al. 2023). The features found in autistic speech were reduced narrative coherence, unconventional utilization of pronouns and verb forms, and decreased narrative complexity (Schroeder et al. 2023). However, this is not likely contributing to results in the current study, as the word choice, content, and sentence structures were controlled for.

A final potential factor in people identifying if someone is autistic seems to be the content of their speech and the level of detail for that content. One participant wrote, "Some people sounded like they were talking about a special interest so I rated them as autistic based on the level of detail". Another participant talked about specific topics; "I probably also based my verdicts on topic. Rocks are autism, family life is not". This may be a topic that needs further research discussing stereotypes of the content of speech, especially the idea of the level of detail.

This is found in online discourse, like the stereotype that individuals with autism have trains as a special interest, or a topic that they have hyperfixated on and know a large amount about, and the amount of detail they know about the special interest topic (Jones 2023). However, this may also be due to the amount of information they give you about their special interest and not necessarily the topic by itself. Again, this is not something that can be distinguishing autistic and non-autistic speakers in the current study. While it might affect perception in the current study, it would bias both the autistic and non-autistic speakers toward the same response (e.g., autistic), since the topics are matched across the two groups.

CHAPTER V

5. CONCLUSION

Overall, the findings in this study suggest that an 'autistic accent' is less perceivable in the phonetic sense than the online discourse leads people to believe, at least according to this study. The autistic speech examined in this study was carefully controlled for semantic and syntactic properties, allowing the focus to be on the phonetic properties in relatively short samples of speech. These samples did not exhibit a strong autistic accent, although they were identified as autistic at better than chance rates. In other words, the current study shows that, if there is an autistic accent, it is not primarily comprised of the phonetic features examined here. However, there may be other properties, like prosodic effects that are only perceptible in longer utterances. There could also be syntactic or semantic characteristics that would be more identifiable.

These tokens were also all from influencers who may be high masking or have a less perceivable accent than non-influencer autistic individuals. This is shown in the d' and percent

correct scores of the participants being slightly above chance (average d' of 0.4964 and percent correct of 61%). While the majority of the participants said that they used pitch to determine their responses, this alone does not make an accent by the phonetic definition. However, in the sociolinguistic definition, this may be enough for the adoption of the term 'autistic accent' as it is something that signals a sense of 'otherness.'

In combination with pitch, participants stated that they relied on sentence structure, word order, and speech content. This was shown in their qualitative responses when asked what they used to identify speakers' autistic status. However, this was controlled for in this study. This could suggest that rather than identifying an inherent phonetic accent, participants presumably relied on linguistic or content-based stereotypes when making their responses.

In a similar vein, these participants were receiving audio tokens out of context in both a social context and the online discourse of an 'autistic accent'. People may be relying on these contexts to discern if someone is autistic rather than the phonetic properties of their speech like this study was testing. More research could take audio tokens and give them context to see if the perception of the accent changes with this new found information.

There were some outstanding performers. The middle-aged (45-54) participants were the highest performing group, possibly due to their balance of autism awareness and life experience without the broader, more inclusive understanding of autism seen in younger age groupings. The outlier participants were moderately sensitive to the signal and followed the trend of women performing better at this task than men.

An area for more research is the perception of autistic speech in African-American speakers. Since the African-American speakers did not align with the trend that men are more likely to be labeled autistic, it suggests that racial stereotypes may play a role in assumptions

about who can or cannot be autistic. This was not within the scope of this study, but it is a place where future research can be conducted.

Ultimately, while some participants were able to identify autistic speakers at above-chance levels, most performed at or near chance, indicating that autistic speech patterns, at least from the speakers studied here, do not form a clear or universally recognizable 'accent.' This conflicts with the concept of an 'autistic accent' that has gained traction in online discourse, with autistic individuals sharing experiences of accent adoption, intonation differences, and social perceptions of their speech. These firsthand accounts align with linguistic research on prosody in autism, which identifies traits such as monotone speech, atypical pitch patterns, and accent variability. While the definition of 'accent' is debated, the sociolinguistic perspective highlights how autistic speech is often perceived as 'other'. This intersection between personal narratives and empirical research underscores the importance of studying prosodic features in autistic speech, inspiring further investigation into whether these traits are perceptible to listeners.

Further research can delve into the idea of an 'autistic accent' within the spectrum itself, specifically looking at high-masking and low-masking individuals. Since the current study focuses on presumably high-masking influencers, it is worth noting that the 'autistic accent' may be more perceivable within other representations of the autistic experience.

Further research can also explore whether linguistic features beyond phonetics—such as discourse structure, pragmatic use, or specific lexical choices—play a role in how autistic speech is perceived. The current study controlled for these aspects of speech, trying to highlight the phonetic differences between autistic and neurotypical speech. This leaves an opening for continuing research that focuses on the differences the participants highlight.

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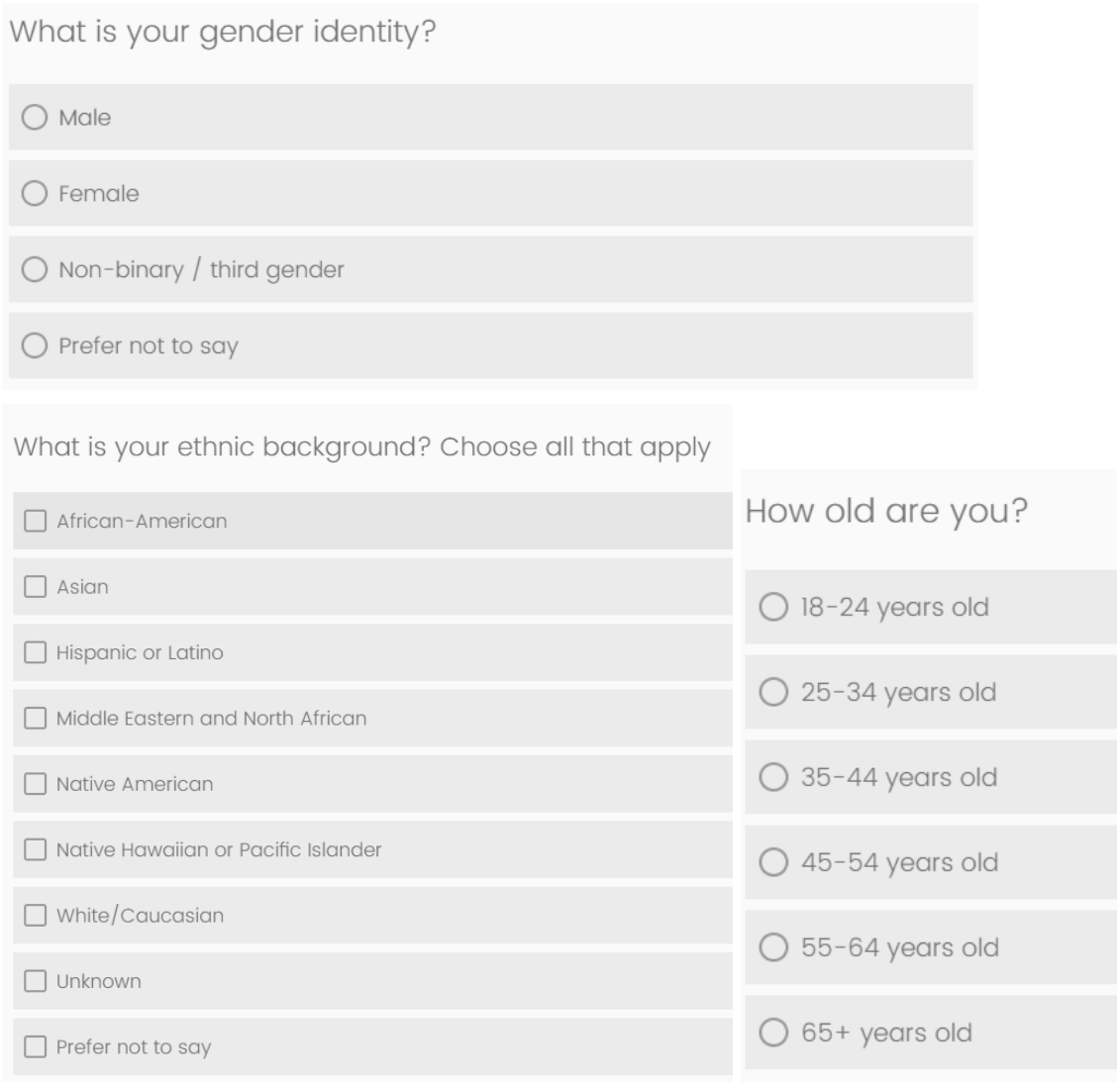
APPENDIX

Appendix A: Survey Demographic Information



What country are you from?

Do you speak English?

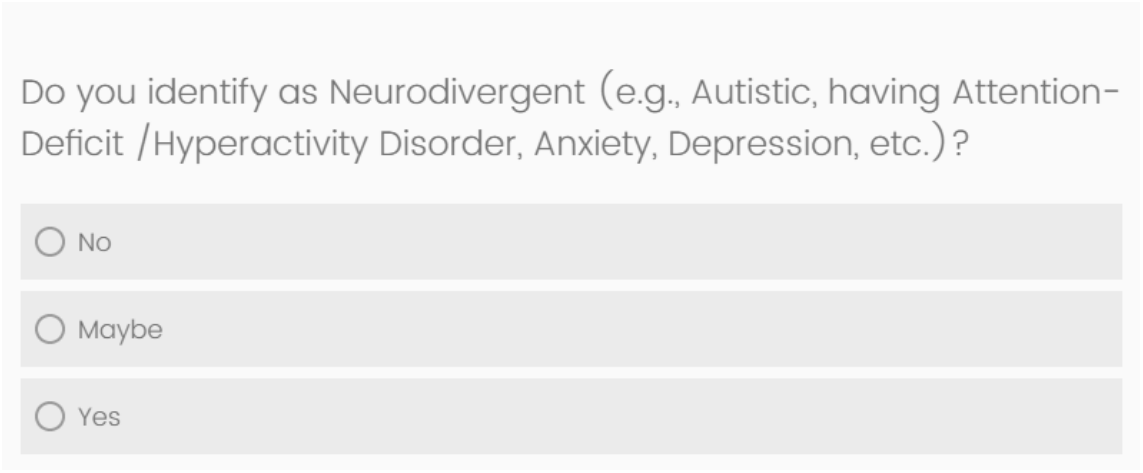
- ◯ Yes as my first language
- ◯ Yes, as additional language fluently
- ◯ Yes, as additional language proficiently
- ◯ Yes, as additional language with limited proficiency

Do you have experience with autistic individuals?

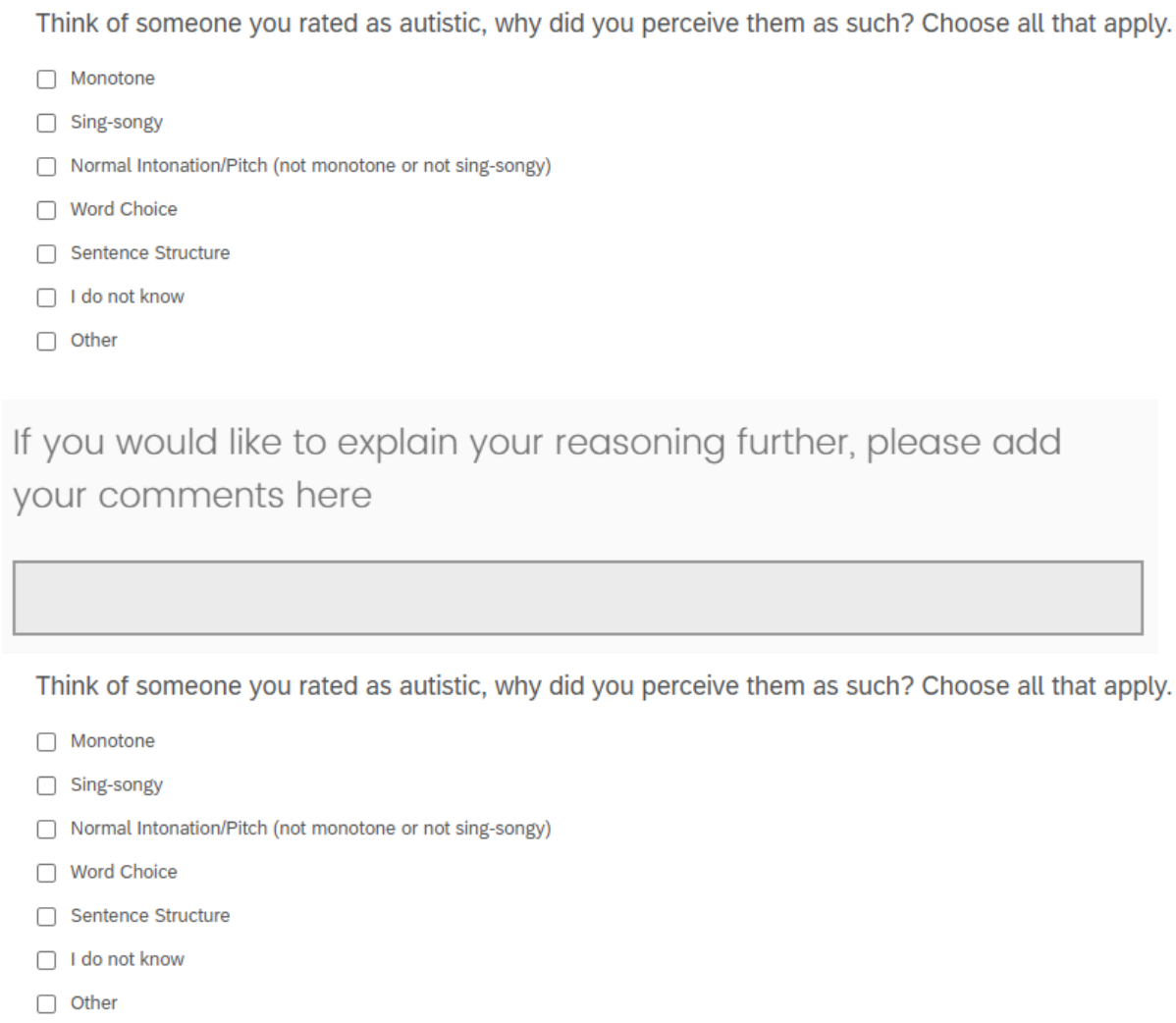
- ◯ No
- ◯ Maybe
- ◯ Yes

If you answered yes, how do you interact with these individuals? Choose all that apply.

- ☐ Family Member(s)
- ☐ Friend(s)
- ☐ Distant Acquaintance(s)
- ☐ Co-Workers
- ☐ Customers
- ☐ Students
- ☐ Teachers/Professors



Appendix B: Survey Qualitative Questions



If you would like to explain your reasoning further, please add your comments here.