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LINGUIS 150: Sociolinguistics
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Research Project: Study of Sociolinguistic variation for Affirmation and Declination Responses, aka "Yes" and "No" Variants

Abstract:

In this study, I seek to explore the sociolinguistic variation in the usage of "yes" and "no" response variants. English speakers have several different ways to express consent or agreement, as well as to express disagreement. After collecting auditory linguistic data over the span of two weeks, I hope to see whether or not these linguistic variants can be correlated with social factors, such as gender of the individuals conversing and the formality of their relationship.

In truth, I have some prior guesses as to how strongly social factors will correlate with linguistic variants of the "yes" and "no" response. My hypothesis is that gender will not have a very large influence on the usage of "yes" and "no" variants. Especially on a college campus, the location in which I will likely collect most of my data, college students interact with students of the other gender in many contexts, so that I think linguistic variants are bound to become shared between students of any gender. Therefore, I do not think gender will play a large role in the variation of "yes" and "no" responses. If there is any variation at all, I think that it may be due to how female-and-female, male-and-male, and male-and-female relationships are constructed. In particular, this linguistic variation may be an effect of how familiar and comfortable speakers are with their addressee, which may have some correlation with the other person's sex.

My second hypothesis is that the formality of the relationship is bound to have a large impact on the "yes" and "no" response variants being used. As discussed in class, speakers engage in style shifting because of the perceived relationship between them and their addressee(s), i.e. speaking to your boss versus speaking with a close friend. I think that the comfort level between the speaker and their addressee will have a huge factor in how they choose to speak, which rests heavily on factors such as the formality of the relationship between the two parties.

Additionally, I chose to record and explore the effects of race and location on the linguistic variants of "yes" and "no" responses. Race was not a very difficult feature to observe and identify, although there is the possibility that some individuals of mixed race were not accounted for in my observations.

Situational context can have large implications on how people speak, and depending on location, it can influence how many people are in the surrounding vicinity of the conversation. In particular, this assumes that Bell's "audience design" framework is a factor which affects how people speak, such that people begin style shifting – changing how they speak – because of who is listening (aka how public the location is). I think that this is sufficient reason to record the location of the interaction and usage of these variants, in order to see whether "publicity" of a location (how many people are surrounding), crowdedness of an area (the vicinity to which other people are located), and social associations of a location can influence how people choose to use their "yes" and "no" variants as well.

As mentioned beforehand, I seek to listen for variants of affirmation ("yes" words) and variants of declination ("no" words") and determine if there is any significant correlation between the usage of any of these variants and the social factors of gender, race, formality of relationship, and situational context.

Methodology:

I have broken up the discussion of my methodology into sections describing the data collection process, data grouping decisions, and noteworthy observations during data collection.

Data Collection Process:

In order to investigate whether variants of affirmation responses and variants of declination responses correlate with any social factors, I collected linguistic data of people speaking around me and with me for the span of two weeks, specifically Oct 28, Mon. to Nov 10, Sun. in 2019. Because of the duties of being a student at Berkeley and needing to attend classes and complete classwork, most of my data was collected in classroom settings and study areas. As a result, most of my data comes from convenience sampling, since it revolved around where I happened to be during this time span and whether I happened to hear it or not. I would listen for these linguistic variants primarily when I was conscious of others' conversations around me or with me. If unsure of which variant was said because of low volume, distance to the conversation, or mumbling, among other obstacles, I did not choose to record it.

At the beginning of my study, my data mainly came from people I was familiar with and my conversations with them. So, in an effort to make my data more representative of the college student population at Berkeley, I made efforts to go to public places, such as the ASUC Student Union: Martin Luther King Jr. Building and the Golden Bear Café, and listen for variants used in other people's conversations as well. Thus, I could avoid the influence of local sampling from my friends, who may all speak similarly, and gather data on the linguistic variation of a simple random sample of the Berkeley student population. I also limited the number of responses that I gathered from one person during a single conversation to five and under. This was to ensure that I was not biasing all my data based on any one person that I spoke with, and because I noticed that people tended to repeat the same type of response during a single conversation, whereas they might differ in their next conversation with someone else. This is due to a phenomenon I noticed that I will discuss when elaborating on the data in the next section.

In my study, I choose to use 2 gender types ("Male" and "Female") in identifying people. This allowed me to gather data from people walking by or around me without having to ask for their personal gender identification.

In order to record my data points, I would primarily write down the variant being used in my cell phone notes, as well as the race and gender of those engaged in the interaction. This would occur after hearing someone else's conversation or after I had a conversation with someone. Later that night, or the following day, I would record that data into my spreadsheet as well as where the conversation occurred.

I also decided to ask questions to people who are obliged to help customers or students, in order to further explore a "formal" type of relationship and whether that affects variants of "yes" and "no" responses. In

particular, these included students serving at the help desks of organizations or cashier clerks at restaurants.

Noteworthy Observations during Data Collection:

While listening to other people's conversations around me, I noticed a curious occurrence which I will dub the "temporal locality phenomenon" (based off a concept that I learned in computer science courses). People tend to repeat themselves, and thus, use the same variant of "yes" or "no" in the same conversation, especially if they say their affirmations or declinations within a short period of time of each other. For example, I heard a lot of people saying "yeah, yeah, yeah", usually when they were enthusiastically showing agreement or to provide emphasis in their affirmation. Also, people who were asked questions back-to-back would typically answer in the same way. For example, I heard a couple conversations where the person would revert to the same variants over and over, because they would be asked the same question over and over, or they would stay with that same emotion of enthusiastic "yes"-es for the duration of a conversation. This resulted in certain responses being given repeatedly if I was present and listening to that conversation for a sufficiently long amount of time.

I found it much easier to gather data in certain contexts than others. For example, I was finding it difficult to listen for responses in classroom settings, where people usually do not make much noise when responding to questions from other classmates, opting to give nonverbal responses instead (such as nodding or giving a thumbs-up response). I found certain responses much more common to certain situations as well. In office hours of computer science and data science courses, people usually would be asked questions by TA's and would inevitably give unsure responses, such as "I don't know" or some indecipherable noise. However, as they silently agreed for lack of actually knowing how to respond, they would occasionally say "yeah" or murmer "mm-hmm" to show TA's that they are paying attention or to encourage them to continue answering their question.

Occasionally, I tried to gather my affirmation and declination variants from students around me by asking innocuous questions that should require a "yes" or "no" response. I mostly did so when trying to gather more diverse data points, whether that be data from female addressees or those in a formal relationship with me. However, I continued to find that, again and again, people chose to use varied responses to these questions. Most of the time, people would try to specifically answer my questions and avoid even giving an affirmation or declination response at all. For example, if I asked "Do you know where the bathroom is?", which should entail a "yes" or "no" response before elaborating, people would skip right to the point and say something like "Right down the hall." I found that "Is …" questions were much more commonly answered with affirmation responses than "Do you know…" questions were, which were often answered with very specific responses without the affirmation or declination response variant included.

On other occasions, people would not even respond to questions demanding a "yes" or "no" response, instead opting to nonverbally show their disagreement or affirmation by pointing their thumbs up, nodding or shaking their head, laughing, or making a certain face. If people did not know the answer to a "yes" or "no" question, they would often make a face, make a noise to show hesitation (i.e. "uhhh" or "mmmm"), or say "I don't know." Sometimes, people chose to give qualitative responses too, especially when unsure of the answer, answering with responses such as "I think", "pretty much" or "maybe." These obstacles sometimes made it frustrating for me to collect data on affirmation and declination responses, but it revealed a lot to me about the various ways in which we choose to communicate, apart from the traditional expected "yes" and "no" responses.

Another interesting point is that friendly conversations, especially between friends who seemed really comfortable with each other, tended to result in many, many affirmation responses. In particular, I think that this is likely because not only are friends more likely to share the same opinions and viewpoints about things, but also they are more likely to want to agree with each other because they want to make the other person feel affirmed or to experience a stronger bond in their relationship from holding the same beliefs about their topic of discussion.

Data Organization:

I grouped some of my data into categories during and after I finished collecting my data. For some of the variables I was looking at, it made sense to decrease the variance of the variables that I observed and to group similar observations together, so that data analysis would be easier. For example, I chose to use the race identifications, as used by the US Census Bureau. For those who are not familiar, the US Census Bureau categorizes people as "White", "Black or African American", "American Indian or Alaska Native", "Asian", and "Native Hawaiian or Other Pacific Islander". I decided to split the “Asian” categorization and differentiate between “East Asian” and “Indian”, since, in my opinion, there are significant cultural differences between East Asian cultures and Indian culture and much more similarity between East Asian cultures with each other.

As discussed before, I divided my gender variable into the categories of “Male” and “Female” when labelling addressers and addressees within a conversation.

After gathering data on the relationships between people I saw in conversation, or who conversed with me, I divided them up into groupings to examine my chosen variable of the “formality” of the relationship. This is, in essence, a measure of how comfortable one may feel with the person they are conversing with, as well as how formal or informal their relationship is. I decided to group the formality of relationships using the following system. For my relationship labels of "friend", "good friend", "fellow student", and "on the phone", I placed these data observations into the "Informal" category. I grouped labels of "teaching", "customer", "parent", "acquaintance", and "strangers" into the "Formal" category.

I also gathered data on the locations where affirmation and declination variants were given. I sought to use the publicity of a location as a measure with which to gauge the impact of eavesdroppers and overhearers on a person’s chosen response variant, whether for affirmations or declinations. I decided to group the publicity of locations based on whether it was a public or private area and how crowded it was, in essence, giving a measure of how close other people excluded from the conversation are within the surrounding vicinity. I grouped "MLK", "class", and "restaurant" into the "Public & Crowded" category; "GBC", "street", and "RSF" into the "Public & Spacious" category; "apartment" into the "Private & Crowded" category; and "phone call" into the "Private & Spacious" category.

My independent variables were race and sex of addressee, race and sex of addresser, formality of relationship, and location of the conversation. These were the social factors that I expected to have an influence on the linguistic variant being used in affirmation and declination responses.

The number of different variants that I observed for both affirmation and declination responses was 40 in total, even after cleaning up my dataset to correct for faulty or inconsistent data input. As such, I was forced to further group “yes” and “no” response variants into categories that showed consideration for

both the uniqueness of a response, common usage among multiple individuals, and common words that responses might share.

I would say that the most difficult part of my study was deciding which groupings to place my response variants in, since there were so many different variants that were used and many similar ones.

Because there were way too many types of response variants that I recorded, I grouped them into certain general categories of response variants. For “yes” response variants, I chose to use the categories of “yeah”, “Sounds” (including “mm-hmm”, “mm”, “uh-huh”), “okay”, “yes”, “alright/right” (considering “right” as merely an abbreviated version of “alright”), “sure”, “Mixture”, and “Other.” My “Other” category responses included less frequent response variants, such as “nice”, “yep”, “sounds good”, “exactly”, “think so”, “of course”, “guess so”, “hopefully”, and “that’s cool”.

For affirmation responses, I had to become creative to further narrow down responses and place them into groupings. For repeats of the same variant in one response, I chose to count this as one response of that variant. (For example, if the addresser used "yeah, yeah, yeah", I counted that as one response of "yeah”.) For mixtures of affirmation responses (i.e. "okay yeah"), I grouped these into one category known as "Mixture." In reality, I was concerned with how I enumerated my data points and how I was to tally my data when calculating frequency of certain response variants. After some careful deliberation, I decided to tally counts in this manner because of the following argument.

If I chose to count my mixtures of affirmation responses as tallies for each affirmation (i.e. counting "okay yeah" as 1 count of "okay" and 1 count of "yeah"), then my counts of data points would no longer be of the unique responses that people gave in conversation, but of the occurrence of each variant in an entire conversation. I sought to look at each response as unique on its own, since repeats and mixtures of a variant serve the same purpose of affirmation and declination, but could work together to express a more mellow form of agreement by using multiple variants together (such as “okay sure”). So, I chose to tally the number of unique response variants, instead of the number of affirmation and declination words themselves. My above groupings divide responses into categories, which show the true frequency of response variants, rather than the frequency of the response words themselves.

In further detail for my groupings, I grouped "right" and "alright" responses together as the "Alright/Right" category. For somewhat non-vocal affirmation and declination noises, I group them into the "Sounds" category. Finally, I grouped the other less common response variants into the "Other" category. These include all "yes" responses with a count of two or lower.

I decided to group the linguistic variants that I observed for “no” responses into “no”, “no ___”, “nah”, “not ___”, and “nope.” My “no ___” category responses included variants, such as “no it’s okay” and “no, sorry.” My “not ___” category included variants such as “not really” and “not sure.” Again, I decided to group repeats of “no” into the “no” category, similar to what I did for the “yes” response groupings.

After deciding on how I was to categorize my variables, I was then able to create tables that displayed the frequency of these affirmation and declination variant groupings, and observe how they changed with my chosen social factor variables.

Data Exploration and Visualization:

I utilized Jupyter Notebook and the pandas library in Python to create a dataframe of my data, clean up my data points, group my data observations of social factors, and get response counts of the linguistic variants of “yes” and “no” and the four variables that I have been tracking. Then I used Excel and Word to create data tables summarizing my findings within the groupings that I decided on.

Shown below in Figures 1 and 2 are the distributions of the variants of “yes” and “no” responses among male and female addressers.

Figure 1: Distribution of "Yes" response variants for female and male addressers

"Yes" Response variants	Female Addresser count	Female Addresser percentage	Male Addresser count	Male Addresser percentage
Yeah	N=61	64.9%	N=60	58.8%
Sounds	N=8	8.5%	N=8	7.8%
Okay	N=8	8.5%	N=7	6.9%
Yes	N=5	5.3%	N=6	5.9%
Alright/Right	N=4	4.3%	N=4	3.9%
Sure	N=1	1.1%	N=6	5.9%
Mixture	N=4	4.3%	N=3	2.9%
Other	N=3	3.2%	N=8	7.8%
Total	N=94	100.0%	N=102	100.0%

Figure 2: Distribution of "No" response variants for female and male addressers

"No" Response variants	Female Addresser count	Female Addresser percentage	Male Addresser count	Male Addresser percentage
No	N=11	84.6%	N=9	60.0%
Nah	N=1	7.7%	N=2	13.3%
No ____	N=0	0.0%	N=2	13.3%
Not ____	N=1	7.7%	N=1	6.7%
Nope	N=0	0.0%	N=1	6.7%
	N=13	100.0%	N=15	100.0%

From Figure 1, one can see that approximately the same percentage of male and female addressers use the same corresponding “yes” variants for many of the common response variants, such as “yeah”, sounds (“mm-hmm”, “mm”, “uh-huh”), “okay”, and “yes”. The percentages begin to differ for the less frequently used “yes” variants; however, this is most likely due to the fact that fewer samples are being used, so that individual responses are more biased to the individual and not as representative of the population itself. I would need more data to confirm that male and female usage of these less common “yes” variants actually differ significantly.

Figure 2 reveals that “No” is the most common declination response given by either gender. It reveals that no matter which gender the addresser is, there is a high percentage of speakers that will give the “no” response variant. Even with the low amount of “no” responses collected, we can clearly see that other responses occur much less frequently in comparison with “no”.

The distributions displayed in Figures 1 and 2 reveal that gender is not a very strong indicator of which affirmation and declination response variant is used. From the similar-looking distributions for both genders, we can deduce that response variants given are probably not a function of the gender of the speaker; there is little to no correlation between these two variables.

In Figures 3 and 4, we can see the distribution of responses directed towards Male and Female addressees.

Figure 3: Distribution of "Yes" response variants for female and male addressees

"Yes" Response variants	Female Addressee count	Female Addressee percentage	Male Addressee count	Male Addressee percentage
Yeah	N=31	67.4%	N=88	59.5%
Sounds	N=2	4.3%	N=14	9.5%
Okay	N=2	4.3%	N=13	8.8%
Yes	N=1	2.2%	N=10	6.8%
Alright/Right	N=3	6.5%	N=5	3.4%
Sure	N=2	4.3%	N=5	3.4%
Mixture	N=3	6.5%	N=4	2.7%
Other	N=2	4.3%	N=9	6.1%
Total	N=46	100.0%	N=148	100.0%

Figure 4: Distribution of "No" response variants for female and male addressees

"No" Response variants	Female Addressee count	Female Addressee percentage	Male Addressee count	Male Addressee percentage
No	N=3	100.0%	N=16	66.7%
Nah	N=0	0.0%	N=3	12.5%
No ____	N=0	0.0%	N=2	8.3%
Not ____	N=0	0.0%	N=2	8.3%
Nope	N=0	0.0%	N=1	4.2%
	N=3	100.0%	N=24	100.0%

From Figure 3, we continue to see that “Yeah” is the most common affirmation variant being used towards female and male addressees alike. The other affirmation response variants seem to be different among male and female addressees if we look at percentages; however, if one takes a closer look at the tallies for female addressees, we will note that female addressees had a much lower count for the other variants as opposed to counts for “Yeah.” Thus, the female addressee distribution for the less frequent affirmation response variants seems relatively even across the less common variants. I think that I need more data points to properly compare the frequency of the less common affirmation variants across gender categories.

Figure 4 shows a similar story to that of Figure 3. Once again, the female sample size is much smaller than the male sample size. We continue to see that “no” is the most common variant being used across genders, although it is risky to assume that for a female sample size of N=3. We also see lower counts for the other declination variants for the male sample.

Disregarding the small sample size for female addressees, we could once again say that female and male addressees have similar distributions for both “yes” and “no” variants. In conjunction with our observations from Figures 1 and 2, we continue to gain a strong intuition that gender may not have a very strong correlation with the affirmation and declination response variants being used. Since the distributions look similar for male and females in the case of both addressers and addressees, we gather more and more evidence that gender is not an influential social factor when it comes to how people choose to use their affirmation and declination variants.

When listening for the affirmation and declination response variants being used in conversation around me, I took note of the familiarity of their relationship. In particular, I categorized relationships into “Formal” and “Informal” bins. Figures 5 and 6 show the result of these observations.

Figure 5: Distributions of "Yes" response variants used in conversation between two individuals in a formal relationship versus that of an informal relationship.

"Yes" Response variants	Formal Relationship count	Formal Relationship percentage	Informal Relationship count	Informal Relationship percentage
Yeah	N=24	57.1%	N=95	62.5%
Sounds	N=3	7.1%	N=13	8.6%
Okay	N=2	4.8%	N=13	8.6%
Yes	N=2	4.8%	N=9	5.9%
Alright/Right	N=3	7.1%	N=5	3.3%
Sure	N=1	2.4%	N=6	3.9%
Mixture	N=2	4.8%	N=5	3.3%
Other	N=5	11.9%	N=6	3.9%
Total	N=42	100.0%	N=152	100.0%

Figure 6: Distributions of "No" response variants used in conversation between two individuals in a formal relationship versus that of an informal relationship.

"No" Response variants	Formal Relationship count	Formal Relationship percentage	Informal Relationship count	Informal Relationship percentage
No	N=2	50.0%	N=18	75.0%
Nah	N=1	25.0%	N=2	8.3%
No ____	N=1	25.0%	N=1	4.2%
Not ____	N=0	0.0%	N=2	8.3%
Nope	N=0	0.0%	N=1	4.2%
	N=4	100.0%	N=24	100.0%

From Figure 5, we can see that “Yeah” and sound responses are the most frequently given variants given for individuals in both formal and informal relationships. Here, we see a little more variation in the frequency of the other variants between the formal relationship and informal relationship distributions; however, if looking closer at individual counts, we can see that the sample size of formal relationship responses is much smaller than that of informal relationship responses. Thus, individual preferences for responses can impact our representation of the population much too heavily. I think that we would need more data responses for conversations of those in a formal relationship in order to see if the response variant distribution is really different for less frequent affirmation response variants.

From Figure 6, we have a very small sample size of N=4 for the formal relationship distribution, so I choose to not say anything conclusive about the formal relationship distribution for “no” responses. The informal relationship distribution has “no” as the most commonly used variant; the counts of other declination variants used dwindle in comparison and seem to be much less favored.

Figures 5 and 6 reveal that the most common variants of declination and affirmation responses continue to stay the same (“Yeah” and “No”), no matter the formality of the relationship between two individuals. The frequency of the other less common variants show much more variation between the distributions of formal and informal relationships, but this is expected, given the fewer counts of these variants, which can sway the percentage who use the variant given one more count recorded of that response. It is not advisable to make a distinction between the frequencies of these less common variants without more data points being gathered from these two distributions.

I decided to drop my exploration of race of addresser and addressees and their potential correlation with “yes” and “no” variants. This was due to a couple of reasons: a) I did not always immediately write down the information about conversations right afterwards and would forget the appearance of whoever I observed; b) I could usually tell the race of people, but there is the possibility that people are mixed although they may not appear so; and c) I have too many missing data about races of addressers and addressees to make meaningful conclusions. Because of the presence of missing and faulty data on identifying the race of individuals, I decided against creating any such correlations with race using this dataset.

I also decided to drop my exploration of location and the influence of the "publicity" of a location on the variants that are used for affirmation and declination. One can see some of my exploration of that data in my Jupyter notebook, if curious about the distribution of variants used given the publicity of a location.

Conclusions:

From analyzing the distributions of the social factors of gender and formality of a relationship, I cannot say that I am convinced that either variable has any significant correlation with the type of affirmation or declination response variant being used.

The variant distributions between male and female addressers for both affirmation and declination responses have a very similar shape, with similar frequencies of each response variant. Also, the most common variants of affirmation and declination responses are the same for both distributions. When comparing this with our observations of the distributions for male and female addressees, we see that the distributions between the two genders continue to look the same to each other. Since male and female addresser distributions look similar to each other for "yes" and "no" response variants, and male and female addressee distributions also continue to look similar for "yes" and "no" response variants, then we can assume that other factors could have more influence on the response variant being used and that gender is not a very influential variable on the type of affirmation and declination variant that is used.

This provides compelling evidence that my hypothesis is correct in that gender does not seem to have much influence on the type of affirmation or declination response variant that is used. The evidence supports my intuition that the commonly intermingled interactions between both genders for college students (who comprise most of my sample) leads to almost identical affirmation and declination response variants being used, no matter the gender of the addresser or addressee. Since students interact with members of the other gender so frequently, it is unlikely that they have unique response variants set aside for the occasion of meeting someone of the other gender since this happens so frequently.

The distributions for people engaged in conversation in a formal relationship versus an informal relationship also seem to be very nearly the same, regardless of the formality of the relationship. However, I cannot be as conclusive with my findings for this variable, since the distributions of response variants for formal relationships have such a small sample size (N=42 and N=4). I found that affirmation response variants and declination response variants continued to favor the most common variants of "yeah" and "no" for both formal and informal relationship distributions. The frequencies of other less common variants differed slightly between the formal and informal relationship distributions; however, I think that this is more due to lack of data points and a smaller sample size, rather than an actual effect of the formality of the relationship.

I believe that there are certain confounding factors that likely may have misguided my investigation of this dataset and linguistic variants of affirmation and declination being used. In particular, these questions and concerns were mostly raised during the data collection process.

I noticed that people tend to repeat themselves a lot when they continue to agree with whoever they are conversing with. They choose to use the same variant that they have been using, because they are becoming more enthusiastic about their common agreement or to show their affirmation more wholeheartedly. I also propose that, even unconsciously, it is likely that people will give the same answer

again if it was said in temporal proximity of the other affirmation or declination responses. As I discussed in the section about my data collection observations, this happened pretty often during my data collection, so much so that I chose to limit responses from a single conversation to five response variants being recorded. However, I still think that this likely could have had a large impact on my recorded frequencies of certain variants being used, since certain variants might have been used by the same person in a short period of time and would have showed up in my frequency tables as being more commonly used than they actually are.

Sometimes, I tried to gather my affirmation and declination variants from students around me by asking questions that should require a "yes" or "no" response. However, most of the time, people would try to specifically answer my questions and avoid even giving an affirmation or declination response at all. In other situations where people were unsure of how to respond to questions, or especially to questions which they are not sure if they want to reveal the answer to (i.e. "Have you finished the lab yet?"), people would nonverbally show their disagreement, make a noise, or contort their face. Sometimes, people chose to give qualitative responses too, especially when unsure of the answer, answering with responses such as "I think", "pretty much" or "maybe." These other variants may have taken the place of some of my verbal linguistic affirmation and declination variants that I was recording, and in the event that they didn't exist, would have likely influenced the frequency of my other variants that I was recording.

I noticed that friendly conversations often resulted in a lot of "yes" responses. In these conversations involving people in informal relationships, people would often want to give affirmation or agree with whoever they were conversing with, as I mentioned before. I think that this is particularly why I have more "yes" responses in comparison to my "no" responses. I think that, as a society, people desire to give more affirming responses to each other with the idea of getting closer with one another through their common belief and response, or to show their enthusiasm during conversation which also furthers the notion of growing closer relationally to the other individual. People only seem to bring out their "no" responses whenever they are more adamantly disagreeing with the other individual or they are unsure of how to respond, as is the case with students in office hours.

By no means is there not any more explorations that can be done with the data that I gathered. As I have explored the distributions between male and female speakers and listeners, I would also be curious to see if the distribution of variants differed between male-to-female and female-to-male interactions, or whether they differed if the people engaged in conversation were of the same sex or not. This would likely require more data collection to explore this variable.

Other variables which I would like to explore more in-depth, given a greater number of datapoints, and more accurate, planned data-gathering would be race of addresser and addressee, as well as publicity of location. Race is an indicator of other social variables, such as education background and social circles, and likely has an impact on the way that people talk. Most likely, I would think that people of the same race would talk in a different way than with people of a different race (particularly because many social circles in college tend to involve people of the same race).I think that the publicity of the location in which a conversation happens can also have a large impact on how comfortable a speaker feels, and possibly which variant they end up using. Because of the presence of other people around them, who are eavesdropping or overhearing what they say, I think that individuals could style-shift and choose other variants because they are conscious of these people around them.

As I conclude, I would like to remark that the results of this study only can be said to hold true for the student population of Berkeley. Indeed, the scope of my results can only be said to apply to the

population that I have been examining. The location that I gathered my data from, as well as the population that I am sampling from, likely has a large influence on which affirmation and declination variants are being used in conversation around me. Ideally, I could get a more representative sample by asking others around me to gather data for me as well, in order to eliminate the biased effects of convenience sampling from what I hear and the conversations that I choose to engage in. However, since I chose to gather a good amount of data from both public and private contexts, I would say that my sample is fairly representative of the student population at UC Berkeley.