Effects of social contact on the production of English /r/ and /l/ in Japanese learners of English

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THE EFFECTS OF SOCIAL CONTACT ON THE PRODUCTION OF ENGLISH /u/ AND /u/ IN JAPANESE LEARNERS OF ENGLISH

By

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B.A. Montana State University, Bozeman, 2002

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Approved by:

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Date

5-31-05

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The Effects of Social Contact on the Production of English /l/ and /l/ in Japanese Learners of English

Chairperson: Dr. Mizuki Miyashita

This thesis reports the results of a study intended to explore the effects that the amount of social contact has on the linguistic skills of native Japanese students attending study abroad programs at universities in the United States. More specifically the focus of this paper is to assess the influence that the amount of social contact has on the acquisition and target-like production of a phonetic contrast which exists in the second language but not in the first language. In addition to the question of whether social contact is an important factor in acquiring English liquids, I have also tried to address additional variables of motivation and attitude which might influence the amount of interaction learners choose to engage in outside of the language classroom while studying abroad.
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List of Figures

Figure 6.1: Combined Graph 36
Figure 6.2: Combined Score Chart 39
Figure 6.3: Correlation Chart 41
Figure 7.1: Social Contact/Pronunciation Improvement 42
Figure 7.2.1: Motivation/Pronunciation Improvement 46
Figure 7.2.2: Motivation/Social Contact 49
1. Introduction

The original goal of this study was to experimentally test the validity of advice I had been dispensing to students since I first began teaching, that the more practice they had using the language in an informal setting the faster and more completely they would learn it. Specifically, the goal of my research was to assess the influence that the amount of social interaction has on the acquisition and target like production of phonetic contrast which exists in the learners' second language but not in the first language. In addition, I wanted to explore whether affective factors, such as attitude and motivation, might influence the amount of contact learners ultimately chose to engage in outside of class.

This thesis provides empirical support for the hypothesis that the amount of social contact L2 learners engage in will show a positive correlation with pronunciation improvement over the course of one academic semester. It also examines a second hypothesis which predicts learner motivation playing a causative role in the second language learner's decision to seek out contact with native English speakers. The results of this study show social contact to be an important factor, but not the sole factor, in pronunciation improvement in the particular immersion setting in which this study takes place. The results also show no correlation between learner motivation and amount of social contact or effect on pronunciation accuracy directly.

I chose intermediate to advanced proficiency level students from EAP (English for Academic Purposes) classes at the University of Montana, who in most cases had at least one semester of experience living and studying in the United States, as participants in the project. For the pilot study, a survey was designed to measure the amount and types of contact that the participants received outside of the language classroom. In
addition to measuring amount of social contact, the survey also included questions
designed to gain insight into the individual learner’s attitudes toward learning English as
a second language, their attitude towards American culture in general, their motivations
for studying abroad, and their experience of any kind of pressure or anxiety related to
using English. These additional factors were included in the survey in order to get a
more complete picture of the kind of students that would be more likely to engage in high
or low amounts of contact with native English speakers, in addition to revealing the
affective variables which may determine the amount and type of interaction that second
language learners engage in. More specifically I wanted to see whether any of these
factors or a combination of factors would be a likely predictor of the learner’s amount of
social contact or if they would even have a direct impact on second language learning as
some previous research suggests. The results of the pilot study indicated that these
additional “affective factors” played a primary role in determining the amount of contact
that the participants ultimately choose to engage in while studying and living abroad.

One of the major drawbacks of the pilot study was that it only captured a snapshot
of the participant’s pronunciation accuracy at the particular point in time when it was
recorded. Even though it was possible to measure pronunciation accuracy at that
particular point in time I had no idea how much their pronunciation had improved since
their arrival in the U.S. or even if it had gotten worse. The design of the present study
incorporated a longitudinal pronunciation task which measured individual participants
pronunciation accuracy at the beginning of the semester and then again at the end of the
semester approximately three and a half months later. The longitudinal design was
significant because it allowed me to measure the participant’s pronunciation
improvement over the semester in addition to their pronunciation accuracy at times 1 and 2.

In order to get a more complete picture of student attitudes and motivation in the present study, an additional survey was designed and administered using Gardner’s Attitude/Motivation Test Battery (AMTB) as a template.

This thesis is organized in the following manner. The next section focuses on providing the theoretical framework which my own argument is built on, beginning with explanations of two important social models of second language acquisition and continuing to more current research on the effects of informal contact on grammatical and pragmatic development as well as second language sound production and perception. An exploration of the different ways in which social contact has been defined by researchers in the past will also be provided. The third section provides a brief sketch of current research on the effects of so called affective factors on L2 achievement, focusing particularly on the role of learner attitude and motivation in second language studies. Section four deals with the question of whether or not it is possible for adult learners to acquire accurate pronunciation in a second language. This section also explores specific problems Japanese learners have in learning to perceive and produce the contrasting English liquid phonemes /r/ and /l/ and why they might feel that accurate pronunciation is important. Section five describes all aspects of the experiment that was designed to test both of my hypotheses. The sixth section contains the experiment results, including a description of the statistical methods used to interpret the data. Sections seven and eight of the thesis are devoted to a discussion of the results, conclusions and directions for further study.

3

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2. Social Contact

In the time that I have taught English as a second language, I have been approached by numerous students, enrolled in both American and foreign universities, who have asked me what the most effective way to learn how to communicate in English was. Usually the students are looking for ways to supplement the classroom language instruction they are receiving with informal activities that they can incorporate into their daily routine, like watching more American movies or having a native English speaking conversation partner. Many of the students have already taken the first steps in becoming immersed in the English language speaking culture, either through prolonged study abroad at American universities or shorter summer programs. As a teacher, my advice has been to increase the amount of time that students spend interacting in English and increase the amount of native English speakers in their peer group. I based my advice on the assumption that contact and interaction with native English speakers would have a positive effect on the learner’s proficiency in communicating in the second language. Once again, the intention of this study is to test the assumption that more contact and an increase in L2 usage will have a positive effect on L2 proficiency.

2.1 Natural vs. Educational Settings

According to Ellis (1994:214), “[a] general distinction can be made between ‘natural’ and ‘educational’ settings.” Educational settings, as the name implies, usually take place within the language classroom while natural settings describe the situations that learners experience while using the second language outside of the language classroom. It is assumed that the learning that takes place in natural and educational settings is fundamentally different. In natural settings the type of learning that occurs is
labeled “informal” in so far as learning results directly from the learner’s participation
and observation without any focus on underlying language rules and limited negative
feedback. The educational or “formal” setting on the other hand involves more emphasis
being placed on conscious attention to language rules and structures which are often
somewhat removed from the context in which they would normally occur (Ellis 1994).
However the divisions between the types of learning that take place in a particular setting
are not always so clear cut. Depending upon the pedagogical approach being used, less
attention may be paid to linguistic forms and more emphasis placed on practicing using
the second language in context in the language classroom. Likewise, second language
learners might also receive correction on specific language problems when engaged in
using the language outside of class. Numerous studies done on the role of learning
settings in second language acquisition have both supported and contradicted the
assumption that particular settings are most effective in promoting L2 learning.

A small number of studies have contributed evidence to support the claim that
social contact is an important factor in acquiring a second language. Upshur (1968)
compared three groups of learners who were receiving variable amounts of informal
exposure to the target language in combination with formal language instruction. His
study found the learners who received little or no formal instruction while receiving high
amounts of informal contact with the target language showed no significant differences in
improvement compared with those learners who had high amounts of formal instruction
or those who had equal amounts of exposure to both informal input and formal
instruction. The results led Upshur to conclude, “foreign language courses may at this
time be less effective means for producing language learning than the use of language in
other activities" (1968:124). Flege, Bohn and Jang (1997) compared the production and perception of English vowels by 20 non-native speakers of English with different language backgrounds. The participants were divided into two groups, experienced and inexperienced, based on their length of residence in the United States. The group with more experience living in the target culture was subsequently found to perform more accurately on both English vowel production and perception tasks when compared to the relatively inexperienced non-native group. These studies suggest that the more experience a learner has practicing a specific skill informally the more likely it is that they will acquire that skill natively. However, different learning settings seem to affect the acquisition of specific language skills in different ways.

There is also contrai-y evidence that suggests that the amount of informal contact that a learner engages in does not have a positive effect on second language proficiency beyond a certain point. Krashen and Seliger (1976) claim that the amount of formal instruction a learner receives is more important than the amount of informal practice the learner engages in outside of the language classroom. Krashen and Seliger state that the structured learning environment that formal language instruction provides is necessary to give positive and negative feedback to the learner which allows them to correct specific problems that they are having in the target language. They argue that the kind of feedback that learners require to promote learning is often undetectable in informal environments. Krashen and Seliger do admit that the point where formal instruction becomes necessary may vary depending on additional factors such as age, motivation and learning strategies used by individual learners. In addition it seems that the effects of
both second language instruction and social contact on second language proficiency
differ with regard to the types of skills that are being learned.

Previous studies seem to suggest that learning second language pragmatics, or the
way language is used to convey meaning in social interaction, is influenced by the
amount of time that learners spend using the language in authentic environments. The
acquisition of grammatical structures on the other hand, seem to be better acquired
formally with social contact and interaction playing a very limited role. The effects of
social contact on the acquisition of pronunciation skills has not been thoroughly
examined. This thesis strives to provide an in-depth analysis of the relationship that
exists between second language pronunciation and social contact. This study has two
assumptions at its core. First, that learners of English as a second language believe that
accurate pronunciation in the L2 is an important skill to acquire and second, that it is still
possible for second language learning adults who have past the critical period to sound
like natives in their second language.

2.2 Social Models of L2 Acquisition

So far this paper has explicited the distinction made between natural and
educational settings so that the relationship between L2 learning and the social context in
which it takes place can be better understood. I have also provided research background
on the role of social contact in L2 acquisitions, suggesting that informal settings have an
impact on the acquisition of specific L2 skills but not on others. What I will attempt to
do in this section is to provide explanations of two theoretical models which were
designed to explain why social factors are an inextricable component of second language
learning. Although there are additional social models available, I have chosen to focus
my attention on the two that I believe to be the most relevant to the current project, namely John Schumann's *Acculturation Model* and Robert Gardner's *Socio-Educational Model*. These two models were chosen specifically because they describe a causal link between the setting in which languages are learned and the level of second language proficiency that is ultimately reached by different individuals.

### 2.2.1 The Acculturation Model

Schumann's (1986) acculturation model was originally designed to explain the differences between second language learners who have highly developed second language systems and those learners who acquire the language slower or whose second language system fossilizes at an early developmental stage. The model is based on the observation of learners who are acquiring the language in naturalistic settings. For Schumann the learners' ultimate level of achievement in the second language is dependent upon the extent to which the learner is able to adapt or 'acculturate' to the target language culture. According to the model, learners are only able to acculturate if they have low levels of social and psychological distance from the target language group. Social distance defines the relationship among language groups as a whole as well as the individual language learners' place within those groups; it is measured by eight individual factors (social dominance, integration patterns, enclosure, cohesiveness, size, cultural congruence, attitude, and intended length of residence). These factors predict the amount of contact that learners engage in with the target language group and the level of cultural assimilation that takes place. Psychological factors such as the learners' motivation to learn the L2 and language learning anxiety operate separately from the group dynamics that cause social distance and thereby serve as secondary influences on
the choices that second language learners make. The combination of social and psychological factors determine the type of learning situation and whether or not it will have a positive or negative effect on second language development. Support for the acculturation model was provided by Schumann's observation of Alberto, a 32 year old Costa Rican immigrant to the United States who showed a marked lack of grammatical development in English. It was hypothesized that learners like Alberto are unable to progress beyond a certain point because they have a limited need to communicate in the L2. Due to high levels of social and perhaps psychological distance, Alberto did not identify himself with the target language culture which prevented his integration into it. According to Schumann it is the integrative functions of language use that allow us to express ourselves, with expression resulting in authentic communication in the target language. In its simplest form the acculturation model assumes that high amounts of target language contact result in more second language proficiency. Subsequent additions to the model have suggested that low levels of social distance and large amounts of contact also result in better quality of interaction in the L2 in addition to higher amounts of social contact.

The acculturation model was primarily designed to explain language acquisition by immigrant populations and not by students who are staying in the target language culture for a short time. The goals and expectations of immigrants may also be significantly different than the goals of foreign students studying abroad. Foreign students do not have the same sorts of external pressures resulting from having to support themselves and their families in the new culture or the social pressure to assimilate. The participants in this study were able to focus exclusively on learning English without the
additional pressure to assimilate. However I think that the basic tenets of the acculturation model may still be applicable. As I found in my own survey, the majority of students studying abroad do not wish to integrate within the target language culture and may choose to use English only as an instrument to communicate. As Schumann suggests, the lack of an integrative drive to become a member of the target language culture may interfere with second language development, but in the case of foreign students it may be the psychological factors of motivation, attitude and anxiety playing a more prominent role in determining how much contact the learner seeks out.

In further tests of Schumann’s model the relationship between social distance and second language development have not always been evident. Schmidt’s (1983) study of Wes, a native Japanese speaker learning English without any formal instruction while living in Hawaii, found that the predictions of the acculturation model were able to account for Wes’s exceptional pragmatic development but not his lack of grammatical competence in English. Wes, unlike Alberto, came from a culture that was viewed as equivalent to the English speaking culture on Hawaii. Wes was also financially secure and although he needed English to make money it was not his primary reason for learning English or for moving to Hawaii. In addition Wes, unlike Alberto, was an extrovert who did not mind making mistakes when speaking English. According to the model, Wes, who exhibits low social and psychological distance and high levels of contact, should be able to pick up English relatively quickly. However, contrary to the predictions of the acculturation model, social and psychological distance factors were not able to account for the lack of grammatical development in English that Wes exhibited. What these findings suggest is that contact with the L2 community resulting from low social and
psychological distance may only have a positive effect on specific language skills such as pragmatic competence but not other ‘harder to learn’ aspects of an L2. One of the goals of this thesis is to determine whether social and psychological distance factors play a significant role in the acquisition of pronunciation skills specifically.

Lybeck (2002) designed a longitudinal study that measured the effects of acculturation on second language pronunciation accuracy in native English speakers living in an immersion setting in Norway. For her experiment, Lybeck erased Schumann’s distinction between social and psychological distance factors and instead chose to use a single variable that she labeled “cultural distance” which combined both social and affective factors into a single concept used to measure the extent to which the participants were able to identify with the target language group. The results showed that students with the lowest amounts of cultural distance were able to perform at above 80 percent accuracy on the pronunciation task. Participants who were making slower progress in the acculturation process and were not able to make connections with native Norwegian speakers did not exhibit significant pronunciation improvement over the course of the study. Lybeck’s study also suggests that a combination of social and psychological factors, similar to those Schumann described, can contribute to the amount of contact that learners engage in while living in immersion settings. This study also makes clear the connection between lack of social contact and pronunciation improvement in a second language.

2.2.2 The Socio-Educational Model

Gardner’s (1985) socio-educational model differs from other social models of L2 acquisition in that its focus was originally on L2 learning in the language classroom. The
model is also more comprehensive because it incorporates social context, individual learner differences, setting, and relevant learner outcomes as predictors of L2 proficiency. According to Gardner the social context in which the learner is placed determines the extent to which they will identify with the target language culture. For example, if the learner comes from a society that values bilingualism or learning about other cultures then they might be more likely to have an integrative motivation to learn a specific L2. According to the model, strength of motivation has a major impact on the types of behaviors that learners engage in inside the language classroom and in informal settings. Subsequently learners who have high levels of integrative motivation tend to develop high levels of second language proficiency as well as more positive attitudes towards the L2 learning situation. Ellis (1994:238) states, “the strength of Gardner’s model is that it explains how setting is related to proficiency- one of the primary goals of any social theory of L2 acquisition- by positing a series of intervening variables (attitudes, motivation, self confidence) and by trying to plot how these are interrelated and how they affect learning.” Gardner’s model is also important because it gives us a more fine tuned analysis of similar psychological distance factors found in the acculturation model. The socio-educational model explains in-depth the psychological effects that particular settings have on learning. This point will be especially important to our discussion of the particular learning environment of study abroad programs.

So far I have explained the distinction made between formal and informal language learning environments and have reviewed several studies showing the effects both types of settings have on the acquisition of specific second language skills. We have also seen that the learners’ decision to seek out social contact with target language...
speakers is influenced by a myriad of factors both internal and external to the learner. Schumann’s model suggests that social and psychological distance are the main factors contributing to the learners’ decision to engage in communicative acts in the L2. Authentic communication hypothetically resulting in increased proficiency. Gardner’s model posits a direct connection between the learners’ strength of motivation for learning the L2 and attained language proficiency. This thesis tests both the assumptions that psychological distance is associated with amount of social contact and that learner motivation is by itself a sufficient determinant of second language proficiency. The results of the present study show that composite cultural distance scores as measured by Gardner’s AMTB play a very minor role in predicting amount of contact and pronunciation accuracy in a study abroad context.

2.3 The Impact of Study Abroad

Because the participants in this study were all enrolled in study abroad programs at the time they participated in the research tasks, I think it is fitting to include a section which gives a general overview of the typical study abroad experience as well as previous studies which have been done measuring the impact of study abroad on acquiring second language skills.

The study abroad experience can take many forms but, in general, study abroad programs usually consist of immersion in the target language culture combined with formal classroom language instruction and/or content learning. It is usually assumed that learners who spend time in study abroad programs are likely to have a high degree of success in becoming fluent in the second language they are learning. Likewise the learning environment that incorporates both formal language instruction and language
immersion is thought to be best for developing proficiency. One observation made (Freed 1990) is that study abroad programs bring second language learners in direct contact with native speakers of the target language, forcing them to participate in variable amounts of social contact where it is necessary to use the second language to communicate. Even though the benefits of study abroad are assumed to be great, the impact that the study abroad experience has on specific linguistic skills of second language learners has not been thoroughly examined.

Brecht, Davidson and Ginsberg (1991) conducted a comprehensive study of the effects that study abroad had on the language skills of American students learning Russian as a second language. One of the most significant aspects of the project's design was that it compared gains in language proficiency by students learning Russian in the US and those who spent time in immersion programs in Russia (ESL versus EFL settings). The study found that at least one semester abroad was necessary to reach a level of functional pragmatic competence in speaking in Russian. However, the study did not specify whether it was the intensity of instruction or the increase in social contact or the combination of both that caused the improvement in speaking skills while the students were living and studying abroad.

Riney and Flege (1998) studied improvement in Japanese learners' global foreign accent in English and production of English /ɹ/ and /l/ over a time span of four years. All of the participants in their study were attending university in Japan and reported variable amounts of time spent in English immersion environments. The study found liquid production and global foreign accent did not improve in all instances. However, the amount of time the participants had previously spent living in an English speaking
country was an important factor in predicting improvement. These studies suggest that the immersion environment, which is an integral component in all study abroad programs, can be an important supplement to formal instruction. One of the goals of my study is to isolate the impact of social contact on specific language skills by examining the acquisition of pronunciation skills which are not being formally taught.

2.4 Defining Social Contact

There are at least three ways that social contact has been defined in recent studies dealing with the effects of L2 experience on second language acquisition: First, length of residence (LOR) or the amount of time that the learner has spent living in the target language community; second, the amount of contact the learner has with the target language, including non-interactive contact such as watching television or listening to lectures; and third, the amount of time the learner spends actually interacting in the second language.

According to Flege and Liu (2001:530), "it is generally assumed that length of residence in a predominantly L2-speaking environment is positively correlated with the amount of L2 input an immigrant has received in the L2." However studies that have examined the effects of length of residence on pronunciation accuracy in second language learners have produced mixed results. Riney and Flege (1998) observed that Japanese students' foreign accents decreased after a stay in the U.S. On the other hand, Flege (1988) did not find a difference in accent ratings between groups of Chinese learners of English with average lengths of residence in the United States of 1.1 and 5.1 years. Oyama (1976) investigated both the effects of age of arrival and length of residence on foreign accent. The participants completed both read-aloud and free-speech tasks and
their strength of foreign accent was then judged by two native English speakers. The results showed a strong correlation between age of arrival in the United States and strength of foreign accent and no effect for length of residence and foreign accent.

Olshtain and Blum-Kulka’s (1985) study dealt with the effects that length of residence had on second language learners’ pragmatic development, focusing specifically on non-native speaker judgments of the appropriateness of apology and request strategies in Hebrew. The authors predicted that nonnative speakers of Hebrew with longer lengths of residence in Israel would exhibit request and apology strategies that were more in congruence with the strategies of native Hebrew speakers. What they found was that even though learners with longer lengths of residence had higher ratings of acceptance of Israeli apology and request strategies when compared to learners with comparatively shorter time in Israel, their judgments did not converge with those of native speakers. The study does not provide information on the types of second language input that the Hebrew learners had access to. Based on a similar longitudinal study of the acquisition of temporality in a second language, Klein, Dietrich and Noyau (1995:277) conclude that.

"Duration of stay is an uninteresting variable. What matters is intensity, not length of interaction. Therefore, ordering learners according to their duration of stay is normally pointless because it is too crude a measure for what really matters: intensity of interaction." The results of my research also confirm that LOR is not a good measure of the amount of time that learners actually spend using the L2 to communicate. Instead of measuring the amount of time that learners have spent immersed in the target language culture it may be more effective to measure the amount of time the learners actually spend using the L2 to communicate.
Kim (in Kasper and Rose, 2002) measured the effects that amount of second language input received in informal non-instructional settings had on native Korean learner's production of requests and apologies in English. The amount of input that learners were receiving was calculated by measuring the number of hours the learners spent interacting in English with friends and roommates and also how much time they spent reading English books, listening to the radio or watching television programs or movies in English. What Kim found was that both the amount of time spent speaking with native speakers and work experience in an English speaking environment correlated highly with English request/apology performance accuracy.

Spada (1986) compared how differences in amount and type of contact affected specific aspects of learner performance. She found that the types of contact that second language learners engaged in were more accurate in predicting learner performance on language proficiency measures than the amount of contact. Specifically, high contact learners who were engaged in the types of activities that involved communicative use of the L2 showed significant improvements in oral communicative abilities. Interestingly, the types of informal activities that were most effective in promoting acquisition depended upon the level of the learners involved in the experiment.

Although the learners' length of residence in the U.S. was considered as a variable in my study, length of residence was not included in the composite social contact score. Instead I chose to focus on measuring the amount of contact that the participants had with native English speakers as well as the amount of time that they spent using English to communicate. My goal was to replicate the results attained by Kim (2002) with pronunciation improvement being substituted for pragmatic accuracy. In addition, I
also wanted to get a peak at the types of interactions that the participants were engaging in outside of class in order to see if a high amount of communicative use was most effective in promoting accuracy.

3. Attitude and Motivation / Influence of Affective Factors

The examination of learner attitudes and motivations is important to second language research in general because language learning itself is, in the words of Dornyei (2002), “a deeply social event that requires the incorporation of a wide range of elements of the L2 culture.” Motivation and attitude are important to my study specifically because, as Gardner (1985) suggests, they seem to be the main factors responsible for promoting or hindering the learners’ drive to communicate in the L2.

Although there are numerous models explaining the role of affective factors in the acquisition of an L2 (Clement 1985, Giles & Byrne 1982), in this study I have defined the concepts of motivation and attitude within the framework provided by Gardner’s socio-educational model of second language acquisition because it is the most comprehensive and thoroughly developed. Earlier versions of Gardner’s model focused on the distinction between instrumental and integrative orientations for language learning and their effects on motivation. Orientations are defined as the underlying reasons for why an L2 is being studied and can include a personal interest in the target language culture or its usefulness in practical applications. An integrative orientation is defined by Dornyei (2003) as:

“A positive interpersonal/affective disposition toward the L2 group and the desire to interact with and even become similar to valued members of that community. It implies an openness to, and respect for, other cultural groups and ways of life: in the extreme, it might involve complete identification with the community and possibly even withdrawal from one’s original group.”
Although none of the participants in my study expressed purely integrative orientations for learning English, many of the participants had positive dispositions and attitudes towards both the L2 group and towards learning English in general. Instrumental orientations, in contrast, are based on external incentives and perceived rewards that will be received as the result of performing a certain activity well. For example, within the context of second language learning, learners may have strong instrumental orientations towards learning English because it is a sign of social prestige in the learner's home country or because there may be some monetary benefits involved. Studies have found that instrumental orientations may be important factors contributing to learner motivation in some learning settings, for example, when learners do not have access to the target language culture and thus do not have the opportunity to identify with it. The downside is that motivation resulting from instrumental orientation is often short lived; once the incentive disappears the learner no longer has a reason to apply extra effort to the task.

Motivation as a whole is much more difficult to pinpoint than individual orientations towards learning but is operationally defined by Gardner as the product of learner attitudes, orientations, goals and desires. Just as orientations can be integrative or instrumental, likewise, motivation can be considered instrumental or integrative based on the strength of the learners orientations in combination with other factors. More recent versions of the socio-educational model (Gardner 2001) posit that two factors, integrativeness and attitude towards the learning situation, influence learner motivation which in turn correlates with achievement in the L2.
In later formulations of the model, *integrativeness* implies an interest in learning a second language in order to become integrated within the target language culture. According to Gardner (2001), “Since *integrativeness* involves emotional identification with another cultural group, the socio-educational model posits that it will be reflected in an integrative orientation toward learning the second language, a favorable attitude toward the language community, and an openness to other groups in general.” In other words, *integrativeness* does not only account for the reasons why a particular learner chooses to study an L2, but also the extent to which the learner wants to use the language to become a part of the target language culture. The second variable, *Attitude towards the learning situation*, is a little bit easier to define. Since Gardner’s model was designed primarily to account for motivation in the language classroom, his definition of attitude includes the learner’s attitude towards the language teacher, towards their classmates and the class materials. According to Gardner, “someone may demonstrate high levels of *Integrativeness* and/or very positive *Attitudes toward the Learning Situation*, but if these are not linked with *Motivation* to learn the language, they will not be particularly highly related to achievement.”

Oller, Hudson and Liu (1977) designed their study to test Gardner’s claim that positive attitudes and integrative motives for studying a second language would correlate with increased proficiency in an L2. Their study focused on measuring the grammatical accuracy of native Chinese graduate students studying at American universities and comparing the results with various measures of learner attitude. What they found was a positive correlation between the participant’s attitudes toward both the native and target language culture and attained proficiency in English. The study also suggested, contrary
to what Gardner's model might predict, there was a negative correlation between the participants desire to stay in the United States and their proficiency in English. A similar study conducted by Chihara and Oller (1978) attempted to see if the relationship between positive attitude and proficiency found in a study abroad environment would still exist in an EFL environment where the participants were learning the L2 in their home country and therefore not necessarily being exposed to the L2 outside of the language classroom. What they found was that the correlation between attitude and proficiency in EFL environments was much weaker than the correlation found between attitude and proficiency in immersion or ESL learning settings. Based on these finding one could also assume that the link between attitude and L2 improvement would be most explicit in the types of learners that participated in my study. That is, highly motivated learners with generally positive attitudes towards learning the language who are voluntarily enrolled in an immersion program. However, the results of my study indicate that attitude and motivation did not have an impact on the amount of improvement on the pronunciation task. Although Chihara and Oller do not discuss the reasons why attitude is linked to grammatical accuracy in ESL environments, we could hypothesize that it is the increased availability of social contact in immersion settings that provides the link between positive attitudes and increased proficiency.

4. Pronunciation

Mastering the phonology of a second language is a complicated process which involves learning the characteristics of individual segments and the physical process of how they are produced, the ability to pronounce segments in combinations that form syllables, and the supra-segmental prosodic features of stress, rhythm, tone and intonation.
In this section I will begin by discussing the significance of pronunciation and the reasons why I chose this skill specifically as the focus of my research. I will also provide a general theoretical background dealing with the acquisition of L2 pronunciation in adulthood. The last section provides an in-depth examination of the specific pronunciation problems that Japanese speakers have when learning English as a second language.

4.1 Significance of Pronunciation
I chose pronunciation accuracy as the measure for determining whether language skills were being improved upon outside of the language classroom. More specifically I decided to focus on the correct production of a phonetic contrast which exists in the second language but not in the first language. The decision to choose pronunciation was motivated by two main factors. First, in my limited experience as an ESL teacher I have discovered that second language learners themselves often rank accurate pronunciation in the target language as a skill that is highly desirable in the quest for native like speech. The students in my EAP classes at the University of Montana usually rank English pronunciation foremost in the pantheon of language skills that they would like to concentrate on developing. Second, many studies had already been done on the effects of contact and interaction on grammatical and pragmatic competence but relatively little had been done on the effects of contact and interaction on pronunciation accuracy. A study that dealt with the ability to acquire accurate second language pronunciation in an informal environment outside of the classroom was especially appealing since the formal teaching of pronunciation in ESL classrooms in the U.S. is no longer widespread.
I choose to focus specifically on Japanese native speaker's production of English liquids because it is a popular topic of study with a significant body of research already having been done on it (Goto 1971, Mochizuki 1981, Sheldon and Strange 1982, Flege, Takagi and Mann 1995, Aoyama and Flege 2003, Riney, Takada and Ota 2000, Masuda, Norrix and Green 2000). The decision also had pedagogical motivations since Native Japanese speakers' confusion of the two English liquid phonemes is common, and confusion can result in the production of non-native sounding utterances which decrease the likelihood that the learner will be understood when communicating in the L2.

Assuming that promoting communicative use of English outside of the ESL classroom is an important component in language learning, one of the peripheral goals of this study is to extend the already well established theoretical foundations for the development and implementation of programs which give both ESL and EFL learners increased opportunities to interact with native English speakers.

4.2 Pronunciation/theoretical background

It seems to be the case that, up to a certain age, humans are able to acquire both first and second languages through exposure and use of the language alone. Similar to some species of songbirds who cannot learn new songs after passing specific developmental stages (Marler & Mundinger 1971), human speech learning likewise seems to be constrained by a developmental period. One of the most obvious results of learning a second language in adulthood is a noticeable foreign accent caused by differences in segmental articulation. Lenneberg (1967) suggests that the ability to acquire languages through exposure alone is constrained by the biological process of brain lateralization which occurs around puberty. He states, "Automatic acquisition from
mere exposure to a given language seems to disappear after this age, and foreign
languages have to be taught and learned through a conscious and labored effort. Foreign
accents cannot be overcome easily after puberty” (1967:176). Although there is
considerable controversy pertaining to the actual age when lateralization is complete.
research on aphasia suggests that the neurological plasticity of the brains language
centers tapers off in adolescents. Further studies seem to validate the existence of a
“critical period” for the acquisition of L2 sounds. Thompson’s (1991) study found that
Russian immigrants to the United States who had arrived before they were ten years old
were judged to have a more native like accent than those who arrived in adolescents or
adulthood. However in Thompson’s study two of the subjects who had arrived in the U.S.
at the age of four were still found to have a detectable foreign accent. He attributes this
result to the fact that the two participants also maintained high amounts of native
language use while living in the U.S. Thompson’s study suggests that age of learner
must be considered in addition to other factors such as amount of simultaneous L1 usage.
Flege and Liu (1999) found that Native Korean speakers were judged to have stronger
foreign accents and lower scores on grammaticality judgment tasks the later in life they
had arrived in the U.S. Scovel (1981) assessed the effects of age on the ability of non­
native speakers to recognize foreign accents in the L2. The results showed that non­
native speakers performed at an accuracy rate of 77 percent while native speakers could
identify foreign accent accurately approximately 95 percent of the time. However, in the
non-native speaker group there was not a large difference in the accuracy rate between
non-native adults and non-native children. The study is significant because it suggests
that even advanced second language learners may not be able to perform at the level of native speakers.

Despite substantial evidence supporting the notion of neurologically based constraints on learning L2 syntax and pronunciation, alternative accounts have been provided to explain why early bilinguals are more likely than late bilinguals to perform accurately in their respective L2’s. Flege’s (1995) Speech Learning Model postulates, first, that in order for a new phonetic category to be established for an L2 sound the learner must be able to discern the difference between L1 and L2 sounds. Second, the greater the perceived distance between the existing L1 sound and the new L2 sound, the more likely it is that the difference between the two sounds will be noticed by the learner. Lastly, as the age of the learner increases, the likelihood that the differences between L1 and L2 sounds and, more significant to the present study, the likelihood that contrastive sounds in the L2 that are non-contrastive in the L1 will be discerned, decreases. This implies that Japanese 12 year olds should be better able to perceive the difference between English /r/ and /l/, and thereby construct a separate L2 liquid consonant category, than Japanese adults. According to Flege, it is not passing a “critical period” for speech learning that causes accented speech in the L2 but instead the older the learner gets the more developed their L1 sound system becomes, which subsequently influences or interferes with the emerging second language system to a greater extent. Specifically, as L1 categories become more rigid and fixed with age they tend to block the formation of new L2 categories, resulting in a noticeable foreign accent in the L2.

Another explanation offered to explain the effects of age on L2 acquisition deals with the differences in the amount and types of input that early and late bilinguals usually
receive. Flege and Liu (1999) found early Native Korean speaking bilinguals living in
the U.S. were more likely to use English whereas late bilinguals, here defined as those
learners having age of arrivals from 13-22 years, were more likely to use Korean and
English equally to communicate. In this case it seems that younger learners may in
general receive more input in the second language when compared to late bilinguals in an
immersion setting. For example, young children are usually attending schools where they
must frequently interact with native speakers; this type of environment may also increase
the learners’ motivation to integrate and learn the language. Adult second language
learners on the other hand tend to interact more frequently with speakers of their native
language at work or at home and consequently may not receive the second language input
necessary to move beyond a certain point in their L2 development. Flege (2001) suggests
that, “both a relatively short length of residence and an infrequent use of the L2 might be
expected to adversely affect L2 learning by late bilinguals.” Regardless of the
underlying causes of the critical period, it is obvious that L2 speech learning and
particularly the pronunciation of individual segments are influenced by maturational
constraints which can be applied to the participants in this study.

4.3 Language Background

It is generally accepted that adults who are learning a second language often
produce errors when they are speaking in the L2. The errors that they produce are
manifested in various detectable ways, including a distinguishable foreign accent and the
use of nonnative grammars. The errors that second language learners produce are often
described as a result of a process where, in the case of pronunciation, the sound system of
the L1 is transferred into the L2. Errors are the result of negative transfer which occurs
when there are major differences between the L1 and L2 systems. Positive transfer can also occur if both language systems are sufficiently similar that no new forms need to be acquired and first language structures are similar to equivalent structures in the L2. For example, Native Spanish speakers learning Japanese as a second language may take a limited amount of time to detect that it is permissible to drop the topic/pronouns in Japanese sentences similar to what is allowed in Spanish. However, for Native Spanish speakers learning English it may take longer to learn that deleting pronouns is only possible in very limited circumstances.

Native Japanese speakers who are learning English as a second language in adulthood have a difficult time making the distinction between English /t/ and /l/ in both perception and production tasks. This difficulty is often described as being a result of the lack of a distinctive contrast between liquid phonemes in Japanese. Japanese phonology differs from English in that there is only a single liquid phoneme /l/ which has been described as fitting the criteria of a flap which most closely resembles the similarly flapped English phonemes /t/ and /d/ (Vance 1987). According to Flege (1995), the Japanese /l/ sound, which is the Japanese liquid equivalent of English liquid phonemes /t/ and /d/, is interesting because it occupies, “a position in phonological space that is somewhere between English /l/, /t/ and /d/ (and possibly /w/).” One of the problems that Japanese adults have when learning English is that they must learn to perceive and produce a new set of contrasting liquid phonemes which have differing degrees of dissimilarity to the Japanese liquid /l/. In addition learners tend to confuse both English /t/ and /l/ sounds and substitute the native approximate sound for both.
However, the correct production and perception of /\i/ and /\l/ is not beyond the grasp of Japanese adult learners. Studies investigating the perception and production of English /\i/ and /\l/ by Native Japanese adults living in the U.S. have shown that Japanese learners with large amounts of English conversation experience with native English speakers can achieve high levels of accuracy regarding both production (Flege 1995) and perception (Miyawaki et al. 1975, Mackain, Best and Strange 1981) of /\i/ and /\l/. The Japanese learners in the present study also demonstrated instances of near-native like pronunciation on English liquid sounds after only a short period of stay in the U.S. The next section describes the experiment designed to test pronunciation improvement over the course of one semester.

5. Experiment Design

The following experiment is based on a longitudinal design intended to measure the effects of social contact on improvement in pronunciation accuracy over the course of one academic semester (approximately four months). In order to test my first hypothesis, that amount of social contact will have a positive effect on pronunciation of /\i/ and /\l/, first, I designed a survey that would measure the amount of contact that learners were engaging in. The next step was to design a pronunciation task that would effectively take a ‘snapshot’ of individual learners’ /\i/ and /\l/ pronunciation accuracy at times 1 and 2, at the beginning and end of the academic semester. I also had to design a native speaker judgment task wherein native English speakers would be able to judge the pronunciation accuracy of the Japanese participants. In order to test my second hypothesis, that learner motivation and attitudes played an important causative role in the amount of contact that
is eventually sought out by second language learners, I had to incorporate into the study an instrument that could reliably measure factors like learner attitude and motivation (which are notoriously hard to measure).

5.1 Participants

The participants in this study were ten Native Japanese undergraduate students enrolled at the University of Montana during fall semester 2005. Japanese students were initially selected as a matter of convenience since the majority of the international students studying at the University of Montana who are enrolled in English as a Second Language classes are Japanese. The participants ranged in age from 19 to 39 years old. Eight of the participants were female and two were male. All of the participants in this study were matriculated students at the University of Montana enrolled in English as an Academic Second Language (EASL) courses in order to fulfill the universities academic support requirement for international students. The EASL program followed a communicative approach to language teaching with a focus on content based instruction. The classes did not provide any explicit pronunciation training; nor did it focus on differences between Japanese/English speech sounds. It is important that none of the participants in this study had received or were receiving explicit pronunciation training because the goal of this project was to measure the effects of out of class contact on pronunciation learning without interference from the effects of formal instruction.

The participants TOEFL scores ranged from 450-550 (written test score). The participants reported that they had received between 6-9 years of English instruction in their home country before studying abroad. All of the participants had begun learning
English as a foreign language in junior high school or high school in Japan. Even though their first exposure to English as a foreign language varied, I assume, first, all participants began learning English near the end of the critical period, and second, their L1 Japanese sound systems had fully developed by the time they began learning English. At the time the study was conducted the participants had spent between 1 to 28 months living in the United States.

5.2 Social Contact Survey

The social contact survey was administered once at the beginning of the project to assess the learner’s amount of social contact with English speakers outside the language classroom as well as to measure learner attitudes and orientations towards studying English and the target language culture in general. The survey (see Appendix 1) itself is a self-report questionnaire composed of seventeen questions divided into three parts designed to determine: (1) the amount of time the learner spends using English to communicate; (2) the learner’s attitude towards using English in everyday situations; (3) the learner’s motivations for learning English and whether their orientation is an integrative or instrumental one. In addition, the survey also gathers general information on: (1) how many years of formal English language instruction the learner has previously had in their home country; (2) the amount of time the learner has spent living in the United States or other English-speaking countries; (3) the learner’s current living situation (dormitory, home-stay etc.).

The first five questions on the survey were intended to gather general information on the amount of English language contact the learner is receiving outside of the classroom. In this section the participant was asked to provide the number of years of
English instruction that they have received up to that point as well as how long they have been living in the United States. This information is particularly important since it could be the case that disproportional amounts of formal English instruction might have an effect on pronunciation accuracy, especially if pronunciation was the primary focus of instruction. The participant was then asked to rate their relationships with native English speaking friends on a Likert scale of 1-5: a rating of 1 signifying a casual acquaintance and a rating of 5 signifying a very close friend or partner. The participant was then asked to rate how often they meet with their English speaking friends as well as how often they speak English with both native speakers, speakers of their first language and speakers of languages other than their native language and English.

A high social contact score signifies a learner who has very close English speaking friends whom they meet with almost everyday. In addition they try to speak English with other native speakers of their first language. A low contact score signifies a learner who has few English speaking friends and speaks their Native language more often than English outside of the classroom.

The next section of the survey is comprised of six questions designed to get a glimpse at the learner’s attitude towards learning English, their attitude towards American culture and their attitude towards improvement. For the pilot study, this section was the exclusive measure of the participant’s attitude towards both the learning situation and the target language culture. In the present study this section was supplemented with additional questions that will be explored in the next section of this paper.

Freed’s (1990) study on the effects of out-of-class contact on oral proficiency and grammatical achievement found that learner attitudes toward correctness were not able to
predict the amount or type of contact that learners engaged in outside of class. In this study, I have taken a slightly different approach to the way in which learner attitudes are related to social interaction. In this study, I am relying on definitions of attitude that were previously examined in studies done by Gardner (2001) and Dornyei (2003), namely attitude toward the learning situation and toward the target language culture in general.

On this portion of the survey, learners were asked to rate how much they are enjoying their stay in the US, how much they enjoy speaking English and how much they think that their English skills have improved since their arrival in the U.S. on a similar Likert scale of 1-5, with 1 being ‘very little’ and 5 being ‘very much’. For the purposes of this study, a learner with a “positive attitude” would be described as an individual who is enjoying their stay in the U.S. very much, enjoys communicating in English and feels that their English has improved since their arrival.

The final section deals with the participants’ motivations for learning English in the US. The purpose of this section was to aid in making a distinction between two different types of learners, those who are instrumentally oriented, for example those who need to learn English for work in their home country but are not required to be fluent or speak it on a daily basis, and those who are integratively oriented and plan on using the language to become a functional part of a Native English speaking community.

The results of the pilot study suggested that the questions used to measure learner attitude and motivation in the original survey were not able to provide a sufficient measure of learner motivation. In fact, all of the participants in the pilot study reported that they were learning English for instrumental reasons. The most popular response was that English was going to be helpful in getting a job after they returned to Japan. Even
though it became obvious that second language learners who are studying abroad have primarily instrumental motivations for learning English, it seemed to me that one could still measure the degree to which those same learners planned on integrating during their extended stay in the United States. What I needed was a tool that could measure second language learner motivation on a continuum, with learners who had no motivation at all on one extreme and fully integrative learners on the other, so that I could determine the strength of motivation of the participants in my study relative to one another. Instead of starting from scratch I chose to use a version of the Attitude Motivation Test Battery developed by Gardner and Smythe (1975), which I then modified to focus primarily on measuring integrative motivation and attitudes towards the language situation (i.e., the two variables that Gardner claims have a direct effect on motivation and an indirect effect on language proficiency).

5.3 The Attitude/Motivation Test Battery

The attitude/motivation test battery (AMTB) was designed to assess, “the major affective factors involved in learning a second language” (Gardner 2001). Although the AMTB was originally designed to assess the affective states of English-speaking Canadians learning French in Canada, Gardner does not specify that the survey can only be accurate in measuring motivation or predicting language proficiency in one particular setting. To my knowledge, this is the first time the survey has been used to illuminate the attitudes and motivations of Japanese learners of English in a study-abroad context.

The AMTB is a self-report survey composed of eleven sections. The questions consist of positively or negatively worded items that learners are asked to respond to by circling a single number on a 5 point Likert scale. For the purposes of this study I
selected the following sections to administer to the participants as an attitude/motivation survey: attitudes towards Americans, interest in foreign languages, integrative orientation, instrumental orientation, motivational intensity, desire to learn English, attitudes toward learning English and English use anxiety. The three scales I chose not to include on my version of the survey were attitudes towards the English teacher, attitudes towards the English course and English class anxiety. It should be apparent that I did not include these three measures because they do not fit within the scope of my study, namely, they do not deal with out-of-class contact.

5.4 Liquid Production and Recognitions Tasks

The liquid production task was used to determine the Native Japanese participant’s ability to produce word initial occurring English liquids /\l/ and /\r/. Word initial consonants were initially chosen because word initial occurrences yielded an intermediate level of production errors compared to word final and consonant cluster occurrences in previous studies where native English speakers were asked to rate non-native speech data (Sheldon & Strange 1982, Masuda & Miyashita 2003). Thus, production of word initial consonants seemed to be the best fit for the high intermediate to advanced level learners in this study. The production task was administered in the form of a word list comprised of 23 English words with word initial occurring liquids /\l/ and /\r/. Minimal pairs were used whenever possible (see Appendix 3). The participants were asked to read the list of words aloud into a handheld microphone connected to a computer running sound recording/editing software (Cakewalk Music Creator). Their responses were recorded and later arranged into files representing individual participant’s pronunciation data. In order to reduce possible lexical familiarity effects in the
recognition task, individual sound files were then edited to isolate only the onset and nucleus of the first syllable (CV) containing the target phoneme. Once edited the sound files were each assigned a code so they could be easily identified by the researcher but not by the native English speaking raters.

The panel that eventually rated the pronunciation accuracy of the Japanese participants was composed of twelve native English speakers. The panelists were all native English speaking students enrolled in a linguistics class at the University of Montana. Since the judgment task was performed early in the semester the raters did not yet have an in-depth knowledge of phonological processes. In addition, all of the raters reported not having had much experience listening to Japanese accented speech. Each rater was given a worksheet which provided four choices of sounds represented by the letters r, l, d and w. These four sound options were selected based on prior evidence which suggested that if the participants substituted their LI Japanese flap for the English /l/ and /l/ it might sound like either /d/ or /w/ to the untrained native English speaking listener. In order to make the task easier for the judges, a simple HTML program was designed which presented the native speaker judges with all 460 sound files on a computer monitor. When the rater clicked on an individual sound file with the mouse it was played back for them. The raters could listen to the individual sounds as many times as they liked. The panelists were then asked to circle the letter on the worksheet that best represented the sound that they heard. The results from each panelist were combined and the number of misidentified sounds was totaled for each Native Japanese participant, resulting in a single pronunciation accuracy percent score for each learner at time one and time two.
6. Results

6.1 Research Questions

The fundamental question of this study was whether Japanese learners who had more informal contact with the target language group while studying abroad would exhibit more substantial gains in improvement on the accurate production of English /ʌ/ and /I/ than those learners with little or no contact with the target language group.

Additional questions were also addressed in an attempt to account for factors like learner motivation and attitudes that could have an influence on the amount of contact that learners choose to engage in outside of the language classroom.

Figure 6.1 Combined Graph

The Combined Graph in Figure 6.1 provides a visual representation of the participants pronunciation improvement between times 1 and 2, represented by the bar graph, as well as percent social contact and motivation scores which are represented by the line graphs. The combined graph is organized by average pronunciation score from
lowest to highest, starting with the lowest scorer (participant I) on the left most side of the x axis.

6.2 Data Analysis

In this study four sets of variables were compared; length of residence and pronunciation improvement, learner attitude and motivation and pronunciation improvement, learner attitude/motivation and social contact, and social contact and pronunciation improvement. To illuminate the relationship between different pairs of variables, a basic statistical analysis of the data was performed.

First, raw scores measuring social contact, attitude and pronunciation accuracy were converted to percent scores. The example provided below gives a step-by-step description of the process comparing average pronunciation and motivation scores as variables. The scores that I have used here are provided as an example and were not a part of the final results.

Example:

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pronunciation Score (Average)</th>
<th>Motivation Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>87%</td>
<td>81%</td>
</tr>
<tr>
<td>B</td>
<td>98%</td>
<td>92%</td>
</tr>
<tr>
<td>C</td>
<td>95%</td>
<td>92%</td>
</tr>
<tr>
<td>D</td>
<td>81%</td>
<td>83%</td>
</tr>
<tr>
<td>E</td>
<td>98%</td>
<td>88%</td>
</tr>
<tr>
<td>F</td>
<td>58%</td>
<td>76%</td>
</tr>
<tr>
<td>G</td>
<td>90%</td>
<td>75%</td>
</tr>
<tr>
<td>H</td>
<td>94%</td>
<td>76%</td>
</tr>
<tr>
<td>I</td>
<td>52%</td>
<td>87%</td>
</tr>
</tbody>
</table>
In order to determine the strength of association between the two variables being compared a Pearson correlation was run for each set of scores to determine the correlation coefficient, $r_{xy}$.

$$r_{x \text{ (pronunciation)} \ y \text{ (motivation)}} = .11$$

The $r^2$ value for each set was then calculated.

$$r^2 = .0121 \text{ or } 1.2\%$$

Then $r^2$ was converted into a percentage in order to better illustrate the amount of variance that occurred between the explanatory and dependent variables.

### 6.3 Findings

In order to protect the identity of the individual participants, all names have been replaced with capital letters (A-J) which will be used consistently to signify individuals throughout the results and discussion section. Figure 6.2 shows the percent scores of all ten participants on pronunciation tasks administered at both the beginning and end of the academic semester. The difference between the two scores provided a pronunciation improvement score used to compare the participant's pronunciation improvement with the other variables of social contact, motivation and length of residence using the process explained in section 6.1. In Figure 6.2 the participants are divided into two groups, those whose pronunciation improved and those whose pronunciation did not improve over the course of the semester.
**Figure 6.2**

<table>
<thead>
<tr>
<th>Participants whose pronunciation improved</th>
<th>Pronunciation % correct at Time 1</th>
<th>Pronunciation % correct at Time 2</th>
<th>Pronunciation Improvement</th>
<th>Social Contact Score</th>
<th>Motivation Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>87%</td>
<td>93%</td>
<td>6%</td>
<td>68%</td>
<td>75%</td>
</tr>
<tr>
<td>H</td>
<td>91%</td>
<td>97%</td>
<td>6%</td>
<td>80%</td>
<td>76%</td>
</tr>
<tr>
<td>B</td>
<td>97%</td>
<td>99%</td>
<td>2%</td>
<td>80%</td>
<td>92%</td>
</tr>
<tr>
<td>E</td>
<td>97%</td>
<td>98%</td>
<td>1%</td>
<td>64%</td>
<td>88%</td>
</tr>
<tr>
<td>Participants who did not improve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>81%</td>
<td>80%</td>
<td>-1%</td>
<td>72%</td>
<td>83%</td>
</tr>
<tr>
<td>J</td>
<td>99%</td>
<td>97%</td>
<td>-2%</td>
<td>68%</td>
<td>84%</td>
</tr>
<tr>
<td>C</td>
<td>98%</td>
<td>92%</td>
<td>-6%</td>
<td>52%</td>
<td>92%</td>
</tr>
<tr>
<td>I</td>
<td>54%</td>
<td>49%</td>
<td>-5%</td>
<td>68%</td>
<td>87%</td>
</tr>
<tr>
<td>A</td>
<td>91%</td>
<td>83%</td>
<td>-8%</td>
<td>60%</td>
<td>81%</td>
</tr>
<tr>
<td>F</td>
<td>69%</td>
<td>47%</td>
<td>-22%</td>
<td>52%</td>
<td>76%</td>
</tr>
</tbody>
</table>

It is important to notice the individual pronunciation scores are fairly high for the majority of the learners in this study. In fact, some of the scores are close to perfect.

Since most of the participants had relatively short lengths of residence in the U.S. and no other reported experience in similar English immersion settings, it seems possible that some of the participants were able pronounce the English liquid contrast fairly accurately before their arrival in the U.S. However, high pronunciation scores exhibited in the data must be qualified with a few caveats. First, the pronunciation task only tested English liquids pronunciation in the word initial environment; it did not test pronunciation accuracy on liquids which occur word finally, medially or in consonant clusters.

Previous studies done (Mochizuki 1981, Matsuda 2000) measuring Japanese learners improvement on English /ʃ/ and /l/ in different phonological environments similarly show near native like production of /ʃ/ and /l/ when they occur word initially.
Due to the nature of the pronunciation task it could also be argued that the anxiety level and processing load of the learners was greatly reduced because they were only asked to attend to the form of the words and not use them in a conversation where meaning would be attached. Even though it is not within the scope of the present study, it would be interesting to see if the participants pronunciation decreased as a result of using words with initial occurring /I/ and /l/ in a more realistic communicative type task. If pronunciation accuracy decreased in this situation it could signify that native like accuracy is not as likely when the L2 is being used to communicate with native speakers.

In Figure 6.3 the results of the correlation procedure are provided for the individual sets of variables that are being considered in this study. The results of the correlation procedure show the highest correlation (58%) to exist between the variables of Social Contact and Pronunciation Accuracy. Even though correlation does not measure the causal direction of the relationship between these two variables, (i.e., we don’t know which variable is actually causing the other), it does indicate that in almost sixty percent of the instances in the data, amount of social contact had an influence on pronunciation improvement or vice versa. I interpret the overlap as limited quantitative support for my first hypothesis. Even though 58% of the variability in pronunciation improvement scores is predicted by amount of social contact the remaining 42% of the pronunciation improvement scores must be explained by some other intervening variable or set of variables. The remaining three sets of variables being compared in this study either show minimal correlations with each other or exhibit no correlation at all. The implications of these results will be addressed further in the discussion section of this thesis.
7. Discussion
In this section the results are reported in response to the individual questions raised by both hypothesis 1 and 2. Additional extended discussion is also provided on the effects of length of residence on pronunciation improvement.

7.1 The Effects of Social Contact on Pronunciation Improvement
My first hypothesis claims that the amount of social contact that individual L2 learners engage in will have a direct influence on their pronunciation improvement. The results of the experiment show that social contact does have an effect on improvement in pronunciation accuracy but is not the sole factor causing the variability in pronunciation improvement scores. An ideal situation would be to provide instances in the data where the participants who had high levels of social contact exhibited equally high levels in pronunciation improvement. In contrast, participants with below average social contact scores would show similarly low scores on their /l/ and /j/ production accuracy. Although the present data does not conform to such neat categories, there do seem to be distinct patterns in the collected data which can be utilized to make certain generalizations in support of my hypothesis.
The first observation, which provides indirect support of my first hypothesis, is that the learners whose pronunciation accuracy deteriorated the most over the course of the experiment had correspondingly low levels of contact with native English speakers. In fact the top three participants with the most loss of accuracy also had the lowest social contact scores in the group. Participants F, A and C who had pronunciation improvement scores of -22%, -8% and -6% respectively, also exhibited social contact scores below the 60% mark. Importantly, none of the participants in the experiment who showed gains in pronunciation accuracy had social contact scores below 60%. This group of low contact learners all reported that even though they attended university classes regularly, they had no Native English speaking friends whom they met with more than twice a month. The three participants in this group also reported that they spoke English mostly with speakers of their native language but not with native English speakers. These particular learners may not have been more introverted or shy than the others; rather (perhaps due to
circumstances such as living arrangements) they mainly held conversations with speakers of their native language and/or felt most comfortable interacting with their native language group. In this case it seems that the learner's lack of interaction in the L2 with native English speakers in combination with other factors that were not addressed in the present study played a role in the participants' ability to pronounce English /a/ and /l/ accurately. Although this study only attempted to measure the effects of social contact, attitude and motivation on learner performance, other possibilities should also be considered for further research. One possibility is that the participant's lack of formal pronunciation instruction in English and the subsequent lack of explicit negative feedback contributed to their backsliding. Even though all of the participants were enrolled in academic English courses for the duration of the study, they were not receiving any explicit pronunciation training. Although large amounts of social contact were sufficient for some learners to improve their pronunciation in English, others may need a more structured environment in order to help reset their first language speech parameters. Another possibility that could be explored is whether heavy use of the learners' L1 (first language) Japanese contributed to the learners' loss of proficiency as suggested by Flege (2001). It is also quite possible that the learners' lack of pronunciation accuracy further discouraged them from interacting in English out of fear of being misunderstood.

The group of participants who showed improvement in pronunciation was a little bit more difficult to categorize. Two of the participants in this group (participants H and B) had the highest social contact scores in the group, while the other two participants (participants G and E) who exhibited improvement had contact scores (68% and 64%)
which were close to the average score for the whole group (mean group score of 66.4%). All of the participants in the improvement group reported they had close native English speaking friends or roommates whom they met with at least once a week. These results similarly suggest that high levels of social contact are important but may not be necessary for all learners. In addition, the effectiveness of social contact in promoting acquisition, as Freed (1990) suggests, may depend upon the types of activities learners are engaged in outside of class in combination with individual student proficiency levels. The survey I administered for this study was not designed to measure the types or the quality of the interactions that the participants engaged in. It may be the case that the learners in this study who reported average amounts of social contact were using English in the particular situations that are most effective in promoting pronunciation learning. Even though the particular contact situations which have the most effect on language learning are hard to define, in general they could be characterized as situations where the learner is able to use the L2 in meaningful interactions with native speakers. Finding out what types of non-native/native speaker interactions are most effective in promoting pronunciation learning and why they are effective is a topic that could be investigated in further studies.

It also appears from the data that social contact may not be sufficient in itself to increase pronunciation accuracy. For example, participant D had an above average social contact score of 72%, the third highest social contact score of the group, yet participant D’s pronunciation accuracy score decreased over the course of the semester. Participant D’s pronunciation score not being affected by amount of contact might indicate that not all learners respond the same to increased opportunities to use English to communicate.
Learner motivation and attitude, which we will explore further in the following section, may be the additional factors responsible for determining the learners' response when presented with the choice to use English to interact with others.

7.2 The Effects of Learner Motivation on Pronunciation Improvement

My second hypothesis predicts that learner motivation for studying a second language in combination with their attitude towards studying the language and towards the target language culture will have an impact on the amount of social contact that the learner eventually engages in outside of class. My own motivation for incorporating this type of hypothesis in my study was to try to account for other affective factors which might have a causal connection with the learner's decision to seek contact and use the target language on a regular basis. This hypothesis was rooted in the predictions of both of the previously discussed social models of L2 acquisition as well as prior studies conducted on the psychological dimensions of second language acquisition. Gardner's model in particular stood out because it addressed the broadest range of possible contributing factors and posited a causal chain of attitudes, orientations and motivation which resulted in the ultimate goal of L2 learning. The measures of learner attitudes and motivation incorporated into the AMTB, as well as the distinction made between integrative and instrumental orientations that are utilized in this study, are taken wholesale from Gardner's research. In order to test my second hypothesis I had to compare two sets of variables. First, I compared motivation with pronunciation improvement to see whether high amounts of motivation on the part of the learner were sufficient to promote increased pronunciation accuracy over the course of the study.
comparison is important because it could be that motivation and not social contact was directly responsible for the improvement exhibited by certain participants in this study. Second, I compared motivation with social contact to see whether social contact was a necessary intermediate step in the process of learning how to pronounce English /ʌ/ and /l/ with native like accuracy.

**Figure 7.2.1 Motivation/Pronunciation Improvement**

The results of the first comparison, represented in figure 7.2.1, do not show even a slight correlation existing between the variables of motivation and pronunciation improvement. What is interesting is that the motivation scores for all participants are all fairly high, all at or above 75%, which would signify that the participants in this study were highly motivated learners with positive attitudes towards learning English and towards American culture in general. The most disturbing trend is that some of the highest motivated learners are also the lowest scorers in pronunciation improvement.
These findings seem to be contrary to what Gardner’s hypothesis might predict, that motivation will have a direct effect on second language proficiency.

We can conclude based on these results that motivation does not have a direct effect on pronunciation achievement within the subset of Japanese learners studying English abroad. Another conclusion that seems evident is that being motivated and having a positive attitude are not sufficient to overcome a lack of social contact and infrequent use of the L2 to communicate. An in depth appraisal of the particular types of learners who were involved in this project might be necessary to qualify the apparent contradictions present in the data.

Freed (1990) concludes in her study on the effects of motivation and interaction on L2 proficiency, “[w]e suggest the possibility that this self-selected group of students, who choose to study abroad, might fall into the upper range of a motivation continuum. That is, these students may have been more motivated generally than the average student population.” Indeed it may be the case that second language learners who choose to study the L2 in an immersion environment already have a high level of motivation compared to those who are learning an L2 in their home country. The data shows that high motivation is indeed a trademark of the study abroad L2 learner. All of the participants in the present study reported that they had instrumental orientations for learning the language but that their attitudes were good and their motivations strong. According to Gardner’s model the participants in this study would be situated near but not quite at the top of a motivation continuum since they lacked the drive to use the language for integrative purposes. However, Gardner himself admits that it is possible for strong instrumental motivations to have the same effect as integrative motives on
language achievement. Different groups of learners studying the L2 in their home country, studying the L2 abroad for instrumental purposes and studying the L2 for integrative purposes could theoretically all have corresponding levels of motivation. In order to actually test the impact of motivation on acquiring second language skills one would have to compare exemplars from several of these groups in order to attain any sort of definitive judgment on the role of affective factors on achievement. Since the participants in the present study all seem to have similar motivations and attitudes it would be difficult to come to a conclusion on the effects that their motivation had on pronunciation improvement without having other groups to compare them to.

Another way that these results could be explained is by the limitations inherent in the research method used to collect the data, in particular the limitations of the self-report questionnaire that was administered to the participants in order to elicit attitude/motivation information. Oller (1977) suggests that when responding to self-report surveys individuals tend to exaggerate their behavior in order to give themselves more prestige or give answers that they feel would be desirable to the experimenter. It might be the case that since I administered the survey in class the students felt pressured to provide answers that I would view as positive.

It also could be the case that additional affective factors unaccounted for in this study, like learner anxiety or language aptitude, were influencing the decisions that the participant made with regard to engaging in social contact. The decision not to include language aptitude in the current study was based on the findings of Freed’s (1990) study which investigated the link between aptitude scores, measured by the MLAT (Modern
Language Aptitude Test), and out-of-class contact. No correlation was found between the two variables in that study and the variable of aptitude was left out in further analyses.

**Figure 7.2.2 Motivation/Social Contact**

The lack of a correlation approaching significance is also exhibited in the comparison of the variables of motivation and social contact represented in figure 7.2.2. Based on these results we can conclude that hypothesis 2 is unsupported by the evidence gathered from this study. To me it seems counter-intuitive that learner motivation has a negligible impact on social contact but the results do agree with previous studies (Freed 1990) which tested similar relationships and derived similar results showing no positive relationship to exist between learner motivation and likelihood of pursuing informal contact with target language speakers. The results show that having positive attitudes and really believing that you want to study an L2 is not enough to promote the kind of behaviors that result in more contact, nor does it appear to be sufficient to overcome cognitive constraints which may limit the adult second language learner’s ability to process novel L2 sounds. Likewise, some learners with high amounts of contact, at least
in the study abroad situation being examined here, seem to have gotten 'lucky' by being placed in high contact situations arbitrarily (i.e. living with native English speaking roommates in the dorms).

7.3 The Effects of Length of Residence on Pronunciation Improvement

Time in the target language community has in the past been found to correlate with increased accuracy on segmental phonetic perception tasks. Flege and Liu's (2001) study involving two groups of Chinese students living in the U.S. for variable lengths of time (2.5 vs. 7.3 years), found that adult learners performance on comprehension and L2 perception tasks improved as their length of residence in the target language community increased. However, Flege and Liu did not consider the amount or type of L2 input that their participants received while living in the United States.

The results of my study exhibited no correlation when length of residence was compared with pronunciation improvement scores (fig. 6.2). The results seem to suggest that in previous studies it may not have been the actual length of residence that caused an increase in L2 accuracy but instead the amount of contact that the learners had accumulated over their years of residence. The results show instances of learners who have spent a comparatively long time in the target language community but with very small amounts of target language contact having lower levels of pronunciation accuracy. The relatively short lengths of residence (under 3 years) of all the participants in my study may have also skewed the results as it is quite possible that length of residence only begins to influence accuracy after five or even ten year period of residence, similar to the participants in Flege and Liu's study.
8. Conclusion

From the results of this study two conclusions seem most obvious to me. First, my second hypothesis, which states that learner motivation and attitude have a direct impact on the amount of contact second language learners seek out, has been falsified by the data. Instead, motivation/attitude as measured by the AMTB does not have a significant effect on amount of social contact nor does it have an effect on pronunciation accuracy directly. Much of the research design in this study related to affective psychological factors was based on previous models developed by Gardner and Schumann. These models stipulate that motivation and psychological/social distance are the main factors inhibiting contact in one case and having a direct impact on learning in the other. However, in the present study, set within the particular context of study abroad, affective factors did not prove to be significant contributing factors in the Japanese learners’ decision to engage in more contact with native English speakers.

My first hypothesis, which constitutes the central theme of this thesis, predicts that the amount of social contact second language learners’ receive will have a positive effect on L2 proficiency. More specifically, learners with high levels of contact should show more improvement in particular language skills over the course of the semester than those learners with little or no contact with native English speakers. This hypothesis was supported by a 58% correlation found between the variables of amount of social contact and pronunciation improvement over the course of one semester. However, the results also tell us that social contact by itself is not the sole variable responsible for the pronunciation improvement exhibited in the participants in this study. Nearly half of the variability in improvement scores could have been caused by variables that were
unaccounted for in this study. It should be the goal of further research to measure more precisely the types of contact and motivations that have an impact on improvement as well as determining what other factors are responsible for pronunciation improvement in the absence of formal pronunciation instruction, and perhaps more importantly if specific types of instruction in combination with increased opportunity to use the L2 outside of class would be more effective means for improving pronunciation accuracy in study abroad programs.


Appendix 1: Social Contact Survey

Home Country: ________________________________

First Language: ________________________________

1. How long have you been in the United States?

2. How many years of classroom English instruction have you completed?
   - In elementary school: ________________________
   - In junior high school: _________________________
   - In high school: _____________________________
   - In college: ________________________________

3. Describe your current living situation.
   a) Do you live in a dormitory? Yes / No
   b) Home stay? Yes / No
   c) Do you have American or foreign roommates?

4. Do you have any native English speaking friends? Yes / No
   If Yes,
   A) How close are they to you? (Acquaintance) 1 2 3 4 5 (very close friend)
   B) How often do you meet with them? (Circle one)
      a) everyday b) 4-5 days a week c) 2-3 times a week d) once a week
      e) twice a month f) once a month g) other _______________

5. Rate how often you speak English with:
   a) Native English Speakers: (very little) 1 2 3 4 5 (very much)
   b) Speakers of your first language: (very little) 1 2 3 4 5 (very much)
   c) Speakers of languages other than your native language and English:
      (very little) 1 2 3 4 5 (very much)

6. Are you enjoying your stay in the United States? (very little) 1 2 3 4 5 (very much)

7. Do you enjoy speaking English here? (very little) 1 2 3 4 5 (very much)

8. In your opinion, how much has your English improved since you began your stay in the United States?

9. What are some things that you enjoy doing here? Please describe.

10. Is there anything that you dislike about your experience in the United States? Please explain.

11. Do you feel that it is hard to make American friends? Please explain.

12. Why are you studying English? Please explain.

13. What do you plan to use English for in the future?

14. Do you feel embarrassed when you are speaking English? Please explain.

15. Do you think that others judge you based on your ability to communicate in English? Please explain.

16. Do your American friends encourage/discourage you to speak English?

17. Do your friends who speak your native language encourage/discourage you to speak English?
Appendix 2: Attitude/Motivation Test Battery (Modified)

Following are a number of statements with which some people agree and others disagree. There are no right or wrong answers since many people have different opinions. We would like you to indicate your opinion about each statement by circling the alternative below it which best indicates the extent to which you disagree or agree with that statement.

Please give your immediate reactions to each of the following items. Don't waste time thinking about each statement. Give your immediate feeling after reading each statement. On the other hand, please do not be careless, as it is important that we obtain your true feelings.

Americans are a very sociable, warm-hearted and creative people.

1  2  3  4  5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I would like to know more Americans.

1  2  3  4  5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

The more I get to know Americans, the more I want to be fluent in their language.

1  2  3  4  5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

If I were visiting a foreign country I would like to be able to speak the language of the people.

1  2  3  4  5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Even though Japan is relatively far from countries speaking other languages, it is important for Japanese to learn foreign languages.

1  2  3  4  5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I wish I could speak another language perfectly.

1  2  3  4  5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I want to read the literature of a foreign language in the original language rather than a translation.
1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I often wish I could read newspapers and magazines in another language.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I would really like to learn a lot of foreign languages.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I would study a foreign language in school even if it were not required.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I enjoy meeting and listening to people who speak other languages.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Studying a foreign language is an enjoyable experience.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Learning English is really great.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I really enjoy learning English.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I plan to learn as much English as possible.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree
I hate English.

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<th>Undecided</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
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I would rather spend my time on subjects other than English.

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Learning English is a waste of time.

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I think that learning English is dull.

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When I leave school, I shall give up the study of English entirely because I am not interested in it.

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<th>Somewhat agree</th>
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Studying English can be important to me because it will allow me to be more at ease with fellow Americans who speak English.

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<th>Strongly disagree</th>
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<th>Undecided</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
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Studying English can be important for me because it will allow me to meet and converse with more and varied people.

<table>
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<th>Strongly disagree</th>
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<th>Undecided</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
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Studying English can be important for me because it will enable me to better understand and appreciate American art and literature.

<table>
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<th>Strongly disagree</th>
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<th>Somewhat agree</th>
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Studying English can be important for me because I will be able to participate more freely in the activities of other cultural groups.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Studying English can be important for me only because I'll need it for my future career.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Studying English can be important for me because it will make me a more knowledgeable person.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Studying English can be important to me because I think it will someday be useful in getting a good job.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

Studying English can be important for me because other people will respect me more if I have knowledge of a foreign language.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

It embarrasses me to volunteer answers in our English class.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I never feel sure of myself when I am speaking in our English class.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree

I always feel that the other students speak English better than I do.

1 2 3 4 5
Strongly disagree Somewhat disagree Undecided Somewhat agree Strongly agree
I get nervous and confused when I am speaking in my English class.

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<tbody>
<tr>
<td>Strongly disagree</td>
<td>Somewhat disagree</td>
<td>Undecided</td>
<td>Somewhat agree</td>
<td>Strongly agree</td>
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</table>

Circle all that apply:

I am studying English because:

a) I think it will some day be useful in getting a good job.
b) I think it will help me to better understand American people and their way of life.
c) It will allow me to meet and converse with more and varied people.
d) Knowledge of two languages will make me a better educated person.

**Appendix 3: Pronunciation Task Word List**

1. Lamp
2. Low
3. Read
4. Rice
5. Liver
6. Loot
7. Rent
8. Lust
9. Raw
10. Look
11. Late
12. Royal
13. Lend
14. Row
15. Root

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16. Lice
17. River
18. Loyal
19. Ramp
20. Rate
21. Lead
22. Rust
23. Law