

Social Capital and Language Acquisition during Study Abroad

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Abstract

We study the role of social capital in language acquisition during study abroad. Using data collected from 204 participants in Japanese study abroad programs, we show that students who leverage social capital through bridging relationships feel they achieve higher levels of language improvement. Furthermore, an analysis of the topics participants discuss with locals suggests that there are significant differences between students who have a tendency to build close-knit networks and students who cast a broader net.

Keywords: Social Capital; Second Language Acquisition; Study Abroad.

Introduction

Research in second language acquisition during study abroad has dealt with a number of issues including language use, proficiency development (Badstübner & Ecke, 2009; Mendelson, 2004), and language socialization (Fraser, 2002; Campbell, 1996). Language socialization involves becoming integrated into a community that allows one to practice the second language in meaningful social contexts (Wang, 2010). Language socialization is a complex process affected by a range of variables, including motivation, attitudes, interlocutor attributes, and a range of other variables (Isabellí-García, 2006), and the few studies conducted to date suggest that socialization can affect language acquisition (Mendelson, 2004; Whitworth, 2006).

One particularly interesting measure of social networks, which has been popularized and aggressively pursued in the past couple of decades, is social capital (Coleman, 1988; Lin, 2001; Putnam, 2000). Unlike most other forms of capital that tend to emphasize what people *possess* individually, social capital is an inherently social measure that focuses on the *relationships* that exist among people. Indeed, social capital attempts to quantify the value of such relationships in achieving some individual or group benefit based on the resources present in the underlying network (Borgatti, Jones, & Everett, 1998; Adler & Kwon, 2002).

An analysis of language acquisition during study abroad from the social capital perspective is unprecedented within the existing body of second language acquisition and study abroad research. Although social capital might be more traditionally thought of by some as future employment opportunities or the capacity to secure social favors, an individual's ability to acquire and utilize social capital during study abroad would appear to be consequential in second language acquisition, primarily as a means of exposure to the second

language. From this, it is clear that an exploration of second language acquisition and study abroad in the context of social capital merits the critical consideration of those researching second language acquisition and language socialization. We present one such exploration here for a Japanese study abroad program involving over 200 participants.

The paper is organized as follows. We first provide a brief overview of our social capital framework and show how it is specialized to the context of our language acquisition during study abroad analysis. We then present our data and methodology, and show how a number of indicators such as perceived language proficiency and conversation topics vary based on students' social behavior. Finally, we conclude with a discussion of the novel insight into language acquisition provided by the social capital perspective.

Social Capital Framework

Space does not permit us to give a full account of our computational framework for social capital. We give only a brief description of its main components and state the simplifying assumptions we make to apply it here. Further details about the framework are in (Smith, Giraud-Carrier, & Purser, 2009; Smith & Giraud-Carrier, 2010).

Social capital is grounded in relationships, individuals' attributes, and available resources. To exploit this information, we find it useful to distinguish between two types of relationships among individuals, as follows.

- An *explicit* connection links one individual to another based on some purposive action (e.g., sending an email, visiting) or a well-defined relationship (e.g., being a friend of, collaborating with). Individuals thus linked are aware of the explicit connections among them.
- An *implicit* affinity connects individuals together based on loosely defined affinities, or inherent similarities, such as similar hobbies or shared interests. Individuals may not be aware of the similarities in attitudes and behaviors that exist among them.

We call *explicit social networks* (ESNs), social networks built from explicit connections and *implicit affinity networks* (IANs), social networks arising from implicit affinities (Smith, Giraud-Carrier, & Judkins, 2007). Social capital is naturally interested in implicit affinities, since it clearly has some relation to shared affiliations or activities among individuals (Belliveau, O'Reilly, & Wade, 1996). On the other

hand, social capital can really only accrue, or be realized, when individuals are aware of it, that is, when they establish explicit connections among themselves. It follows that *hybrid networks*, i.e., networks that include both implicit affinities and explicit connections, play a key role in the definition and analysis of social capital.

Note that in a strict sense, social capital is only realized once actions are taken and their result evidences the presence of said social capital. Hence, typical studies of social capital are retrospective. Within our framework, however, we wish to use the notion of social capital to reason about how one could leverage one's relations. For example, given that X and I are friends, that X is a headhunter and that I am looking for a job, I would probably want to ask X to help me find a job. While evidence of any social capital will truly become apparent only if and when X chooses to help me, it seems most reasonable for me to try to take advantage of my friendship with X . For simplicity here, we equate the presence of an explicit link with the presence of social capital.

We also find it useful to adopt Putnam's high-level dichotomy of social capital into bonding social capital and bridging social capital to provide a general characterization of individuals' (here, learners') behaviors (Putnam, 2000; Putnam & Feldstein, 2003). Bonding refers to the tendency that individuals may have to associate with others who are similar to them, leading to homogeneous groups. Bridging occurs when individuals associate with others who are not like them, leading to heterogeneous groups. The types of links connecting individuals give rise to bonding and/or bridging social capital, as follows.

1. Implicit affinities only. In this case, the individuals have much in common (e.g., similar occupation or hobbies) but they are unaware of it. If they were to connect explicitly, they would be bonding, but since they have not yet, we say that there is only potential for bonding social capital.
2. Implicit affinities and explicit connections. In this case, the potential for bonding social capital is now realized as similar individuals connect to one another explicitly.
3. No implicit affinities and no explicit connections. In this case, the individuals have nothing in common and they are unaware of each other. If they were to connect explicitly, they would be bridging, but since they have not yet, we say that there is only potential for bridging social capital.
4. No implicit affinities but explicit connections. In this case, the dissimilar individuals are now connected to one another (e.g., colleagues collaborating across disciplines or members of a church choir). Hence, we say that there is realized bridging social capital.

The foregoing treats affinities and explicit connections as aggregate binary entities that are either present or absent. In practice, of course, these links may exist with varying degrees of strength. For example, two individuals may have some

things in common and others not. Shared attributes, attitudes and behaviors represent opportunities for bonding, while differences among the same represent opportunities for bridging. Thus, there is generally both bonding and bridging social capital between individuals. Furthermore, while it seems appropriate for implicit affinities to be "undirected," since two people either share or do not share a specific affinity, it is not so for explicit edges. Indeed, it is clear that the value of some (explicit) relationships is not necessarily reciprocal and may vary among participants. For example, one person may consider another person as their best friend, while that other person may look at the first as only a good friend. Thus, our framework recognizes that the amount of social capital an individual i may realize from a relationship with another individual j is not predicated upon the value that i places in the relationship, but rather upon the value that j places in it. While i may think highly of that connection, for example in the context of obtaining a job reference from j , the reference will only be as strong as j thinks of i , and not the other way.

We can now turn to a formal account of social capital in hybrid networks. Let $s_{ij}^{IAN} \in [0, 1]$ be the strength of the implicit affinity, or measure of similarity, between individuals i and j . It follows that s_{ij}^{IAN} stands for the potential for bonding that exists between i and j , while its reciprocal, $1 - s_{ij}^{IAN}$, stands for the potential for bridging that exists between i and j . Similarly, let s_{ij}^{ESN} be the strength of the explicit connection between individuals i and j . s_{ij}^{ESN} may be as simple as 1 or 0, to reflect the presence or absence of a link, but may also range over $[0, 1]$ to capture degrees of connectivity (e.g., best friend vs. casual friend vs. acquaintance). Finally, let Ind be the set of individuals in the network.

The bonding social capital *realized* by a node i , when (explicitly) connecting with node j , is naturally given as the product of the strength of the implicit affinity between i and j by the strength of the explicit edge connecting j to i : $s_{ij}^{IAN} s_{ji}^{ESN}$. As expected, if j is unaware of i , even when i may be aware of (and possibly even count on) j , there is no social capital available for i from that relationship. The (realized) bonding social capital of an individual i is then the sum of its realized bonding social capital with all other individuals. That is,

$$b(i) = \sum_{j \in Ind, j \neq i} s_{ij}^{IAN} s_{ji}^{ESN}$$

Likewise, the (realized) bridging social capital of an individual i is the sum of its realized bridging social capital with all other individuals. That is,

$$br(i) = \sum_{j \in Ind, j \neq i} (1 - s_{ij}^{IAN}) s_{ji}^{ESN}$$

Methodology

Participants were 204 former recipients of Bridging Scholarships for study abroad in Japan (101 male and 103 female, average age 21.3 years, $SD = 2.90$). These students had studied Japanese for an average of 2.07 years ($SD = 1.87$) prior

to their departure for Japan. They spent an average of 8.4 months ($SD = 3.70$) in Japan, taking 13.2 hours per week ($SD = 5.27$) of Japanese language courses in 38 language programs across 22 different cities.

To capture learners' perspectives regarding gains in speaking proficiency over study abroad, we had students complete a Then-Now self-assessment (Rohs & Lagone, 1997), based on an oft-used self-assessment instrument designed by Clark (1981). Then-Now measurement is common in educational research as a means of measuring the effectiveness of program interventions and although not as objective as traditional standardized tests of language proficiency, results correlate at moderate degrees with such standardized measures and yield highly reliable results (Dewey, 2002; Lam & Bengo, 2003). Our Then-Now survey presents tasks based on the ACTFL Speaking Proficiency Guidelines (Breindler-Sanders, Lowe, Miles, & Swender, 2000) ranging from Novice-Level to Superior-Level, and asks learners to rate their ability on a 1 (not at all able) to 5 (quite easily) scale. Then-Now reliability estimates were high (Cronbach's Alpha=.97 for Then and .96 for Now).

We measured language use via a web-based version of the Language Contact Profile (LCP), a survey created by Freed et al. (Freed, Dewey, Segalowitz, & Halter, 2004). Social network information was obtained via a thirteen-question version of the Study Abroad Social Interaction Questionnaire (SASIQ) developed by Dewey et al. (2011). The SASIQ consists of items designed to allow the computation of various social network measures, such as size, intensity and dispersion (Scott, 2000). The version of the SASIQ we used also contained items asking learners to identify their friends together with the topics about which they spoke with each one of them. The social network for each participant is thus best represented as a star network (see Figure 1), where the central node is the participant, and the nodes around the periphery represent individuals listed by the participant as friends. The survey allowed for a maximum of 20 friends, but only 56 participants listed 20 friends.

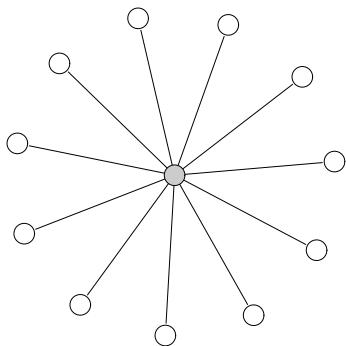


Figure 1: Participants' Social Network

Social Capital for Language Acquisition

Due to the nature of the application, we must specialize our general social capital framework. In particular, we make the following assumptions. (Note: we are only interested in realized social capital, so there is no need to consider implicit links with those not listed as friends.)

1. The only explicit links are between participants and their listed friends. These links are assumed to be undirected and of strength 1, that is,

$$s_{ij}^{ESN} = s_{ji}^{ESN} = \begin{cases} 1 & \text{for each participant } i \text{ and friend } j \\ 0 & \text{otherwise} \end{cases}$$

2. Implicit links are determined only by the topics discussed with friends. Indeed, we have no other information about friends that would allow further affinities to be considered. Each topic of discussion is a possible affinity between individuals.
3. The set T_i of topics discussed by X_i with all of its listed friends is the complete set of possible affinities among them, i.e., we assume that the friends have no other topics of conversation than those pursued with X_i .

4. If T_i is the set of all topics discussed by X_i and $T_{ij} \subset T_i$ is the set of topics that X_i discusses with X_j , then
 - (a) both X_i and X_j are interested in the topics in T_{ij} , so that the topics in T_{ij} make up the implicit affinities between X_i and X_j , and
 - (b) the ratio $\frac{|T_{ij}|}{|T_i|}$ can be used as a measure of the strength of the affinity between X_i and X_j , that is,

$$s_{ij}^{IAN} = \frac{|T_{ij}|}{|T_i|}$$

Bonding and bridging social capitals are then computed as per the general framework's equations. Intuitively, if X_i discusses similar topics with all of his/her friends (i.e., $T_{ij} \simeq T_i$ for all X_j with whom X_i is connected), then X_i has a tendency to bonding, while if X_i discusses different topics with different friends (i.e., $T_{ij} \neq T_{ik}$ for $X_j \neq X_k$), then X_i has a tendency to bridging.

The reader may have noticed that our definition of bridging social capital may be impacted by the number of friends a participant has. Indeed, there is a strong correlation ($r = 0.95$, $p < .0001$) between these two quantities as shown in Figure 2. However, we wish to point out that, in general, bridging social capital is a finer and richer measure as manifested by the vertical dispersion of points on the figure. One extreme case is highlighted by the points labeled *a* and *b*. Both of these have 17 friends, and hence would be considered the same under that measure. Yet, *b* has high bridging, while *a* has very low bridging.

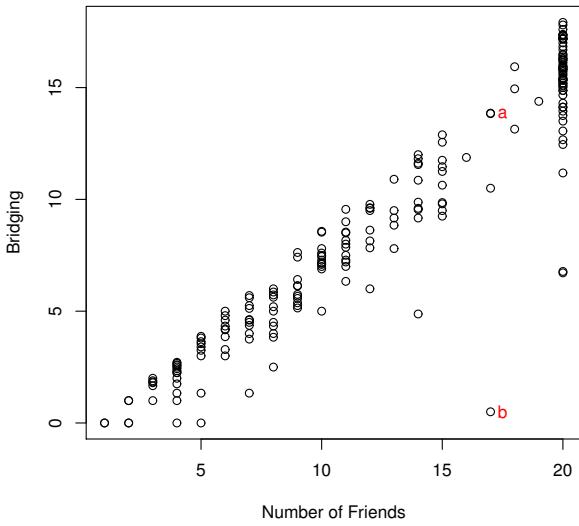


Figure 2: Bridging vs. Number of Friends

Summary of Findings

In this section, we show how learners' self-reported language proficiency and conversation topics vary based on their social behavior.

The aggregate language improvement score is the sum of the differences in the pre- and post- of the 21 self-evaluated language scores. For our participants, the language improvement scores range from -4 to +59.

Rather than carry two scores, one for bonding social capital and one for bridging social capital, we grouped participants into "bonders" and "bridgers" based on their tendency to either behavior. That tendency was computed as the difference between their bonding and bridging social capital values. Individuals with values greater than (or equal to) the mean tendency value were labeled as "bonders", while those with values less than the mean were labeled as "bridgers."

Self-Perceived Gains in Language Proficiency

Figure 3 shows the box-plots comparing the bonders and bridgers groups, with respect to their language improvement. ANCOVA results indicated a significant effect of social capital (bridging vs. bonding) on language improvement (gains from pre- to post-) after controlling for pre-departure proficiency estimate and time in Japan (both found to be predictors of gains in studies cited previously), $F(1, 201) = 12.53$, $p < .0001$. Bridgers ($N = 90$, $M = 26.4$, $SD = 12.4$) fared significantly better than bonders ($N = 114$, $M = 21.9$, $SD = 12.1$).

Topic and Group Analysis

Table 1 shows the number of topics used within each of the groups, the number of participants, and the average number of topics that each participant used within each group. On

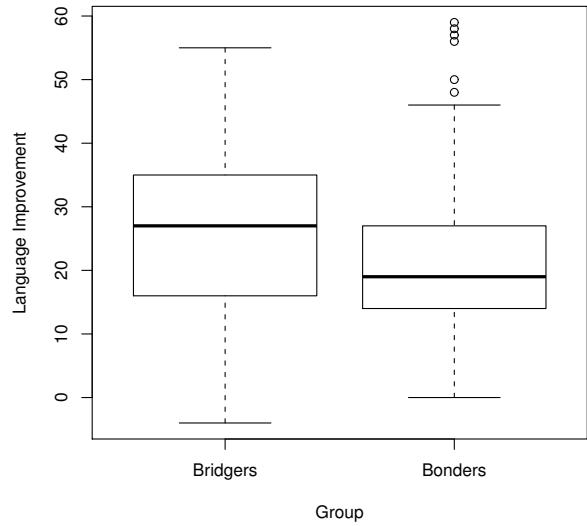


Figure 3: Influence of Social Capital on Language Improvement

average participants within the bonders group had discussed 7 different topics, while those within the bridgers group discussed 11 topics (4 more).

Table 1: Number of Conversation Topics by Social Capital Group

Group	Topics	Participants	Topics / Participant
Bonders	786	114	6.89
Bridgers	992	90	11.02

Although each topic was discussed by at least one person within each group, some topics were discussed more frequently by participants within each group. Figure 4 shows each topic and which group discussed it most frequently. The upper region of the plot shows the topics that bridgers used more often than bonders, while the lower region shows the topics that bonders used more often than bridgers. The scale represents how many more bridgers/bonders used the given topic. For example, the "life views and ideals" topic (in the upper region of the plot) was discussed by 20 more bridgers than bonders. On the other hand, the "business and economics" topic (in the lower region of the plot) was discussed by five more bonders than bridgers. Topics having the same difference in participants are separated by a slash ('/').

According to this ranking, the most disparate topics were "many topics" and "academics". The two topics used more frequently by bridgers are "many topics" and "random topics", which suggest that students within this group talked about a larger variety of topics than others. On the opposite end, it seems that "academics" is a safe topic for any student

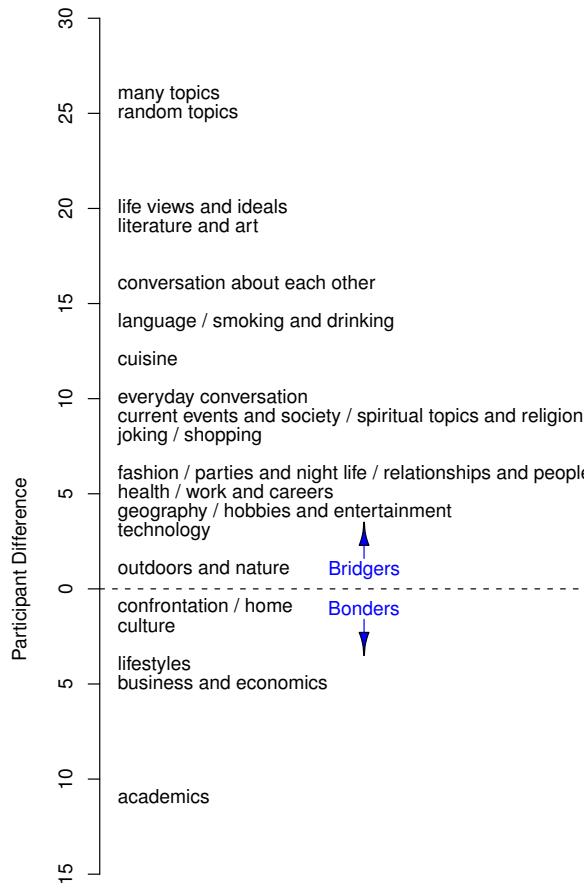


Figure 4: Bridger vs. Bonder Topics

as it is discussed in classes and is something that could possibly even limit who they speak to.

Discussion

The above analysis highlights the potential of social capital as an explanatory variable in study abroad research. While factors such as time abroad, pre-departure proficiency, and grammatical knowledge have received relatively large amounts of attention in study abroad research (Davidson, 2010), social capital and its role in social networking have yet to be explored. Previous studies have shown that developing social networks with native speakers while abroad via volunteer work, part-time employment, club membership, etc. can facilitate language acquisition (Isabellí-García, 2006; Whitworth, 2006). Our research adds to this knowledge by demonstrating that it may not simply be a matter of developing social networks, but also bridging with others by conversing about a range of topics.

The ACTFL Speaking Proficiency Guidelines (Breider-Sanders et al., 2000) contain a number of descriptions of higher levels of proficiency that indicate learners who wish to become more proficient can benefit from discussing a range of topics. For example, learners at the Superior level are expected to “participate fully and effectively in conversations

on a variety of topics in formal and informal settings from both concrete and abstract perspectives,” whereas learners one level below (Advanced) “cannot sustain performance at that [abstract] level across a variety of topics,” but “are more comfortable discussing a variety of topics concretely” (pp. 14-15). The complexity and variety of topics learners are able to control in the second language decreases with lower level abilities, a pattern in line with the connections between topic range and perceived proficiency level in our research.

This work also has implications for pre-departure preparation. If students are better prepared both linguistically and mentally to engage in a variety of topics while abroad, their chances of making gains while abroad are likely to improve. Those who practice a variety of topics to the extent that they are able to participate in discussions even haltingly prior to going abroad are more likely to be able to bridge while abroad, discussing a variety of topics with a variety of people (DeKeyser, 2007) and taking fuller advantage of a setting where “perhaps the most crucial intervention is to give [students] assignments that force them to interact meaningfully with [locals] and overcome their fear of speaking” (p. 218). Overcoming this fear of speaking may have also been partially responsible for the bridgers’ ability to discuss a variety of topics in the second language. In this study we did not measure personality—a weakness we are addressing in follow-up research, where we have collected data investigating the roles of personality, motivation, and affective variables in the creation of social capital during study abroad. Naiman and his colleagues (1996) observed that extroversion and sociability are important in learning one’s second language. It is possible that highly extroverted learners are more likely to discuss a variety of (often less familiar) topics than less extroverted learners. We hope to elucidate the role of personality in our ongoing and future work.

Conclusion

In conclusion, this study has explored social capital as it pertains to second language acquisition. Our framework has allowed us to consider participants’ language socialization according to their bridging and bonding social capital. By this, we have attempted to assess whether bridging or bonding better predicts improvement in language skills. This method of analysis is valuable from a social capital perspective, as increased language abilities can potentially open doors to new venues for relationship development. Also, the results we have presented confirm the notion that social capital, in terms of bridging and bonding, can provide important insights into language socialization and acquisition.

The information we base our conclusions on is limited to the conversation topics reported by our participants in the survey heretofore discussed. We are currently engaged in additional research investigating the nature of conversations learners have (length and type of discourse, etc.). Additional work might also look at other forms of data or investigate if similar trends explain connections between language socialization

and acquisition that occurs via the Internet. Surely, there are a multitude of potential environments in which the implications of this model can be observed that have yet to be considered.

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