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## SOCIAL NETWORK ANALYSIS AND THE INPUT HYPOTHESIS: AN AMERICAN ENGLISH SPEAKER'S EFFORTS AT LEARNING KOREAN AS L2

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## SOCIAL NETWORK ANALYSIS AND THE INPUT HYPOTHESIS: AN AMERICAN ENGLISH SPEAKER'S EFFORTS AT LEARNING KOREAN AS L2

VICTORIA LEE AND ETTIEN KOFFI<sup>1</sup>

### ABSTRACT

*The influence that social networks have on the acquisition of a second language (L2) has not been investigated as extensively as the influence that classroom instruction has. Yet, throughout the world, people acquire L2s without ever setting foot in a classroom. In this paper, we investigate the social network of Author 1 in her attempt to acquire Korean while teaching English as a Foreign Language (EFL) in South Korea. The analysis revolves around four people in her social network. The interactions that she had with these individuals allow us to investigate any putative correlation that may exist between social network analysis (SNA), the Input Hypothesis (IH), and the development of proficiency in an L2.*

**Keywords:** Social Network Analysis, Network Density, Network Intensity, Network Complexity, The Input Hypothesis (IH), Korean as L2, i+1 formula

### 1.0 Introduction

This paper analyses an issue at the interface between social network analysis and Second Language (L2) Acquisition. The question that is posed is the following: “Is there any correlation between the Input Hypothesis (IH) and Social Network Analysis (SNA) in the development of oral proficiency in an L2?” Students enrolled in Author 2’s sociolinguistics course are asked to ponder this question for two reasons. First, most of the students enrolled in the course are preparing to teach English overseas or domestically in the US. As a result, Author 2 tries to make sociolinguistics relevant and applicable to applied linguistics. The second reason is that Wardhaugh and Fuller (2015:71) explicitly correlate SNA and linguistic behavior in the following statement, “Much linguistic behavior seems explicable in terms of network structure.” Students in Author 2’s course are asked to investigate any putative correlation between IH and SNA by drawing insights from their own efforts to acquire an L2. Ordinarily, when this issue is raised, most of the focus is on how nonnative speakers acquire English. However, in this paper, the focus shifts a little bit. Here, we are interested in correlating IH and Author 1’s SNA. We do so in three main installments. The first provides some background information about Author 1, the second focuses on the people in her social network and the interactions that she had with them, the third discusses the thorny issue of IH and SNA. Even though the analysis is based on one person’s recollections of her social network in South Korea, the findings provide us with empirical data for uncovering any putative correlations between IH and SNA. This dovetails a similar study by Koffi (2019) in which he investigated the SNA of Nepali students at a US university.

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<sup>1</sup>**Authorship responsibilities:** The idea of writing on this topic originated from the graduate sociolinguistics course that Author 1 took from Author 2 in fall 2022. Author 2 has reanalyzed, rewritten, and greatly expanded on Author 1’s original paper for publication. Author 1 has had the opportunity to proofread the paper in its current form to verify the accuracy of the descriptions. To the extent that the original data provided by Author 1 is correct, Author 2 assumes full responsibility for any erroneous interpretations. Otherwise, both share equally in the rights, privileges, and responsibilities of this publication.

## 2.0 Focus on the Learner

Author 1 spent seven years (2013-2021) living and teaching English as a Foreign Language (EFL) in South Korea. While in undergrad, she studied Korean at the university for three years. She also studied a semester abroad in an exchange program in South Korea. She pursued an East Asian Studies Major, which fostered her interest in the history and culture of South Korea. She decided to go to South Korea after graduation to teach and learn more about the culture. One of her goals while living in South Korea was to improve on her Korean language skills. To assess how she achieved her linguistic goal, we analyze her social network from 2018-2021 and correlate it with Krashen’s Input Hypothesis.

### 2.1 Participants and Network Density

SNA investigations can be extraordinarily unwieldy and cumbersome if the number of participants is not kept to a minimum. In Author 2’s sociolinguistics course, students are asked to limit the number of actors in a social network to only five individuals. These people are considered the “best” friends for the purposes of simplifying the interactional links between actors in a social network. In the case of this paper, Author 1 is the main actor and the actors with whom she interacts are listed in Table 1.

	Friend A	Friend B	Friend C	Friend D
Countries of origin	S. Korea	USA	USA	S. Korea/Mexico
Native language	Korean	Hmong	English	Korean/English

Table 1: Actors in Social Network Analysis

Author 1 met Friends A, D, C while in South Korea and Friend B was an old acquaintance from the University of Wisconsin that they both attended. Friend A was born and raised in South Korea and his first language is Korean. Author 1 and Friend A used it as their primary language of communication. Friend B and Author 1 often used English and Hmong to communicate because he is ethnically Hmong. Friend C is an American that Author 1 met in South Korea. Their language of interaction was English. Friend D was an old friend from an exchange program in which Author 1 had participated as an undergraduate student in South Korea. Friend D is a South Korean who grew up in Mexico and studied for her Masters in England. This explains why Author 1 often spoke English with her. They often code-switched between Korean and English. When living abroad in South Korea, Author 1 met a lot of English-speaking friends and peers. Friend A knew Friends B and C, but they did not communicate much due to language barriers. The interactional patterns between the people in Author 1’s network can be diagrammed as follows:

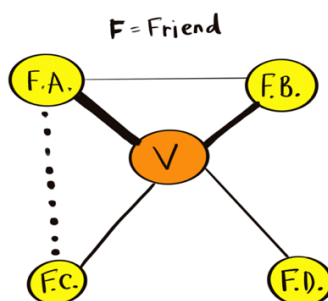


Figure 1: Network Density Analysis

Within the diagram above, “V” stands for Author 1’s first name, which is Victoria. She is placed at the center of the social network because she is the main actor around which all the other gravitate. The “Fs” in the diagram stand for “Friends.”

In a five-person network, there are 10 possible links between the participants. If all five actors know each other and interacts with each other, then the social network is considered **very dense**. Koffi (2020:30-34) differentiates between **very dense network** (10 links) and **dense networks** (7-8 links). Other distinctions in network density include **moderate** networks (5-6) and **loose** networks (5 links or less). In SNA jargon, Author 1’s network is loose because it consists of five and a half links. The dotted lines between FA and FC count as half because the interactions between them do not extend beyond casual social greetings and other social formalities. The reason is because FA does not know English well, and FC cannot speak Korean well either, but both were cordial because they were connected with Author 1. FA has beginner level English and FC utilizes basic Korean. There are no connecting lines between FC and FD on the one hand, and FB and FD on the other hand because they do not interact.

## 2.2 Participants and Network Intensity

The interactions between participants in a social network can be quantified in terms of the amount of time that they spend together. The phrase **network intensity** is used to express the number of hours per week the participants spend with each other in a week. Koffi (2019) estimates that given the fact that a week has a total of 168 hours, it is reasonable to take 10 hours as the maximum amount of time that participants can spend together unless they are boyfriends or girlfriends, married, or significant others. This explains why the interactional ceiling of network intensity is set at **10 hours**. If we estimate that a work/study week takes up 40 hours, one is left with 128 hours of “free” time. Assuming that an average individual is expected to spend 8 hours a day sleeping, one is left with 72 hours week for possible interactions with others. If we further assume that one spends one 1 hour a day caring for one’s personal hygiene, we are left with 65 expendable hours. Life has other demands that chips away at the free time that one has. Therefore, it is reasonable to expect 10 hours to be the maximum amount of time that one has to maintain one’s social network. Table 2 describes the intensity of Author 2’s social network.

	Friend A	Friend B	Friend C	Friend D
Country of origin	S. Korea	USA	USA	S. Korea
Interaction time/week	≥ 10 hours	7	3	2

Table 2: Network Intensity Analysis

Network intensity can be further subdivided into **very intense** (9 to 10 interactional hours per week), **intense** (7-8 hours), **moderate** (6-5 hours) **loose** (2 or less hours). Author 1’s network intensity is displayed in Figure 2. It is the same as Figure 1, but it is repeated here as Figure 2 for sake of presentation.

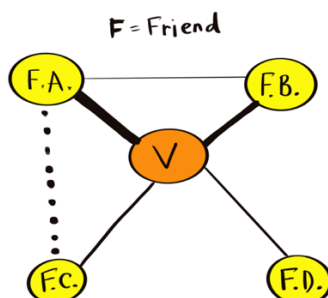


Figure 2: Network Intensity Analysis

In SNA, line thickness is manipulated in various ways to depicts network intensity. The thicker the line, the stronger the linkage, i.e., the more time the actors spend together. The link between V and Friend A is the thickest because they spend 10 hours or more together weekly. The line becomes thinner as less interactional times decreases. Such is the line between FA and FB. The lines between V and FC and V and FD are slightly thicker than the line between FA and FB. Then the dotted line between FA and FC means that they do not spend much time together, the time it takes to exchange greetings.

### 2.3 Participants and Network Complexity

The third import concept in SNA is **network complexity**. Koffi (2020:30-34) makes a distinction between a **multiplex** network and a **simplex** one. Complexity is computed by counting the number of interactional events, such as the ones listed in Table 3. A feature annotation similar to that which is used in phonology is adopted here. The “+” indicates social events or activities that the actors in a social network participate in. The “-” symbol means that the people in the network do not do these events together.

	Friend A	Friend B	Friend C	Friend D
Shopping	+	+	+	+
Cafeteria	+	+	+	+
Sports	+	-	+	-
Studying	+	+	-	-
Classes	+	+	-	-
Roommate	+	-	-	-
Movies	+	+	-	-
Religion	-	-	-	-
Others	+	+	+	+
Total events	9/10	6/10	4/10	3/10
<b>Language(s) used</b>	Korean	English	English	English

Table 3: Network Complexity Analysis

Koffi (2020) has purposefully limited the number of interactional events to 10. The last row “others” is meant to catch social events that one does not wish to describe fully. The information in Table 3 makes it easy to translate interactional events into percentages. Accordingly, we see that the complexity of the network between V and FA is 90%, V and FB is 60%, and so on and so forth. From the standpoint of L2 acquisition, multiplex networks are more conducive to lexical growth because the learners are exposed to new words and phrases that are specific to the various activities in which they engage with the actors in their social network.

### 3.0 SNA, the Input Hypothesis, and L2 Proficiency

Krashen, a towering but controversial figure in Second Language Acquisition (SLA), has hypothesized in many publications that learners can make progress in their L2 if they are given some specific forms of linguistic input. This is commonly referred to as the Input Hypothesis (IH). To be clear, IH was designed only to investigate L2 English. Furthermore, Krashen did not explicitly correlate IH and SNA even though inference is possible at some levels. The current attempt to correlate the IH and SNA stems from Author 2's attempt to make his sociolinguistics relevant to Teaching English as a Second Language (TESL) students who enroll in his course. It is generally accepted in Second Language Acquisition (SLA) literature that the input that leads to successful acquisition must have the following ingredients. It must be:

1. comprehensible
2. interesting
3. of good quantity
4. of high quality<sup>2</sup>
5. conform to the *i+1* formula

The last ingredient is of particular interest to us because it claims that learners will keep making progress in their L2 if they are continually given comprehensible input (*i*), and if each instance of comprehensible input is slightly above the learner's current level of proficiency (*+1*). IH excludes incomprehensible input that is beyond the grasp of the learner. For instance, if L2 learners watch television or movies way beyond their level of proficiency, they will not acquire much of the L2. However, if IH meets the criterion in the *i+1* formula, learners integrate this input into their linguistic system as **intake**. The input can be explicit, as in classroom instruction, or implicit, as in normally occurring conversations between interlocutors. Once the input has been received, it can be turned into intake and later as output. This acquisition process can be formulated as follows:

Input → Intake → Output

The appeal of IH is that it is intuitive and self-evident. Oller (1988:171) writes that IH is “hardly questionable at face value.” Yet, Gregg (1986) has levied serious criticism against it. Even so, the interface between IH and SNA is sociolinguistically attractive. This explains why we wish to examine Author 1's acquisition of Korean in light of both IH and SNA.

### 3.1 SNA and Quantity of Input

Since Author 1 studied Korean in South Korea for a period of time, the learning environment qualifies as an immersive linguistic landscape, that is, the L2 is spoken all around her. In a foreign linguistic environment, the L2 is spoken only or primarily in the classroom. Outside of the classroom, the L2 is scarcely heard, if at all. Since Author 1 was in an immersive environment, the sounds and sights of Korean were everywhere. All things being equal, an immersive L2 environment is more conducive to acquisition than a foreign environment. However, even in an immersive environment, L2 acquisition is not a given. Author 1 observed that while living in South Korea, she saw many English speakers who only stayed at a beginner level in Korean, while others took advantage of being in the country to improve their mastery of Korean.

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<sup>2</sup> See section 3.2 for some misgivings.

People have to take advantage of the resources already there if they choose to develop their L2 proficiency. Although one could receive a lot of input from native speakers, nothing will happen unless one makes the efforts to learn the language. Author 1 attributes her proficiency in Korean to the social network she created for herself. She receives a large and diversified input from FA who provided her with at least 10 hours of Korean input per week. Her language skills improved with consistency because she received both quantity and diversity of input. Since she interacted in Korean with FA in nine social events every week, she received *i+1* input that she turned into intake and output.

Some examples of *i+1* input include conversations between Author 1 and FA in which the latter brought up new vocabulary items or idioms that she had not heard or used before. Over meals, they would often talk about work or daily activities. FA would use a lot of new words that Author 1 had not encountered before in her Korean language classes. Author 1 became very familiar with work words like *documents, investments, presentation, and employees, etc.* These words came up often within conversations, so Author 1 had to make sure she knew what they meant in order to follow FA. She would sometimes serve as a pronunciation tutor, especially when Author 1 did not know how to pronounce a word. Author 1 and FA also communicated via text messaging. This allowed Author 1 to become familiar with spelling, typing, and using the Korean alphabet. If Author 1 didn't know a word or phrasing, she could translate them to find the answer. This helped her better communicate and find new sentences and words. Author 1 even learned some new slang like "*Ma-gi-kun*" which is taken from the Korean words meaning "mask" and "swindler." This equivalent in English would be "*mask fishing*." Someone who looks good with a mask on, but not as attractive without a mask. Author 1 was motivated to keep up with daily conversation with FA. Although she was not able to actively study Korean, conversations with FA helped her keep up with her own Korean skills. She felt comfortable asking questions if she didn't understand something. FA was very helpful and always patient. The main goal between the two was to converse and connect.

### 3.2 SNA and Quality of Input

In IH, quality of input is ideally provided by native speakers. However, there are serious reservations about the efficacy of IH with regard to phonetic and phonological acquisition. For instance, we are right to deduce from Chomsky and Halle (1991: 353, 373) that the quality of input provided by native speakers of American English is very often limited to disyllabic English words of Germanic origin. Their pronunciation of such words is optimal. However, when it comes to scientific or specialized vocabulary items, the quality of native speakers' pronunciation is doubtful if they are not acquainted with these fields. The quality of input at the syntactic and lexical levels is debatable. It seems that IH is optimal only at the prosodic level. So, we agree with Scarcella and Perkins (1987:349) that the IH does not apply to all the components of grammar equally.

One area of SLA where native speakers undoubtedly produce high quality input is in what Dulay, Burt, and Krashen (1982:241) refer to as "routines and patterns." Others call them "formulaic language." These are "constructions whose internal structures appear to be beyond the level of learners' productive rule-governed system. They provide L2 learners with a means of communicating in the second language long before they have acquired the rules of that language." All languages are replete with such idiomatic expressions. So, when L2 learners are in contact

with native speakers, they learn many of these phrases. Below are some examples of the routines that Author 1 learned to produce by virtue of being strongly linked with FA.

1. *눈이 높다*, which translates literally as “*her eyes are high*.” A non-literal translation means “*she has high standards*.”
2. *인생샷*, *Life shot*, literally, “*that’s a life shot*,” idiomatically, “*that’s a really cool picture*,” which also means “once in a lifetime cool picture shot.”
3. *맛집*, *Delicious House*. The first syllable of delicious in Korean is combined with house to create the meaning “famous restaurant”/ “good restaurant.” So, “*Let’s find a delicious house*,” means “*Let’s find a good restaurant*.”
4. *입이 심심하다*. This translates literally as “*my lips are bored*,” i.e., I have the munchies. This is used when someone who wants to eat something, or munch on a snack.
5. *불금*. “Fire” combines with the first syllable of Friday in Korean to give “*Fire Friday*.” So, “*it’s fire Friday*” is the equivalent to the American expression “*Thank God it is Friday*.”
6. *노답*. This translates literally as “*No Answer*.” This expression means “*no solution, something not good*,” or “*I have nothing to say*.” For example, one is asked, “*How was your exam?*” and one answers, “*No answer*,” it means that the exam wasn’t good, or the person didn’t pass.

The social network in which Author 1 found herself was conducive to a faster and deeper acquisition of Korean (Dulay et al. 1982:17). Author 1 attests of this, saying:

I am nowhere close to native pronunciation or advanced fluency, but with constant exposure to the native vernacular, I could cope and work at my fluency effectively. Being able to interact with a native speaker is good because while communicating, I could inquire about new words they used and slowly build my vocabulary... No matter how much I had studied in the US with my American peers, my L2 proficiency progressed the most from my time living in South Korea. Aside from only exposure, I also think it is important for a person to be proactive. While living abroad, I could actively see L2 speakers who only stayed at beginner level and L2 speakers who proactively improved immensely. Although one could receive a lot of input from native speakers, nothing will happen unless combined with one’s own applicable efforts.

The misgivings about IH and phonetic and phonological acquisition are alluded to in this case. Author 1 increased her intelligibility of Korean, but her English-accented Korean remained. Yet, her overall proficiency increased greatly. She credits much of her progress to the very dense and intense link to FA. Her vocabulary increased a great deal because of the multiplexity of the interactional events in which she participated with FA.

#### 4.0 Summary

Author 1’s personal experience with learning Korean as L2 confirms that a correlation exists between SNA and IH. She received *i+1* input that she transformed into intake and then into output. FA provided her with the constant exposure to her L2 in a wide variety of interactional



events. Because Author 1 was surrounded by Korean day in and day out through continual interactions with FA, she made considerable strides. The account of her progress in Korean is anecdotal, but it seems to indicate that a correlation might exist between SNA and IH. The findings in Koffi (2019) point in this direction. However, IH alone does not bring about progress in L2. Author 1 credits motivation as an additional ingredient. A piece of evidence that the latter is important is the fact that there are still many expatriates who have lived in South Korea for a long time but whose proficiency in Korean has not budged beyond the beginner level. It is quite likely that these expatriates do not have native Koreans in their social networks who fulfill the role that FA did for Author 1.

### ABOUT THE AUTHORS

**Ettien Koffi**, Ph.D. linguistics (Indiana University, Bloomington, IN) teaches at Saint Cloud State University, MN. He is the author of five books and author/co-author of several dozen articles on acoustic phonetics, phonology, language planning and policy, emergent orthographies, syntax, and translation. His acoustic phonetic research is synergetic, encompassing L2 acoustic phonetics of English (Speech Intelligibility from the perspective of the Critical Band Theory), sociophonetics of Central Minnesota English, general acoustic phonetics of Anyi (a West African language), acoustic phonetic feature extraction for application in Automatic Speech Recognition (ASR), Text-to-Speech (TTS), voice biometrics for speaker verification, and infant cry bioacoustics. Since 2012, his high impact acoustic phonetic publications have been downloaded **54,717** times (**37,140** as per Digital Commons analytics), **17,577** (as per Researchgate.net analytics), and several thousand downloads from Academia.edu, as of **February 2023**. He can be reached at [enkoffi@stcloudstate.edu](mailto:enkoffi@stcloudstate.edu).

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