SELECTED WORKS OF
on Applied Linguistics

SUSAN GASS

盖苏姗
应用语言学自选集 (下)

Susan Gass (美) 著

Selection Series
of World-Famous
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Input, Interaction, and Second Language Production*

The role of conversational interactions in the development of a second language has been central in the recent second language acquisition literature. While a great deal is now known about the way in which nonnative speakers interact with native speakers and other nonnative speakers, little is known about the lasting effects of these interactions on a nonnative's linguistic development. This paper specifically investigates the relationship among input, interaction, and second language production. Through data from native-nonnative speaker interactions in a direction-giving task, we show that both modified input and interaction affect task performance. However, only interaction has an effect on subsequent task performance.

The question of the role of conversational interactions in the development of a second language has been central in the recent second language acquisition literature. While this question has been addressed from a variety of perspectives, it has been difficult to ascertain precisely the role of input and interaction in terms of actual language development. This, in fact, is the thrust of an article by Schachter (1986) in which she argued for the importance of showing the *effect* of native speaker input on the language learning process. The purpose of this paper is to see if and in what ways it is possible to determine a direct relationship between input, particularly interactional input, and subsequent language production.

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An early view of acquisition held that learners learned grammatical rules and then applied those rules and practiced them within a conversational setting. Thus, classroom drills, classroom interactions, and daily interactions with native speakers were viewed only as a means of reinforcing the grammatical rules acquired by a learner.

In 1975 Wagner-Gough and Hatch suggested a different role for conversation in second language development. They argued that conversational interaction forms the basis for the development of syntax rather than being only a forum for *practice* of grammatical structures. Syntax, they claimed, develops out of conversation rather than the reverse. Example 1 illustrates the way language development can take place within a conversational setting, as the child learner in this case uses the conversation to further her syntactic development.

1. From Ellis (1985, pp. 79-80)

NS: Do you want to look at the next picture? Yeah?
NNS: Man.
NS: A man. And do you know what this is? A wall.
NNS: A wall.
NS: Like that one there. A wall.
NNS: A wall, a wall.
NS: Yes. Now, can you see what the man is doing?
NNS: A man wall.
NS: He's going into the wall.

Prior to this point in time, there were no examples of two-word utterances in this child's discourse. As can be seen, the conversation itself provides the framework or, as Ellis states, "the breakthrough points" for a two-word utterance to develop. The teacher in this case broke the task into parts and helped with the crucial vocabulary, which finally enabled the child to connect *man* and *wall* in her final utterance.

CONVERSATION IN NATIVE-NONNATIVE DISCOURSE

From this interactional perspective stem a number of studies in which second language conversational interactions and, more broadly, issues of input have become a primary focus in second language research. Long (1980) made an important distinction between modified input, or foreigner talk, and modified interaction, differentiating between the modified talk

directed to the learner and the modified structure of the conversation itself. By interactional features, he included such aspects of conversation as comprehension checks, topic shifts, and clarification requests. In his work, Long showed that conversations involving nonnative speakers (NNSs) have more of these kinds of modification than do conversations between two native speakers (NSs). He argued that this is so for two reasons: First, these devices aid in avoiding conversational trouble and, second, they serve the function of repairing the discourse when trouble does occur. Varonis and Gass (1985) extended this line of research by operationalizing the concept of negotiation of meaning as a central factor in second language acquisition. An entire volume (Day, 1986) is devoted to precisely the relationship between conversation and acquisition. A number of other studies have considered the effect on nonnative speech of such variables as male/female differences (Gass & Varonis, 1986; Pica, Holliday, Lewis, Berducci, & Newman, 1991), ethnic differences (Scarcella, 1983, 1992), proficiency (Varonis & Gass, 1985), status and expertise differences (Woken & Swales, 1989; Zuengler, 1989), and task differences (Duff, 1986; Long, 1980; Pica, 1987; Pica & Doughty, 1985; Plough & Gass, 1993; Samuda & Rounds, 1993). While these studies have significantly contributed to our growing understanding of the factors that influence the nature of speech, they only *indirectly* touch upon the issue of subsequent L2 production and acquisition. For example, Long (1983) made a deductive argument: Linguistic and/or conversational adjustments lead to better comprehension; comprehension promotes acquisition. Therefore, adjustments facilitate acquisition. An underlying assumption in this body of research is that negotiation increases the possibility that the language used in the negotiation will be of benefit to the learner in the development of the L2 (Ellis, 1991; Gass & Varonis, 1989; Long, 1992; Pica, 1987).

Despite the promising results of such research, the effect of interaction on acquisition remains controversial. Sato (1986) questioned a direct positive relationship. She examined the English of two Vietnamese boys, finding that neither the NS input to the boys nor the naturalistic interaction between them and their native speaker interlocutor was reflected in increased language proficiency. Her study, focusing on the marking of past time reference, did not suggest that grammatical encoding of such reference increased as a function of proficiency. Instead, the nonnative speakers relied on the situational and/or discourse context to establish a time frame. Since

pastness was for the most part recoverable from context, there was an insignificant interactional burden on the part of participants. Furthermore, in the case of past tense marking in English, the feature in question is often not phonologically salient, reducing the learner's opportunities to utilize relevant information. Thus, at least in the case of past tense marking, there is little necessity and little opportunity to obtain or provide linguistic information in the conversation. However, given their relatively rudimentary knowledge of English, one wonders whether the situation might not be different if the learners were at a different stage of development, a stage at which they were "ready" to learn past tense forms (Pienemann, 1992).

Sato's findings have been corroborated by other studies that also focus on NS-NNS naturalistic conversations. Chun, Day, Chenoweth, and Luppescu (1982) reported relatively little explicit feedback in free conversation between native and nonnative speakers and therefore questioned the value of correction as an integral part of successful acquisition. In another study, Day, Chenoweth, Chun, and Luppescu (1984) further questioned the role of error correction in L2 acquisition, noting that out of 1,595 student errors in the corpus, only 119 (7.3%) were singled out for corrective feedback by NS interlocutors.

A follow-up study by Brock, Crookes, Day, and Long (1986) suggested that the effect of conversational interactions on acquisition may be influenced in part by task. They investigated a broader range of negative input in native-nonnative free conversations, examining short-term effects of such input on the nonnative's language development. They found surprisingly little change in learner forms, with only 26 out of 152 instances (17.1%) in which learners clearly responded by incorporating the native speaker's negative input into their next turn. However, they pointed out anecdotally the possibility of an effect for task: They did observe NNSs incorporating examples of native speaker corrective feedback following errors when communication took place in the context of communication games. In other words, learners' grammars may be quickly destabilized if they give sufficient attention to the area in question, with the assumption being that they would pay more attention in the context of a game as opposed to free conversation. Gass (1988, 1991) and Long (1992) have argued for the importance of selective attention in second language development, claiming that it is a prerequisite to grammatical development, a point we return to later. Similarly, Schmidt (1990) argued that conscious awareness is a

necessary condition for language development. In addition, it is important to keep in mind that the absence of short-term effects does not exclude the possibility of long-term effects when the learner has had sufficient time to process and incorporate the feedback.

The importance of task is further supported by Crookes and Rulon (1985), who examined native-nonnative dyads, considering the issue of the incorporation of corrective feedback in three situations: One free conversation and two two-way communication tasks. Feedback was defined as the correct usage by a native speaker of a word or construction *immediately following* a nonnative utterance. They found significantly more feedback in task-related conversation than in free conversation. They suggested that for maximum grammatical destabilization, linguistic material should be slightly unfamiliar to the nonnative speaker, and the structure of the task should require the maximum use of this material by both parties. Pica, Young, and Doughty (1987), in a picture arrangement task in which input to the learner was either premodified or interactionally modified, found that comprehension (as measured by task completion) was superior when the negotiation was allowed as opposed to when it was not. Knox (1992) extended this observation to naturalistic conversation, suggesting that form-focusing and subsequent NNS self-modification occurs in certain types of constrained settings, such as a structured interview or a service encounter.

The relationship between comprehension and acquisition is further called into question by Doughty (1991). In a study of relativization, she compared three groups of subjects engaged in a computer-assisted language learning project. The groups differed in the format of presentation of the language material. Besides a control group, there were two experimental groups: a meaning-oriented treatment group and a rule-oriented treatment group. As the names suggest, in the latter group, the rule-oriented treatment group, explicit metalinguistic statements about relative clauses were provided, whereas in the meaning-oriented treatment group there were no such explicit statements. The meaning group had higher comprehension scores than the rule-oriented group. However, in terms of pretest/posttest scores measuring gains on relative clauses, the two experimental groups improved more or less equally. Thus, at first glance, it appears that there is no direct relationship between comprehension and acquisition. However, a closer examination of the experimental materials brings us back to the question of attention. That is, how can a learner's attention be brought to language forms? It is beyond the

scope of this paper to discuss this concept in any detail (cf. Gass, 1988; Schmidt, 1990); however, three aspects are important: form-focused instruction, frequency, and saliency. If we return to Doughty's study, we see that both saliency and redundancy (i.e., frequency) were built into the tasks of the meaning-oriented treatment group. In the experimental material, the meaning-oriented treatment group saw reading passages with certain features, namely, head nouns and relative clause markers, highlighted on the screen. Additionally, the juxtaposed head noun and relative clause marker were capitalized, thereby visually making this part of the reading passage salient to the learner. Thus, Doughty's results (given her particular methodology) suggest that what is important for acquisition is not so much immediate comprehension, but the necessity of drawing learners' attention to particular forms.

Taken as a whole, these studies suggest that NS input is most likely to affect subsequent NNS language production when the interaction is focused and task-oriented.

One difficulty in this area of research is the determination of the learner's knowledge at any particular time. An operating assumption is that we need to assess immediate destabilization of grammatical forms in order to determine the effect of conversational interaction. However, it may be more appropriate (albeit methodologically difficult) to consider longer range effects. Bruton and Samuda (1980) discuss something similar when they refer to "correction by permeation," with correct forms gradually becoming incorporated into the learner's grammar over time.

CONVERSATION IN NONNATIVE-NONNATIVE DISCOURSE

Up until now we have dealt primarily with research that deals with native-nonnative interactions. There is another area in which nonnative speakers frequently find themselves and that is in conversations with other nonnative speakers. There is evidence that the changes they make as a *result* of the interaction are in the direction of the target language. Gass and Varonis (1989) presented data from nonnative-nonnative interactions that show that a correctly modeled form by a nonnative frequently resulted in changes by the other nonnative in the dyad, although the changes often occurred much later in the discourse. To illustrate such a change as a result of input from another nonnative, we present an example of a grammatical

modification in a nonnative's speech that appears to have taken place. In example 2, two nonnatives of different language backgrounds were given the task of going out onto the street with a tape recorder and asking for directions to the train station. These students left the tape recorder on during the entire time they were engaged in this task so that the totality of the conversation between them was also recorded, even when they were not specifically engaged in alternately stopping passersby to ask for directions.

2. a. Ana: Can you tell me where is the train station?
   b. Keiko: Can you tell me where the train station is?
   c. Ana: Can you tell me where is the train station?
   d. Keiko: Can you tell me where the train station is?
   e. Ana: Can you tell me where is the train station?
   f. Keiko: Can you tell me where the train station is?
   g. Ana: Can you tell me where the train station is?
   h. Keiko: Can you tell me where the train station is?
   i. Ana: Can you tell me where the train station is?

In understanding the significance of this example, it is important to note that nowhere in the entire conversation between requests for directions did the students discuss the correct grammatical form of English indirect questions. Nonetheless, Ana made an unprompted change in the form of her utterance, from incorrect to correct, while Keiko made no change. This can be seen by Ana's incorrect forms in lines a, c, and e ("Can you tell me where is the train station?") and correct forms in lines g and i ("Can you tell me where the train station is?"), with Keiko using the standard English form all the way through. What is particularly impressive in this example is that the change was made in the direction of the target language and not from a correct target language form to an incorrect one. In a similar vein, in 10 hr of taped conversations between nonnatives, Bruton and Samuda (1980) found only one example of a change from correct to incorrect. In other words, errors of a nonnative speaker peer are generally not incorporated, while one can find numerous examples of modifications in the direction of the correct target language forms. Similarly, Gass and Varonis (1989) found that 89% of all modifications made as a consequence of an interaction were made in the direction of the target language. This included incorporated changes that occur immediately as well as those that occur after a period of time. Furthermore, we noted additional examples of what we call "incorrections," in which one of the NNSs offered an incorrect repair. In all of

these cases, the NNSs did not accept the repair and maintained the form that they had originally used. For instance, in example 3 Hiroko says *in his knee* and Izumi responds with the incorrect form *in him knee*. Interestingly, Hiroko maintains the original form in terms of the pronominal case (*his knee*) but changes the preposition (from *in* to on), thus clearly recognizing that something was not correct in her original utterance but not incorporating the incorrection. Both finally end up with the correct form, *on his knee*.

3. From Gass and Varonis (1989, p. 81)

Hiroko: A man is uh. drinking c-coffee or tea uh with uh the saucer of the uh uh coffee set is uh in his uh knee

Izumi: In him knee

Hiroko: uh on his knee

Izumi: yeah

Hiroko: on *his* knee

Izumi: so sorry. on *his* knee

In example 4, on the other hand, after the incorrection *mouth are open*, which Midori utters, Yoshi uses an entirely different construction.

4. From Gass and Varonis (1989, p. 81)

Yoshi: and uhm will she's uhm mouth is open

Midori: mouth are open

Yoshi: She has a rather wide jaw

Thus, although both NS and NNS interlocutors provide corrective feedback in conversation with NNSs, most, but not all of it, is correct, and not all of it is incorporated. Another example of incorporated feedback is offered by Macdonald (1993), who presented evaluations of pronunciation data from learners engaged in interactions. NSs evaluated the pronunciation of NNSs in interactions with other NSs both before and after such interaction. She found that subjects whose interactional strategies indicated an awareness of pronunciation difficulty were more often rated higher after the interaction than those who did not. Her study therefore provides a clear indication of the value of feedback.

The importance of corrective feedback, or negative evidence, has been further argued by White (1987), who suggested that what is necessary is not comprehensible input, but incomprehensible input. It is incomprehensible input that may trigger learners' recognition of the inadequacy of their own rule system. In essence, this is the crux of the interaction argument: Comprehension difficulties, or "instances of non-understanding" (Varonis & Gass, 1985), are

what allow a learner to notice that linguistic modification is necessary.

Through the data we examine in this paper, we attempt to further investigate the relationship among input, interaction, and second language production. The specific hypotheses discussed are the following:

1. Modified input yields better NNS comprehension than unmodified input.
2. Interaction yields better NNS comprehension.
3. Interaction yields better NS comprehension.
4. Prior interaction yields better L2 production.
5. Prior input modification yields better L2 production.
6. Real-world expectations affect comprehension.

METHOD

Subjects

Conversations from 16 native-nonnative dyads form the database for this study. All of the nonnative speakers were enrolled in an intensive language program at a large U.S. university; all of the native speakers were undergraduate students at the same university. All NNSs were at the high intermediate level and were of different L1 backgrounds (Chinese, Turkish, Japanese, German, and Korean). Pairing of native-nonnatives was done by convenience (i.e., according to the times when they were available to participate in the study).

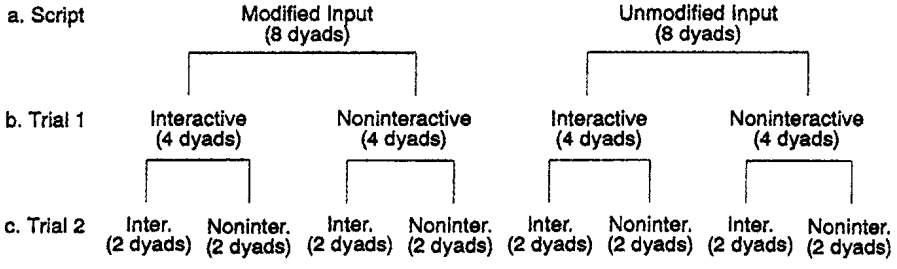

Figure 1 Diagram of experimental design

Procedure

Each member of the dyad performed a task in which he or she had to describe to a partner where to place objects on a board. The boards were depictions of an outdoor scene, in the first trial a beach scene and in the

second a farm scene. The objects included human figures, animals, and inanimate objects. The describers, who were visually separated from their partners, had a board on which 20 objects were glued. The partner had an identical board with the identical 20 objects placed to one side. The task, then, was to describe to one's partner where to place these objects (Trial 1). In every case the native speaker first read from a script provided by the researchers. After this description, a second board, with the identical 20 objects, was given to the nonnative to describe (Trial 2). Each trial took approximately 20 min, with roughly 5 min separating the two trials.

Design

Prior to the start of data collection, a native-native pair and a native-nonnative pair performed the first task described above, using the board for Trial 1. In neither case was interaction allowed. None of these four individuals participated in the actual study. The descriptions were recorded and then transcribed. The transcripts of both pairs were used as the script for Trial 1. The script taken from the description of one native speaker to the other native speaker was designated *unmodified input*; the script taken from the description of the native speaker to the nonnative speaker was designated *modified input*.

The 16 NS-NNS dyads in the study were divided into two subgroups: a modified input group and an unmodified input group, illustrated in Figure 1, part a.

The groups were differentiated by the kind of input that the native speaker (the NS member of one of the 16 NS-NNS dyads) gave to the nonnative speaker. In both groups the NS followed one of the two scripts, transcribed from the data gathered prior to the study.

Table 1 Number wrong on first trial: Nonnative speaker placement of objects based on native speaker directions

	Input Type		
	Modified ($N=160$)	Unmodified ($N=160$)	Total ($N=320$)
Noninteractive (k = 160)	36	47	83
Interactive (k = 160)	24	37	61
Total (k = 320)	60	84	144

Note: Total opportunities for error = 320 (16 subjects × 20 figures) or 80 in each of four cells.

Each of these two subgroups was further subdivided into two more subgroups according to whether or not normal interaction (including requests for repetition, clarification, comprehension checks, etc.) was allowed during the first description (see Figure 1, part b). Finally, there was one additional subdivision, illustrated in part c of Figure 1, depending on whether interaction was allowed during the second description (i.e., when the nonnative speaker was describing). The nonnative description was not scripted, as it was our intent to see which of the input and interaction conditions led to more successful descriptions by the nonnative.

Our dependent variable was comprehension on the part of the NNS (Trial 1) and the NS (Trial 2), as measured by the degree to which subjects were able to understand instructions and hence accurately place objects on the board. [1]

RESULTS

The results are presented in terms of number wrong, determined by the accurate versus inaccurate placement of the objects on the board. On the first trial, we take this to be a measure of the NNS's ability to *comprehend* the instructions. On the second trial, we take this to be the measure of the NNS's success at *using* the language to give appropriate instructions.

Nonnative Speaker Performance Based on Native Speaker Descriptions

We first consider the results of Trial 1 in terms of both of our experimental conditions: (a) modified versus unmodified input (Hypothesis 1) and (b) interaction versus noninteraction (Hypothesis 2). As can be seen in Table 1, nonnative speakers made fewer errors (60/160) when they received modified input than when they received unmodified input (84/160) from the native speaker direction-giver. This difference was significant (Mann-Whitney U, $p = .0087$). [2] Similarly, nonnative speakers made fewer errors (61/160) when interaction was allowed than when it was not allowed (83/160). Here, too, the difference was significant ($p = .0209$). Thus, both the condition of modified input and the opportunity for interaction resulted in significantly fewer errors, confirming our first two hypotheses. In fact, the most successful condition (24/80 possible errors, or 30%) was that in which NNSs received modified input and had the opportunity to