

Rule Presentation, Feedback and Attention: A Comparison of Two Empirical Studies

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Abstract

The notions of evidence, input, intake, attention, feedback and interaction have been controversial, having implications for such areas and constructs as behaviorism and the universal grammar (UG). Two recent studies investigated these notions, and share certain features such as a common L1 (English) and L2 (Spanish). However, there are also many crucial and interesting differences. This review will firstly give an overview of the essential phenomena investigated. It will then scrutinize and compare the two studies with respect to their theoretical underpinnings, motivations, research questions, research designs, hypotheses, selection of participants, methodology, coding and analysis of data, results, analyses and conclusions. Finally, future research will be suggested that would extend some of the studies' findings and address their limitations.

Keywords:

input

explicit rule presentation

explicit feedback

implicit feedback

intake

attention

positive evidence

interaction

The Studies:

Sanz, C. and Morgan-Short, K. (2004)

Positive evidence versus explicit rule presentation and explicit negative feedback: A computer-assisted study.
Language Learning, 54:1, 35-78.

Gass, S.M. and Alvarez-Torres, M.J. (2005)

Attention When? An investigation of the ordering effect of input and interaction.
Studies in Second Language Acquisition, 27, 1-31.

Overview

Input

As Gass and Alvarez-Torres (2005) point out, the need for input in language learning is generally accepted. Even if one assumes that the learner has a fully functioning UG, input is required to activate it. Input has also played a key role in several theories of second language acquisition. The literature (e.g., Corder, 1967, cited in Gass and Selinker, 2001) generally distinguishes between input and intake. Input is essentially the evidence from external sources that the learner is exposed to. Intake refers to the features of the input which are internalized by the learner. Gass and Alvarez-Torres note that it is still unclear how input leads to intake, while Sanz and Morgan-Short (2004) argue that although it is generally agreed that input is necessary to learn languages, it is not yet agreed whether input alone

is sufficient or not. Much research has been concerned with whether input needs to be enhanced with rule presentation or feedback.

Interaction and feedback

Gass and Alvarez-Torres (2005) argue that interaction can lead to feedback from an interlocutor to the learner, indicating that his or her utterance has not been entirely understood. Feedback may involve events such as clarification requests (e.g., “Sorry?”, “Huh?”), repetitions and recasts. According to the interaction hypothesis, “negotiation for meaning, and especially negotiation work that triggers interactional adjustments by the NS [native speaker] or more competent interlocutor, facilitates acquisition because it connects input, internal learner capacities, particularly selective attention, and output in productive ways” (Long, 1996:451, my insertion). In a model proposed by Gass (1997), learning may take place during the interaction itself, but may also take place later after the learner has been primed by interaction.

Explicitness and Implicitness

These concepts have been applied in several ways to SLA, such as explicit or implicit evidence (i.e., whether the learner is provided with an explicit explanation about the form being learned or independently extracts a rule from natural input); knowledge (i.e., the way a rule is represented in a learner’s mind); and feedback (i.e., whether the feedback overtly refers to the error made, or simply indicates that an utterance has not been entirely understood).

Attention

Attention is generally associated in the literature (see both studies, and Gass and Selinker, 2001) with the pedagogical notions of focus on form (Long, 1991) and processing instruction (PI) (VanPatten, 1996, 2003). According to Long (1991), focus on form “overtly draws students’ attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication.” (pp.45-46). This then allows the learner to focus on meaning and form in turn, easing the cognitive burden (Gass, Mackey, Alvarez-Torres and Fernandez-Garcia, 1999). Sanz and Morgan-Short (2004) refer to the theory and researched effects of PI, whereby a combination of explicit information and carefully structured input pushes the learner to acquire a form.

1. Sanz and Morgan-Short (2004)

This study did not review theory *per se* in great detail, but noted mixed results for effects of explicit rule presentation and explicit feedback in previous research. It examined in particular detail an unpublished dissertation by Rosa (1999), which had investigated both explicit rule presentation and explicit feedback, and had concluded that while explicit information leads to more intake and production and enables learners to generalize knowledge to new items, the provision of explicit information as a pre-task was not effective without some form of concurrent feedback. Sanz and Morgan-Short argued that this study was partly flawed by the highly controlled nature and validity of the tasks, the small amount of positive evidence and the possible confounding test-effects of the attention measures.

Concluding their literature review, Sanz and Morgan-Short argued that there was a need to investigate the effects of the amount of explicit information, its timing, the very nature of input and tasks, and the relationship between explicit information and positive evidence on language learning. They also argued for the measurement of language learning not only through tests such as grammaticality judgments, but also through tests such as content-rich written production. These are logical conclusions, and seem to promise more powerful tests for the effects of different types of input and feedback on language learning.

The concern with the nature of input and tasks and the relationship between explicit information and positive evidence led them to predict that “the effects of explicit information... ..are intrinsically related to the quality of the input and how it is presented and do not depend solely on the explanation and feedback components.” (p.37). Presumably, ‘explicit information’ here refers to both explicit preliminary explanation and explicit feedback; ‘quality of input’ refers to the extent to which the input is structured and comprehensible along the lines of PI; and presentation refers to the amount and timing of the input.

In order to investigate this question, 69 monolingual L1 English learners of Spanish were randomly assigned to four combination treatment conditions: explicit explanation and explicit feedback; explicit explanation with only implicit feedback; no explanation with explicit feedback; and no explanation with only implicit feedback. Hence, the two principal independent variables were the presence or absence of (1) explicit explanation, and (2) explicit feedback. The dependent variables were: (1) interpretation, and (2) production, of

the morpho-syntactic aspects of preverbal direct object pronouns in Spanish, namely, word order and pronouns. No information was provided about precise age, gender or length of previous study of Spanish, nor was there any mention of tests having been carried out with no effects for these variables. This is unfortunate, as it limits the study's replicability and claims for external reliability. All treatment took place through computer-aided practice sessions. The authors justified the use of computers by arguing that it provided greater control and facilitated more precise measurements. This may be true, but seems to be at odds with their criticism of the highly controlled tasks in Rosa's study. Nevertheless, this does not necessarily invalidate the intrinsic value of the experiment.

A general null hypothesis was proposed:

Providing L2 learners of Spanish with explicit information on sentences with object pronouns in preverbal position (i.e., O-cliticV sentences) and how to process them either before or during exposure to input-based practice or both will not affect learners' ability to interpret and produce O-cliticV sentences. (p.51)

Assuming that 'input-based practice' refers to the PI type of carefully structured input to facilitate focus on form, this hypothesis would seem to adequately address the general research question. Assumptions in this experimental study include: (1) that rule-presentation, feedback and positive evidence are separate constructs that can be independently manipulated; (2) that the PI type of input can necessarily and reliably manipulate the learner's attention and focus; and (3) that acquisition of the Spanish language feature under investigation as a dependent variable is representative

of second language acquisition in general and can be reliably tested for. These assumptions have precedents in the literature reviewed and the third was justified by the fact that it is a feature not present in English.

ANOVAs revealed that all groups improved from pre-test to post-test, but no significant differences between the groups were found, with only an effect for time. This was interpreted as supporting the null hypothesis. This differed from Rosa (1999), and it was argued that this supports the effectiveness of practice and PI in decoding positive evidence, whereas in the Rosa study, explicit information was beneficial because the input was less structured. This appears to be a logical and well founded interpretation, although an alternative one could be that since all groups received at least implicit feedback, this could also have played a role in addition to the structured positive evidence. In fact, the researchers acknowledged in their caveats that practice could not be separated from implicit feedback. They also pointed out that time had not been controlled for, and they could not make claims about delayed effects or address fine-grained attention-related distinctions, as administration problems had made the relevant data unusable. It is unfortunate that delayed effects were not included, as this is pertinent to the degree of internalization of the target form from short term memory, thereby fully completing the intake process. The absence of attention measures is perhaps less significant, as it is very difficult to isolate and observe such an internal process as attention accurately.

Overall, this study seemed to address the research question in a clear, useful and practically realistic way. The controlled nature of most of the tasks may strengthen reliability, although external

validity is limited by the fact that no speaking or direct interpersonal interaction took place at any point, making the findings more relevant to computer-aided language learning activities than to interpersonal communication.

2. Gass and Alvarez-Torres (2005)

Whereas Sanz and Morgan-Short (2004) were concerned with explicit information, this study was concerned with the presence or absence of implicit instruction and feedback, although it was similarly interested in structured positive evidence to facilitate focus on form. Also, input and feedback took place through direct interpersonal contact with a native speaker instructor/ interlocutor, rather than with a computer. A more thorough theoretical underpinning for the study was also provided.

The authors argued that although input and interaction had been widely researched and accepted in SLA, their relationship had not been adequately investigated; a motivation similar to that of Sanz and Morgan-Short (2004). They also noted the varied significance of input in the literature, relating it to the competition model, connectionism, UG, PI, apperception and Gass's own integrated model. They cited the interaction hypothesis, relating it to the notion of attention, and noted that although interaction is useful as a priming device, further input maybe necessary to complete the internalization. This is pertinent to their interest in the relationship between input and interaction, particularly the order of occurrence and sequence.

The general research question concerned the “effects of material that has (a) an input focus, (b) an interaction focus, (c) an input focus followed by interaction, and (d) an interaction focus followed by input.” (p.8). In order to investigate this, a sample of 102 participants who were monolingual English L1 learners of Spanish were randomly assigned to five treatment conditions: a control group (no input or interaction); an input-only group; an interaction-only group; a group given input followed by interaction; and a group given interaction followed by input. Thus the independent variables consisted of the presence or absence of input and interaction, and their order. Similarly to Sanz and Morgan-Short (2004), the dependent variables consisted of the acquisition of specific language as measured by pretests and posttests. However, this study was crucially interested in the possibility of different acquisition processes for different areas of language. Therefore, the acquisition of three separate language areas was measured. These were: (1) seven vocabulary items least known in a pilot study; (2) noun-adjective gender agreement; and (3) correct use of the verbs *estar* and *ser*. It was argued that these language areas are generally learned late, have high frequency of occurrence, high frequency for error in L2 use, low communicative value, and are absent from English. It was also argued that they differ in complexity and abstractness, which may play crucial roles in preferred modes of acquisition.

This led the authors to hypothesize that: (1) input and interaction and their order would produce significantly different effects; (2) the use of interaction would have a positive effect; (3) the use of both input and interaction would have a significantly greater effect than only one of them; (4) the group exposed to interaction followed by input would experience the greatest effect of all; and (5) distinct

results would be revealed within each language area. The study's approach and its hypotheses involved the following assumptions: (1) input and interaction are assumed to be separate constructs that can be independently manipulated; and (2) since no attempt was made to observe or measure attention directly, it was assumed that interaction will draw learner's attention as part of the acquisition process under investigation.

Apart from the control group, which received no treatment at all between the pre-test and post-test, all the groups (i.e., the experimental groups) received an equal amount of treatment (as measured by time). The composition of treatment, which consisted of a total of two sessions, was manipulated according to the condition. Input was structured around a unified topic to facilitate cognition of meaning, and focus on form was fostered through the activities, which included reading and dealing with pictures, as well as some listening. The native-speaker researcher did not participate in the activities, although interestingly went through the answers to the tasks with the participants in the input sessions, providing further input where necessary. This feature may have the advantage of being a naturalistic input session, but was not clearly described or defined, and could potentially involve a kind of feedback, confounding the conditions and threatening internal validity, as well as limiting replicability and external reliability. The interaction sessions also appeared to have well defined materials and content, but the feedback given by the native-speaker interlocutor was not defined beyond giving implicit feedback. This naturalistic element may contribute to external validity, but at the same time weakens external reliability, as it would not be straightforward to replicate the kinds of implicit feedback given in a repeat or parallel study.

The tests involved a pen and paper text translation which included the vocabulary items, and computer-based acceptability judgments for the other two language areas. The computer-based tests are, of course, easily coded, and this degree of control strengthens external reliability. However, criteria were not specified for how the translations were marked or coded, which makes replicating the study difficult, even though the tasks were included in appendices. The researchers may well be able to provide criteria if asked to do so, but otherwise this weakens external reliability.

ANOVAS did not support the first four hypotheses, as all the experimental groups differed significantly from the control group, but no other differences were found at this level of analysis. However, to test the fifth hypothesis, further ANOVAS and t-tests were carried out. No differences between experimental groups were found for vocabulary, but the only the groups exposed to both input and interaction significantly improved in gender agreement, and only the group exposed to interaction followed by input improved significantly in *estar* + location. It was concluded that complexity of language area plays an important role in determining the need for input and interaction. This seems well-justified by the fact that the statistics for global acquisition showed no differences between experimental groups, whereas significant differences were found between groups for acquisition of individual language areas. It was argued that learners' own devices were most useful in decoding non-complex language areas such as vocabulary items. It was acknowledged that it was not possible to control the interactions or measure the quantities of different types of feedback, and that it was not possible to distinguish between actual learning (i.e., long term internalization) from immediate uptake. This also seems to be true,

especially given that the whole study lasted merely five days for each group, which is very short compared to the longer time spans of other studies. One recent study (McDonough, 2005) lasted 8 weeks. On the other hand, the Sanz and Morgan-Short study lasted between 1 and 3 weeks for the participants, but the post-test came immediately after the treatment.

These two studies have shared some common concerns, and yet have demonstrated crucial differences in their approaches. The approach of Gass and Alvarez-Torres seems to be partly in accord with the conclusion of Sanz and Morgan-Short, in that explicit information may not be necessary if the input is structured in a way that facilitates focus on form, leading to form-function-meaning mappings. However, if the conclusion of Gass and Alvarez-Torres is correct, regarding differences according to complexity and abstractness of the target language area, replications of the Sanz and Morgan-Short study may produce differing results for different language areas. Alternatively, it may be that these effects for language area may only be pertinent to implicit information, if explicit information is not necessary when input is structured along the lines of PI.

Future research should attempt to extend the findings of these studies, by replicating them for different language areas and types of task. It is noteworthy that neither of these studies seems to have paid much attention to possible differences for language skills, namely listening, speaking, reading and writing. Admittedly, the studies have endeavored to detect improvements in knowledge of language forms, which can be used in any of the skills. However, it could be that use of the same knowledge could show different levels of automaticity in

different skills, which could also develop at different rates in each skill. Future studies should be designed to compare improvements across different skills. If there are differences, use of different skills in treatments and tests could lead to confounded results. The limitations of the studies should be addressed by defining the types of feedback to be used in interaction. Follow-up testing should be included. Indeed, practical restrictions permitting, it may be interesting to conduct longitudinal studies to investigate the long term effects of these phenomena.

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