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Classifiers and Learnability: The Role of Recasts

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1. Introduction

A typological feature of Korean and many other languages of Asia is the use of classifiers (counters) with nouns that call for a numeral. The following examples are from Sohn (1999:353).

(1) a. *chayk twu kwen*
book two volume
'two books'

b. *tamnyo han cang*
blanket one sheet
'one blanket'

c. *haksayng sey myeng*
student three person
'three students'

d. *kay yel mali*
dog ten animal
'ten dogs'

As can be seen here, the choice of classifier varies depending on the noun—*kwen* is used with the noun *chayk* 'book', *cang* with *tamnyo* 'blanket', and so on. Sohn (1994:273) lists more than eighty 'major' classifiers for Korean.

The existence of such an elaborate classifier system raises obvious questions about the order in which classifiers are acquired, possible errors and overgeneralizations in their early use, and so on. Although we acknowledge the importance of these questions, we wish to set them aside for the purposes of this chapter in favor of another, perhaps deeper, issue. In particular, we propose to use Korean classifiers as a tool to delve into the role of so-called 'recasts' in the acquisition of language.

We begin our discussion in the next section by examining the nature of recasts and their possible usefulness to language learners. Section 3 returns to Korean classifiers, outlining a way in which the study of their acquisition in an experimental setting can shed light on the role of recasts in language acquisition. We describe an experiment that we conducted and the results it yielded in section 4. Section 5 offers a general discussion and some concluding remarks.

2. The recast issue

A recurring theme in the literature on language acquisition has to do with the possible importance of so-called 'corrective recasts'—adult utterances that repeat all or part of the child's preceding utterance, modifying inappropriate morphological and syntactic patterns. The following examples, from conversations between Eve and her mother, were collected by Moerk (1991).

Table 1: *Some recasts by Eve's mother when Eve was 18 to 27 mos. old*

Eve's utterance	Her mother's recast
It fall.	It FELL?
A butter.	You want SOME butter?
Man up there.	THERE'S A man up there.
Up wall.	ON THE wall, yeah.
Papa buy some.	Papa BOUGHT some for us.
Faster faster as me.	FAST as me?
Well, what you go do?	What am I GONNA do?
Cromer has he glasses on.	Oh, he does have HIS glasses on.
It doing dancing.	IT'S dancing, yes.
That napkins.	Yeah, THEY'RE napkins.
Where's the pencils?	Where'RE the pencils?

There is no doubt that corrective recasts of this sort do occur on a regular basis—indeed, they have been reported in every study that has ever looked for them (Saxton, Kulscar, Marshall & Rupra 1998:702). However, controversy continues as to their role in the language acquisition process, and attempts to establish correlations between the frequency of parental recasts and the development of particular patterns have yielded mixed results to date (see, e.g., Farrar 1992 and Morgan, Bonamo & Travis 1995).

In recent work, Matthew Saxton and his colleagues have pioneered an experimental approach to the study of corrective recasts (e.g., Saxton 1997, Saxton et al. 1998). Making use of novel irregular verbs (e.g., *streep/strept* and *pell/pold*), they devised two situations in which children are exposed to the correct past tense form.

- In the POSITIVE INPUT condition, the children hear the correct past tense form used by an adult to describe pictures (e.g., *Look what happened! The spider pold the grasshopper*), but never encounter corrective recasts in response to errors that they might make when called upon to describe the pictures themselves.

- In the NEGATIVE EVIDENCE condition, in contrast, children hear only uninflected or *-ing* forms of the novel verb (*pell/pelling*) before a past tense form is elicited from them. Errors (e.g., *pelled* for *pold*) are then met with corrective recasts, as illustrated below.

(2) Adult**:** *What happened?*
Child**:** *He pelled him.*
Adult**:** *Yes, he POLD him*

The results of this work suggest that five-year old children who are exposed to corrective recasts learn the past tense form of irregular verbs more quickly and more successfully than do children who receive only positive input. In Saxton's (1997) study, for instance, no irregular past tense form was ever used correctly by the children who received only positive input. In the recast condition, in contrast, the success rate was 29.6% after a single recast.

Saxton interprets these results as support for what he calls the Contrast Theory of Negative Evidence (also known as the Direct Contrast Hypothesis). The key idea is simply that recasts have the impact that they do because the child's error and the adult's correction are directly juxtaposed with one another (Saxton et al. 1998:706).

3. Extending recast studies

A significant concern with experimental studies of any type involves so-called 'ecological validity'—the extent to which the experimental conditions resemble the situations in which language acquisition actually takes place. Saxton et al. defend the ecological validity of their design, noting that their negative evidence condition includes a mixture of corrective recasts and positive input (see the description above) that 'mirrors real life more closely than a situation in which negative input is the sole source of information regarding a grammatical form' (p. 716). At the same time, however, they acknowledge that the provision of a corrective recast in response to EVERY error produced by the child in the negative input condition 'far exceeds the levels witnessed in naturalistic corpora' (p. 717).

Naturalistic input is arguably 'imperfect' in other ways as well, and at least some corpora manifest a quite surprising and hitherto largely ignored distribution of responses to children's errors. Instead of a simple mixture of recasts and move-ons (continuations of the conversation that ignore the child's errors), what is actually found is a three-way concoction of recasts, move-ons, and verbatim repetitions of mistakes.

The existence of verbatim repetitions is of special interest since, as the example below helps illustrate, such parental responses could be construed by the child as approval of the form of his or her utterance.

(3) Adam (28 mos.): *Book.*
Adam: *Read book.*
Mother: *Alright, you read book.*

If children attend equally to all aspects of the input, they might well conclude from verbatim repetitions such as the one in (3) that article use with singular count nouns in English is optional—contrary to fact.

Post (1994:155) reports a sizable proportion of verbatim repetitions of speech errors in her longitudinal study of three two-year olds over a period of nine months.

Table 2: *Proportion of verbatim repetitions of child errors*

Child	Percent of verbatim repetitions
Sally	31%
Melissa	35%
Kalie	21%

There is reason to think that parental responses of this type occur in other languages as well. In an investigation of the naturalistic speech of three Korean-speaking children and their mothers, we found a rate of verbatim responses to errors in the same range as has been reported for English-speaking children.

Table 3: *Type and proportion of parental responses to child errors in Korean*

Child	Sample size	Age range represented	Move-ons	Recasts	Verbatim repetitions
JY	1364 utterances	2;3-2;7	43%	43%	**13%**
P	1438 utterances	2;8-2;11	16%	35%	**46%**
SY	5158 utterances	2;11-3;4	45%	23%	**27%**

The existence of such a large proportion of verbatim repetitions in parental responses to children's errors raises a potential learnability problem. In particular, if children pay attention to feedback from adults, why don't repetitions of their errors discourage development?

This problem could be avoided if children focus primarily on features of parental responses that contrast with those found in their own utterances—just as the Contrast Theory proposes. Under these circumstances, verbatim repetitions would essentially be ignored and would thus be harmless.

This prediction calls for experimental study—a project which we undertake in a preliminary way here with the help of Korean classifiers.

4. An experiment

The key idea underlying our experiment is that the acquisition of Korean classifiers offers an ecologically realistic opportunity to investigate the manner in which children might use recasts to recover from the overly general use of particular forms. In order to explore this idea further, we designed an experiment in which children are exposed to two new classifiers under different input conditions.

We focused on two classifiers—*niph*, which is used for traditional Korean coins that are no longer employed as currency in Korea, and *chep*, which is used for small packets of herbal medicine that are now unfamiliar to most Koreans. We deliberately chose to work with these classifiers because the design of our experiment calls for controlled inputs of various types. The archaic character of these two classifiers makes it highly unlikely that children would have been exposed to them outside the experimental setting.

When adult speakers of Korean are put in a situation where they have to count unfamiliar objects, they make use of the default classifier *kay* (roughly, 'thing'). Because this default form is also the first classifier to emerge in the course of the language acquisition process, we anticipated that children too would have recourse to it when asked to count ancient coins or packets of herbal medicine. By exposing them to the new classifiers under particular input conditions, we can therefore study both the helpfulness of recasts and the possible negative effect of verbatim repetitions.

The next section describes our experiment.

4.1. Subjects

Forty-seven Korean-speaking children participated in the study, twenty-eight girls and nineteen boys ranging in age from 4;1 to 6;5 (mean 5;7). All subjects were residents of Seoul, where the experiment took place.

4.2. Method

The experimenter introduced and elicited the classifiers *niph* and *chep* in contexts that required counting objects of the appropriate type in pictures such as the following.

Figure 1: *Chinese herbal medicine packets and old coins*

Each subject was exposed to a novel classifier in either the first and second or the second and third of the following three conditions:

1. *The positive input condition*: Children heard adults use the new classifiers before being called upon to use them themselves as part of a counting task. No corrective recasts were used in this condition, regardless of the child's responses. The English translation of the protocol used for this condition is given below.

Experimenter:	Look at this picture. Do you know what these are? They are old coins called *yepcen*. In old times, we used these coins to buy candies or crackers. There are many coins in this picture. Let's count them. Let me go first. There are [pointing to each coin] one, two, three, four, *five-**niph*** of coins. [to child] Now, why don't you count them yourself? How many coins are there?
Child:	One, two, three ---five(-kay/niph).
Experimenter:	By the way, there are several different colors. What colors are they?
Child:	Red and blue.
Experimenter:	Wow! You know the color names. Then, I am going to count red coins. We have one, two and *three-**niph*** of red coins. Then, how many blue coins do we have?
Child:	One, two(-kay/niph).
Experimenter:	Right! Then, we have more reds than blues by *one-**niph***.

As the bold-faced items indicate, this protocol presents the child with three exposures to the new classifier.

2. *The recast condition*: Children did not hear the new classifiers before engaging in the counting task. Their inevitable use of the default classifier *kay* was then met with corrective recasts. The following protocol was used for this condition.

Experimenter:	Look at this picture. Do you know what this is? This is *hanyak* (Chinese herbal medicine). In old times, when people were sick, they boiled the contents in this packet and drank it. We still have this kind of medicine. Let's count them. Can you count them? How many do we have?
Child:	One, two, ------*five(-kay).*
Experimenter:	*Five-**chep***! By the way, we have different colors of hanyak. What colors are they?
Child:	Yellow and red.
Experimenter:	Right! Then, how many yellow hanyak do we have?
Child:	One, two, *three(-kay/chep).*
Experimenter:	*Three-**chep***! How about red hanyak? How many red hanyak do we have?

Child: One, *two(-kay/cehp).*

Experimenter: *Two-**chep***! Very good.

This protocol too presents three opportunities (in bold face) for the child to hear the new classifier. In cases where the child used the right classifier in response to the second and/or third question, the experimenter simply repeated his/her response so as to ensure that the input would contain three instances of the new classifier.

3. *The mixed condition*: Children did not hear the new classifiers before engaging in the counting task. Uses of the default classifier *kay* were met with a mixture of corrective recasts and verbatim responses. The protocol employed for this condition is exemplified below.

Experimenter: Look at this picture. Do you know what these are? They are old coins called *yepcen*. In old times, we used these coins to buy candies or crackers. There are many coins in this picture. Let's count them. Can you count them? How many coins are there?

Child: One, two, ----*five(-kay).*

Experimenter: *Five**(-kay)***! By the way, there are several different colors. What colors are they?

Child: Red and blue.

Experimenter: Wow! You know the color names. Then, how many red coins do we have?

Child: *Two(-kay).*

Experimenter: *Two-**niph***! Then, how may blue coins?

Child: *Two(-kay/niph*)

Experimenter: *Two-**kay*** (or *two-**niph***). Very good.

As can be seen here, the experimenter responded to the child's first overgeneralization with a verbatim repetition. The child's second overgeneralization was met with a recast, and his/her third with a verbatim response regardless of which classifier was used. The number of exposures to the new classifiers is therefore necessarily smaller in this condition.

Our design called for two comparisons—one between the positive input condition and the recast condition, and the other between the recast condition and the mixed input condition. For both combinations of conditions, half the subjects were exposed to the conditions in one order and the other half to the reverse order. Table 4 summarizes our design. (There is not an equal number of subjects for each combination of conditions because of the unwillingness or inability of some our subjects to participate in the task.)

Table 4: *Design of the Korean recast experiment*

Conditions	Number of subjects
A. positive input > recast	14
B. recast > positive input	9
C. mixed > recast	13
D. recast > mixed	11

Different classifiers were used in each condition (e.g., *niph* for the positive input condition and *chep* for the recast condition or vice versa), with random variation from child to child in terms of which classifier was introduced in each condition.

Children were exposed to each of the two conditions twice on the first day and twice on the second day. In each case, children participated in a counting task involving apples or umbrellas between the two conditions. This was intended to provide a break from the novel vocabulary items and to increase the enjoyability of the overall experiment.

4.3. Assessment

We assessed the effectiveness of the different input conditions by calculating the number of exposures that precede the child's first use of a new form. This should shed light on two research questions.

First, by comparing children's performance with respect to this measure on the positive input and recast conditions, it should be possible to determine the relative effectiveness of corrective recasts versus simple positive input in drawing the child's attention to the existence of a new form that is appropriate for use in a particular context. If in fact corrective recasts are helpful for this purpose, as claimed by Saxton (1997) and others, children should begin using the new classifier after fewer exposures in the recast condition than in the positive input condition.

Second, by comparing children's performance on the recast and mixed conditions, it should be possible to determine whether the presence of verbatim repetitions reduces the putative advantage of corrective recasts. If it does, subjects will require more exposures to the new classifier before first using it themselves.

4.4. Results

Not all children used the new classifiers in the course of the experiment. This is not surprising—there is no known number of exposures that guarantees acquisition of a new lexical item, and our purpose was not to propose one. Rather, we sought simply to determine whether children find recasts more helpful in general than simple positive input, and whether verbatim repetitions in general have a deleterious effect.

Table 5 summarizes our findings for those children who produced at least one instance of a new classifier in each of the two conditions to which they were exposed.

Table 5: *Mean number of exposures before first use of a novel classifier*

Condition	No. of children	Type of Input	Mean no. of exposures before the first use
A	6	Positive	8.16
		Recast	2.83
B	4	Recast	2.5
		Positive	6.25
C	8	Mixed	1.88
		Recast	2.25
D	2	Recast	2.25
		Mixed	1.25

As can be seen here, the mean number of exposures required to elicit use of a new classifier was dramatically higher when the children were exposed just to positive input than when they encountered recasts—8.16 uses versus 2.83 for Condition A and 6.25 versus 2.5 for Condition B. (Because of the small number of subjects, we did not attempt a statistical test of significance here.)

The contrast between the recasts and mixed input (a combination of recasts and verbatim repetitions) is much less pronounced, as an examination of Conditions C and D reveals. There, we find that a relatively small number of exposures (1.25 to 2.25, on average) sufficed to elicit a first use of the classifier. Of special interest is the fact that the one condition with a sufficient number of subjects to permit statistical analysis (Condition C) manifested no significant difference in the effectiveness of recasts and mixed input by a one-way ANOVA repeated measure test (F=0.797, $p > .05$).

5. General discussion and conclusion

As noted at the outset, our study focused on two research questions. The first issue, which involved an attempt to extend earlier findings for English to Korean, had to do with whether recasts are more effective than simple positive input for the discovery of new classifiers. If the results we have reported here are generalizable, the answer to this question seems to be yes. As noted in the previous section, the children in our study identified and used the new classifiers more than twice as rapidly (i.e., with less than half the number of exposures) in the recast condition as in the positive input condition.

Our second research question introduced the potentially more interesting issue of whether recasts remain effective when used under ecologically realistic conditions—i.e., when interspersed with verbatim repetitions of child errors. Here again, we obtained an interesting result: there was no significant difference in the mean number of ~~mean~~ exposures that preceded first use of the classifier in the pure recast condition and the mixed recast condition.

This latter finding is of some general interest, since it points to an even stronger role for contrast in the exploitation of 'negative evidence' than previously suggested. In particular, the acquisition device seems to be so highly sensitive to differences between the child's utterance and a parental recast that the information gleaned from this contrast can neutralize the potentially misleading influence of verbatim repetitions. Thus exposure to adult repetition of an immature form does not impede discovery of the correct adult form via a recast.[1]

It is important to acknowledge at this point that there is a difference between discovering a new form and coming to use it to the exclusion of competing immature forms. Saxton et al. (1998) have shown that (pure) recasts are conducive to this type of developmental advance, but to our knowledge the issue has not yet been addressed with respect to the ecologically more realistic mixed condition that includes both recasts and verbatim repetitions.[2] This is just one of many issues that deserves attention in future research on the role in input in the acquisition of language.

Notes

[1] Indeed, learners actually come to use the new form more quickly on the mixed condition than on the pure recast condition, although this advantage is not statistically significant. Further attention to this matter in a larger-scale study may be warranted.

[2] Classifier choice in Korean is not the right phenomenon for investigating this matter, since classifiers such as *niph* and *chep* do sometimes alternate with the more generic *kay* that is used for various small inanimate objects in Korean.

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