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INTRODUCTION

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Typological linguistics has made important contributions to our understanding of SLA processes, especially in the early days of SLA research (e.g., Eckman, 1977; Hyltenstam, 1977; Rutherford, 1984). In particular, the noun phrase accessibility hierarchy (NPAH), originally proposed as a generalization based on typological work by Keenan and Comrie (1977), has served as a basis on which many SLA studies are conducted. The NPAH predicts the ease of relativization as a function of the grammatical role of the head noun phrase (NP) modified by the relative clause (RC) observed in languages of the world: subject (SU) > direct object (DO) > indirect object (IO) > oblique (OBL) > genitive (GEN) > object of comparison (OComp). If a language can relativize on a position on the hierarchy, then it follows that any other higher position (or position to the left in the given schematic) can also be relativized on. For example, if a language has an OComp relative (e.g., *the man who I am taller than*), then it has a GEN relative (e.g., *the man whose father I know*) and all of the others higher on the hierarchy (i.e., OBL, IO, DO, and SU).

This typological generalization has been applied to SLA research, and study after study has supported the hierarchy; that is, second language (L2) learners find RCs higher on the hierarchy (i.e., those that are less marked) easier to acquire (e.g., Croteau, 1995; Doughty, 1991; Eckman, Bell, & Nelson, 1988; Gass, 1979; Hyltenstam, 1984; Pavesi, 1986). At the level of empirical observation, the prediction is a particularly robust one; it is treated as a universal of SLA in many SLA textbooks (e.g., Gass & Selinker, 2001; Larsen-Freeman & Long, 1991) and is discussed extensively in most SLA textbooks (e.g., Braidi, 1999; Ellis, 1985, 1994; Mitchell & Myles, 2004).

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The NPAH is important not only because it predicts the acquisition order of RCs but also because the influence of typological markedness on the SLA process is a very important topic that has a strong bearing on theory construction in SLA; that is why it is discussed extensively in SLA textbooks. Research that has tested the NPAH "has been used to test predictions based on markedness" (Ellis, 1994, p. 103) and has been used to test the relationship between instruction and markedness (e.g., Eckman et al., 1988). Because research on the acquisition of European languages has mostly converged to support the NPAH, it might appear that a general consensus has been reached regarding the effect of markedness in the acquisition of RCs in L2. However, whether markedness can be an explanatory principle in SLA is still debated, as seen in the recent debate between Eckman (2004a, 2004b) and White (2004), and there are still disagreements as to why learners follow this prediction (Hamilton, 1995; R. Hawkins, 1989; O'Grady, Lee, & Choo, 2003). Therefore, investigating the relationship between markedness and acquisition remains an important issue in SLA research.

Moreover, apart from the explanation, there is still one major problem regarding the empirical generalization: the types of languages on which the NPAH has been tested. The target languages tested so far have been mainly English and a small number of European languages, such as Italian (Croteau, 1995), French (R. Hawkins, 1989), and Swedish (Hyltenstam, 1984), which reflects the European language bias in SLA. Needless to say, a universal of SLA has to be tested against typologically diverse languages (Jin, 1994; Shirai & Kurono, 1998). This special issue is an attempt to fill this gap in SLA research by investigating the SLA of RCs in East Asian languages.

A NEW DEVELOPMENT IN LINGUISTIC TYPOLOGY

In this regard, a particularly important development in linguistic typology is a recent proposal by Comrie (1996, 1998, 2002) that noun-modifying clauses in many Asian languages (e.g., Japanese, Chinese, Korean) are qualitatively different from those in European languages and should be treated as attributive clauses rather than European-type RCs, based on the observation that relativizability is constrained not by grammatical relations but by semantic and pragmatic factors in these languages. To illustrate, noun-modifying clauses can cover much broader modification relationships in Japanese than in European languages. They can express not only what standard European RCs can (e.g., *the boy who came; the house where he was born*) but also appositive relationships, as in *the news that he died*, by using the same construction. Furthermore, they can also express loose semantic relationships:

(1) *[kookoo nyuusi-ni zettai ukaru] katei-kyoosi*
high:school entrance:exam-DAT absolutely pass tutor
"a tutor (because of whose assistance) (the student) can be sure to pass the high school entrance exam" (Matsumoto, 1997, p. 95)

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This sentence will be interpreted as a SU relative (i.e., the tutor who definitely passes the high school entrance exam) if we base our interpretation on syntax; however, our pragmatic knowledge tells us that it is not the tutor who passes the entrance exam, but the student taught by the tutor. Native Japanese speakers have no trouble interpreting this sentence.

Japanese noun-modifying clauses, which can function in this way, have been discussed by many linguists, but there has not yet been a satisfactory account. Among various proposals, Matsumoto (1988, 1997) offered an explanation based on semantic and pragmatic—rather than syntactic—conditions to determine the availability of noun-modifying clauses in Japanese. Based on her work, as noted earlier, Comrie (1996, 1998, 2002) proposed a new typology that distinguishes Japanese and other Asian languages with similar properties from European-type languages. He claimed that these Asian languages do not have RCs with a gap but, rather, have attributive clauses, which involve simply attaching modifying clauses to the head noun (for further discussion, see contributions in this issue, especially Ozeki & Shirai's article as well as the commentaries by Comrie and Matsumoto).

If this proposal is correct, then it is even more important to test the universality of the NPAH prediction. Note that in both first language (L1) acquisition (e.g., Clancy, Lee, & Zoh, 1986; Hakuta, 1981) and adult psycholinguistics (e.g., Hirose, 2006, and Miyamoto & Nakamura, 2003, for Japanese; Hsiao & Gibson, 2003, and Lin, Fong, & Bever, 2005, for Chinese), noun-modifying clauses in East Asian languages are treated as RCs that involve a gap. In other words, it is generally assumed in the psycholinguistic community that noun-modifying clauses in these languages involve a gap and, therefore, depending on how this issue plays out, we might have to completely rethink what we have been assuming about RCs in East Asian languages. As part of psycholinguistic inquiry, SLA research can and should contribute to this important question (Long & Doughty, 2003).[1]

Recent studies in L1 acquisition have found results consistent with Comrie's (1996, 1998, 2002) new proposal. Diessel and Tomasello's (2000) study on children's conversation and Diessel and Tomasello's (2005) elicited imitation studies with English and German children both clearly supported the predictions of the NPAH, showing the order SU > DO > OBL in production frequency (Diessel & Tomasello, 2000) and in accuracy of elicited imitation (Diessel & Tomasello, 2005). In contrast, Ozeki and Shirai's (2007) study on Japanese children showed that they produced SU, DO, and OBL relatives at the same frequency. These contrasting results might indicate that these two target languages are qualitatively different.[2]

In SLA, research on Asian languages so far has shown mixed results. Tarallo and Myhill's (1983) crosslinguistic study that employed grammaticality judgments followed the NPAH prediction except when the target languages were Japanese and Chinese, which is consistent with Comrie's proposal. O'Grady et al.'s (2003) study of the comprehension of Korean RCs by L1 English learners of Korean, however, supported the NPAH: SU relatives were easier to com-

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prehend than DO relatives, consistent with the prediction of the NPAH. Clearly, we need further testing of the acquisition of RCs (or noun-modifying clauses) in Asian languages.

In this special issue, we bring together studies on L2 Japanese (Kanno, Ozeki & Shirai, Yabuki-Soh) and Korean (Jeon & Kim) and on Chinese-English bilinguals (Yip & Matthews) to address the issues that surround the acquisition of RCs and the NPAH. In particular, we test whether the predictions of the NPAH hold for the languages that are classified as attributive clause languages in Comrie's (1996, 1998, 2002) new typology. In so doing, these articles consider various factors that influence the acquisition and processing of RCs.

THE PAPERS

Ozeki and Shirai demonstrate that the acquisition of Japanese does not necessarily follow the predictions of the NPAH. In their Study 1, Japanese as a second language (JSL) learners in oral proficiency interviews were found to use SU, DO, and OBL relatives even at lower proficiency levels, which suggests that SU is not easier than DO and OBL. In their Study 2, which administered a sentence combination test to Japanese as a foreign language (JFL) learners, they found that there was no statistical difference between SU and DO. In both studies, Ozeki and Shirai found strong associations between SU and animate-head NPs and between DO/OBL and inanimate-head NPs, based on which they argue that the acquisition of Japanese is not constrained by the NPAH but, rather, that learners create animacy-based form-meaning associations based on input distribution.

Kanno tested the listening comprehension of RCs in L2 Japanese, using a picture-matching task—similar to the one used in O'Grady et al.'s (2003) study on L2 Korean—with JSL learners from various L1 backgrounds (Chinese, Sinhalese, Vietnamese, Thai, and Indonesian). She found SU relatives easier than DO relatives for the items in which animacy could determine the interpretation (nonreversible RCs), whereas in the cases without such a cue, the results were mixed. She also found strong effects of learners' L1s.

Yabuki-Soh employed a pretest-posttest design to investigate the effect of different types of instruction on the development of RCs in JFL learners. She found form-based instruction to be more effective than meaning-based instruction. Regarding the NPAH, her pretest result was consistent with the NPAH for the sentence combination task but inconsistent for the comprehension task. Yabuki-Soh also targeted the effect of instruction focused on OBL relatives (a marked RC type), which is known to have a positive effect on the learning of less marked RCs in the hierarchy. She found positive effects of instruction on all RC types, not just OBL, and that the effect was strongest around the RC types near OBL, to the left in the hierarchy (i.e., IO, DO).

Jeon and Kim investigated the acquisition of Korean RCs by dividing them into internally headed and externally headed RCs. In a reanalysis of a study on the effect of form-focused interaction on L2 development (Jeon, 2004), they

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found that in an oral picture description task, externally headed RCs followed the predictions of the NPAH but internally headed RCs did not; they argue that this is because the former involve a gap, whereas the latter do not. They also found that form-focused interaction on DO relatives had a more positive effect on SU relatives than DO relatives.

Finally, Yip and Matthews discuss the development of RCs in Cantonese-English bilinguals. They show that contrary to the NPAH prediction, the Cantonese-dominant bilingual children in their study produced DO relatives earlier than SU relatives. Moreover, their English RCs also emerged from DO relatives, presumably under the influence of the more dominant Cantonese.

The data from Asian languages presented in this special issue constitute an important addition to the crosslinguistic literature on the acquisition of RCs, which has been heavily biased toward English and other European languages. In addition to these empirical studies, the special issue includes nine invited commentaries from experts on RCs from the fields of linguistics and SLA that—needless to say—present invaluable insights into this important question. In what follows, we suggest some generalizations that can be drawn from these studies and commentaries as well as additional questions that need to be asked in order to reach a full understanding of the issues that surround the acquisition of RCs and the NPAH in SLA.

Does the Acquisition of Asian Languages Follow the NPAH?

In response to this question, the articles in this special issue show mixed results. Ozeki and Shirai clearly demonstrate that the NPAH is not strictly followed in the acquisition of Japanese, that DO and OBL relatives develop as early as SU relatives (Study 1), and that there was no statistically significant difference between SU and DO relatives in the accuracy of sentence combination (Study 2). Yip and Matthews also report that DO relatives emerge earlier than SU relatives in Cantonese. Yabuki-Soh presents pretest results indicating that performance on the comprehension task did not follow the NPAH, whereas performance on the sentence combination task did. Kanno shows that in the case of nonreversible RCs and generally with reversible RCs, learners found SU relatives easier, with the clear exception of Chinese L1 learners, who found reversible DO easier than SU. In contrast, Jeon and Kim found that SU relatives develop earlier than DO, at least for externally headed RCs.

Thus, regardless of the explanation for the phenomenon, it appears that the generalization with regard to the acquisition of East Asian languages as L2s seems to be quite different from the generalization that holds for the acquisition of European languages, which have consistently followed the NPAH. Let us turn to the discussion of why such differences are observed.

The Role of Animacy

One thing that becomes clear in these articles is the role of animacy in the acquisition of RCs. Ozeki and Shirai's analysis of learner data is revealing, in

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that learners initially created a strong association between SU and animate head nouns and between DO and inanimate head nouns. Jeon and Kim's study shows that learners prefer to use SU over DO, but, at the same time, they show strong associations between SU and animate heads and between DO and inanimate heads. These results suggest that these prototypical combinations of animacy and RC types are acquired early in the acquisition process. Not only that, but it is plausible that learners find animate-head SU relatives easier than inanimate-head DO relatives, as suggested by the error analysis in Ozeki and Shirai's Study 2. If so, SU primacy in Jeon and Kim's study can be likewise accounted for by animacy. Kanno's nonreversible items, for which learners had higher accuracy for SU relatives, in fact all involved animate-head NPs for SU (e.g., *[udon-o tabeteiru] otokonohito* "the man [who is eating noodles]") and inanimate-head NPs for DO (e.g., *[otokonohito-ga tabeteiru] udon* "the noodles [the man is eating]"). Therefore, higher accuracy with SU than with DO can also be explained if animate-head SU relativization develops earlier than inanimate-head DO relativization. In other words, the subject primacy observed in both Kanno's study and Jeon and Kim's study might be attributable to the association that learners create at early stages of development, as suggested by Ozeki and Shirai. In any event, the exact relationship between grammatical relations and animacy in the acquisition of RCs must be clarified in future investigations (see Diessel's commentary for further discussion of this issue).

Regarding the role of animacy, an interesting difference between L1 acquisition and SLA must be noted here. Ozeki (2005) found that L1 Japanese children associated SU relatives with both animate- and inanimate-head NPs. In fact, children rarely use RCs with animate-head NPs and, therefore, there are more SU relatives with inanimate heads than with animate heads; the same is true of caretaker speech. This is somewhat surprising because associations between animate heads and SU relatives and between inanimate heads and DO relatives is observed not only in native Japanese speech[3] (oral interview, as shown in Ozeki & Shirai, this issue) but also in newspaper corpora in German and Dutch (Mak, Vonk, & Schriefers, 2002).[4] Ozeki attributed this difference between child data and adult data to topic factors and communicative needs; that is, in caretaker-child interaction, children often talk about humans who are already common knowledge in discourse, thus the children do not have to give these humans additional attributes with RCs, whereas they need to identify objects and other things in order to talk about them (e.g., *yakyuu suru mono* "the things with which we play baseball"). This suggests that topic and task factors as well as learners' ability will be reflected in production data. Therefore, we should always consider how native speakers would use target items, and multiple factors need to be considered in interpreting learner data. More generally, we should, whenever possible, examine frequency distribution in native discourse to look for possible sources for acquisition patterns. There is often a surprising gap between what we think we do and what we actually do (Hopper, 1997).

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Methodological Issues

Based on the review of the literature and the results reported in the articles included in this special issue, we can note that at least in the acquisition of Japanese as a L2, a different methodology appears to yield quite different results. One possible trend is, as Kanno points out, that comprehension studies are affected by various factors, whereas production studies (including sentence combination tasks) tend to be more consistent with the NPAH. If indeed this is the case, one must ask why. One possibility is that learners might have freedom to produce what they prefer to produce in production tasks even if researchers intend to have them produce particular structures, which results in a more direct reflection of their current ability. In contrast, comprehension is influenced by various extraneous variables that researchers do not intend to test.

More generally, it is very difficult to tell why a particular answer is chosen in a comprehension study. It is even possible that learners do not process given strings as RCs but process them as simple sentences, as has been shown in L1 research (e.g., Tavakolian, 1981), even though researchers assume that all learners process such input as RCs. In contrast, things are more transparent in the case of production data: If the learner cannot form a RC, this is evident in nontargetlike surface forms.

This difficulty might be reflected not only in the NPAH studies undertaken on Asian languages but also in those on European languages. To our knowledge, there are only two published studies (Hansen-Strain & Strain, 1989; Izumi, 2003) that used comprehension tasks in testing the NPAH in European languages, and both employed a multitask design. Izumi used grammaticality judgment, sentence combining, and comprehension tasks with the same L2 English learners. He found that sentence combination and grammaticality judgment tasks partially supported the NPAH, with SU found to be significantly easier than DO, but there was no difference between DO and the object of a preposition (i.e., OBL). Izumi did not find support for the NPAH in the comprehension task because the effect of the RC type was not significant (see Izumi's commentary in this issue for details). Hansen-Strain and Strain used seven tasks: listening comprehension, oral picture description, oral retelling, written retelling, essay, sentence combining, and grammaticality judgment. They interpreted the results from learners with five different L1s (Samoan, Tongan, Japanese, Korean, and Chinese) to be generally consistent with the NPAH, except for GEN. A closer look, however, reveals that the accuracy scores from the comprehension task (on a 6-point scale) are somewhat problematic; although SU (3.62) was easier than DO (2.7), it was no different than IO (3.58), which is predicted to be much more difficult than SU.[5] Thus, it appears that even in English, results from comprehension tasks do not necessarily support the NPAH.

So what is the direction we should take in addressing the issue of whether Asian languages follow the NPAH? We suggest that researchers should systematically replicate studies on European languages that have shown them to fol-

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low the NPAH, rather than coming up with new methodology and analytical methods. Because most of the studies on the SLA of RCs have been done with sentence combination and grammaticality judgment tasks, we should first systematically replicate European language studies with Asian languages.[6] Given that results of comprehension tasks are not always consistent with the NPAH, even in English, the first task we should focus on is to use sentence combination and grammaticality judgments to test RC acquisition in Asian languages. Eventually, we should pursue a single crosslinguistic study using similar instruments and comparable participants in two (or more) European and Asian languages, whether it involves comprehension, production, or grammaticality judgment.

Two methodological issues raised in Eckman's commentary in regard to testing the NPAH are important and need to be addressed. First, Eckman argues that whether the NPAH is a constraint on not just natural languages but also on interlanguage grammar needs to be tested by looking at data from individual learners. This is an important point and it should be the next project for the authors of the articles included in this issue (except Yip & Matthews) to reanalyze their data for individual learners. We should note, however, that almost all NPAH studies (including Eckman et al., 1988, as he acknowledges) looked at group data, and we must follow their protocols in order to make a principled comparison between European and Asian languages.[7] The second point made by Eckman (see also J. Hawkins' commentary) might be conceptual as well as methodological. Eckman argues that the appearance of SU, DO, and OBL at the same time does not go against the NAPH, as originally proposed, as far as typological generalization is concerned. This point is valid and well taken. However, when the NPAH is applied in acquisition and processing, it can be reformulated in a different way, and such reformulations are in fact very common in the literature. Assuming that the NPAH eventually stems from processing ease, it is only natural to hypothesize that unmarked relatives are easier than marked relatives (which is in line with Jakobson's approach, discussed in J. Hawkins' commentary). Thus, Keenan and Hawkins (1987) applied the NPAH to predict L1 processing difficulty, and most L2 studies, starting with Gass (1979), have used it to predict acquisition difficulty. In other words, processing difficulty is the higher order explanatory principle that determines both the NPAH as a typological generalization and the difficulty of acquisition. This is actually a powerful feature of the NPAH prediction that has helped its popularity in SLA (see also the relationship between cultural complexity and the NPAH, discussed in the next subsection). Restricting ourselves to its original formulation at this point will limit the application of the NPAH a great deal.

The Role of L1

Although previous research with European languages focused on the universal aspects of the NPAH and suggested that the predictions of the NPAH hold

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regardless of L1 (e.g., Gass, 1979; Hyltenstam, 1984), the articles in this special issue suggest this is not necessarily the case for Asian languages. In particular, Ozeki and Shirai's Study 1 shows different patterns for Korean speakers than for speakers of other L1s, and Kanno's study clearly shows very different results depending on learners' L1s. Yip and Matthews' study strongly indicates that their bilingual children's early production of DO relatives in English stems from the influence of their more dominant language, Cantonese.

Here, we need to consider two possibilities. One possibility is that European languages follow the NPAH regardless of learners' L1s, whereas Asian languages are not so strongly constrained by the NPAH and the effect of L1 figures more prominently. The other possibility is that L1 effect is strong even in the acquisition of RCs in European languages, and previous research simply did not focus on its effect. This question must be addressed in future research.

Projection Effects

Yabuki-Soh's article makes an important contribution in that it is the first study in which projection from marked items to unmarked items, observed in previous research on European languages, is tested in a non-European language. What she found is generally consistent with the results from studies on European languages: Instruction on a marked position on the hierarchy has a positive effect on other positions higher in the hierarchy. This might suggest a universal applicability of the projection effect in the acquisition of RCs. However, we must hasten to add that in Yabuki-Soh's study, only OBL was instructed, and there is no guarantee that teaching on SU (the most unmarked position) would not project to RCs of lower positions in the hierarchy in Japanese. We therefore need to replicate a projection study (e.g., Eckman et al., 1988) in Japanese (and other Asian languages) to test whether the effect of projection is universal.

Why the NPAH?

Keenan and Comrie (1977) mentioned that the NPAH is ultimately an outcome that reflects the processing difficulty of different types of relativization.

> Given that the HCs [hierarchy constraints] do make correct predictions about RC formation in a wide range of languages, it is natural to wonder why this should be so. We propose the following explanation: *The AH directly reflects the psychological ease of comprehension*. That is, the lower a position is on the AH, the harder it is to understand RCs formed on that position. (p. 88)

J. Hawkins (1994, 1999) proposed a processing theory that tries to explain why we observe the NPAH reflected in both linguistic typology and language processing and acquisition; he suggested that complexity be measured in terms

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of the number of nodes and structural relations that need to be computed in order to match the RC head with the position relativized on.[8]

An interesting study that supports this notion is Perkins (1992). This study tested the correlation between cultural complexity and various linguistic correlates across languages of the world. Cultural complexity is a scale used in sociology and anthropology to measure the complexity of a society, which roughly corresponds to its degree of urbanization and industrialization. Perkins found a significant correlation between cultural complexity and the degree to which a language can relativize down the hierarchy; that is, the higher the cultural complexity of a society, the lower down the hierarchy its language can relativize. Taken together with the results of Keenan (1975), which showed that complex writing includes more RCs from the lower end of the hierarchy, Perkins' finding might indicate the important role of literacy in the development of relativizability down the hierarchy; that is, the decontextualized nature of particular discourse requires the speaker or writer to encode complex information in a compact manner, which facilitates the development of more complex RC types in a language.[9] This also indicates functional motivation for the development of grammatical systems across languages in line with functional-typological linguistics (e.g., Bates & MacWhinney, 1982; Bybee, 1985; Croft, 2001).

CONCLUSION

This special issue cannot provide definite evidence for or against the question of whether noun-modifying clauses in East Asian languages are attributive clauses that are qualitatively different from European-type RCs. The results from the articles included in this special issue have left many more questions than they have answered. However, one thing seems to be clear: Before reading this special issue, many SLA researchers would have said "yes" if they were asked, "Is the NPAH a universal in the SLA of RCs?" We believe that those who have read this special issue would now say, "Well, I'm not so sure."

NOTES

1. One issue that comes up in the commentaries (e.g., Gass & Lee) concerns whether data from SLA should count as evidence for or against a theory in cognitive science—in particular, linguistics. Our position is this: Even though SLA data by itself cannot prove or disprove a particular position in linguistics, it can provide important evidence. When evidence from linguistics is ambiguous (in the sense that linguists cannot agree on one position), one often relies on evidence from psycholinguistics and neuroscience. A well-known example is the words-and-rules theory (e.g., Pinker, 1999), although the theory is still highly controversial (e.g., McClelland & Patterson, 2002). Importantly, SLA data have been brought in to support this theory (Silva & Clahsen, in press; Ullman, 2005).

2. Also from semantic and pragmatic perspectives, it was found that both in L1 acquisition (Ozeki & Shirai, 2005) and SLA (Ozeki, 2004), Japanese noun-modifying clauses develop from those that describe stative attributes of the head noun, as an extension of adjectival modification (see also similar findings in Cantonese from Cantonese-English bilinguals; Matthews & Yip, 2002). This is in sharp contrast to L1 English acquisition (Diessel & Tomasello, 2000), which shows that early RCs are presentational relatives. Such a qualitative difference, Ozeki and Shirai argued, suggests that RCs in English and Japanese are fundamentally different.

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3. In fact, the correlation between animate head and SU is so strong that it was very difficult to come up with inanimate-head SU sentences in Ozeki and Shirai's Study 2, so much so that all inanimate-head SUs involved a humanlike head noun (i.e., truck, ambulance, company, university; see Matsumoto's commentary), which was necessary because we used two-place predicates to control for the possible effect of the number of arguments. This might be partly responsible for the lack of a significant animacy effect. Therefore, it is all the more noteworthy that error patterns and low-score learners were heavily influenced by animacy.

4. For example, although they only looked at SU and DO relatives and excluded RCs with pronominal heads or intransitive verbs, Mak et al. (2002) found that 98.6% animate-head RCs were SU relatives, whereas 97.5% of DO relatives had inanimate-head NPs in their Dutch corpus.

5. Hansen-Strain and Strain (1989) did not report these percentages; the percentages here are calculated based on their Table 6. They also did not run a significance test for this comparison.

6. See Polio and Gass (1997) for a discussion of why SLA researchers use a new methodology rather than replicating earlier studies using the same methodology.

7. In this regard, it should be noted that a few studies in European languages that supported the NPAH looked at individual patterns by using implicational scaling (Doughty, 1991; Hyltenstam, 1984; Pavesi, 1986) and that a few case studies discussed by Ozeki and Shirai (Schumann, 1980; Mellow, 2006) followed the NPAH prediction.

8. Different theories have been proposed to explain why we observe the NPAH reflected in SLA, but these theories generally only pertain to part of the NPAH and often make predictions that differ from those of the NPAH. These include the linear distance hypothesis (R. Hawkins, 1989; Tarallo & Myhill, 1983), the implicational generalization hypothesis (Hamilton, 1995), and the structural distance hypothesis (O'Grady et al., 2003; Wolfe-Quintero, 1992).

9. Counterexamples are often cited against this kind of correlational evidence. For example, one might cite a language that has a long tradition of literacy but does not relativize far down the hierarchy. However, here, a counterexample game does not work because there might be other factors that influence the development of relativization in a language. A language might prefer coordination over subordination, which prevents it from developing complex RC types. The important point to remember is that there is no other plausible explanation for the correlation found by Perkins (1992).

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