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FREQUENCY EFFECTS, NOTICING, AND CREATIVITY

Factors in a Variationist Interlanguage Framework

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Ellis's target article suggests that language processing is based on frequency and probabilistic knowledge and that language learning is implicit. These findings are consistent with those of SLA researchers working within a variationist framework (e.g., Tarone, 1985; Bayley & Preston, 1996). This paper provides a brief overview of this research area, which has developed useful models for dealing with frequency effects in language use, and describes a psycholinguistic model of language variation currently being proposed by Preston (2000a, 2000b) that dovetails nicely with Ellis's proposals. The present commentary addresses the question "To what extent is the learner's interlanguage passively and unconsciously derived from input frequencies?" Ellis does state that factors other than frequency are also important for SLA—specifically, conscious noticing and social context. A related factor is the learner's creativity, revealed when learners' noticing leads them to view utterances not just as potential objects of analysis but as potential objects of language play. Noticing results in the selective internalization of language input in interactions with various L2 speakers, and creativity occurs in the learner's consequent production of any of a range of different voices thus internalized for the purposes of expressing social identity and of language play (Tarone 2000).

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Nick Ellis reviews evidence that language processing is based on input frequency and probabilistic knowledge and that language learners are sensitive to the frequency of language constructions in all domains. Ellis concludes that learners' language knowledge is thus both implicit and probabilistic; even their own introspections do not provide an accurate picture of their language processing. The evidence presented by Ellis in the realm of language processing is a welcome confirmation of work independently done by variationist sociolinguists and SLA researchers (e.g., Bayley, 1994; Broner, 2001; Parrish & Tarone, 1988; Tajika, 1999; Tarone, 1979, 1985, 1988, 1998; Young, 1991) over the last two decades. It is also consistent with and supportive of a psycholinguistic model of language variation currently proposed by Preston (2000a, 2000b). (Comprehensive in its scope, the Ellis review nevertheless focuses solely on language processing by adults. For research on L2 acquisition in children that takes a cognitive and processing perspective, see Kohnert, 2001; Kohnert & Bates, in press; and Kohnert, Bates, & Hernandez, 1999.)

This paper will (a) describe the work of SLA researchers operating in a variationist framework, work which is consistent with findings cited by Ellis, (b) describe Preston's model of language variation, and (c) discuss the importance of creativity as a factor that counterbalances and organizes the forces of frequency in the input.

VARIATIONIST SLA RESEARCH

Although Ellis does review some mainstream work in sociolinguistics, he just mentions but does not review SLA research done in a sociolinguistic framework. A number of so-called variationist SLA researchers have taken frequency into account in their analysis of interlanguage data and considered the implications of this analysis for SLA theory. Tarone (1985, 1988) and Preston (1989) have summarized work in this area and argued that quantitative sociolinguistic assumptions and models also apply to interlanguage data and should be used in SLA research. These proposals have not, on the whole, been accepted in mainstream SLA research. Preston (1996) identifies a gaping hole in the domain of SLA research: a "relative neglect . . . of the insights to be gained from the quantitative study of interlanguage variation" (p. xiv). He argues that this neglect is due to a fundamental misunderstanding on the part of SLA researchers of the discipline of sociolinguistics. Bayley and Preston (1996) propose to remedy that defect by providing (a) a clear rationale for the use of quantitative sociolinguistic methods to study interlanguage variation, (b) seven exemplary studies (e.g., Bayley, 1994) that use sociolinguistic methods of multivariate analysis of linguistic variation for this purpose, and (c) a practical, step-by-step manual (Young & Bayley, 1996) on how to use VARBRUL computer programs to analyze variable interlanguage data. VARBRUL is a tool that may contain the characteristics mentioned by Ellis as desirable: It creates

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a model of the speaker's language use that incorporates sociolinguistic variables (of both social and linguistic context), in which the strengths of the weights of these variables are empirically determined rather than set by the modeler.

Studies that have used VARBRUL to create complex models of interlanguage and bilingual language use include Bayley (1994), on factors affecting past-tense marking in Chinese-English interlanguage; Broner (2001), on factors affecting fifth-graders' use of English versus Spanish in Spanish immersion classrooms; Tajika (1999), on factors affecting tense-aspect marking in Japanese-English interlanguage; and Young (1991), on factors affecting plural marking in Chinese-English interlanguage.

These studies demonstrate that second language learners' interlanguages exhibit the same sociolinguistic characteristics as any other language: "Subtlety, consistency, and regularity . . . in speakers' use of statistical linguistic variables and hearers' reactions to them" (Sampson 1980, p. 128–129, cited in Ellis, this issue).

The major problem for researchers in this area, from the beginning, has been how to understand the psycholinguistic nature of variable speech performance. (This is a problem both for mainstream sociolinguists and for SLA researchers using a sociolinguistic approach.) In SLA research, the problem may be phrased this way: Given that learner interlanguage *use* is systematically variable, how do we characterize what second language learners *know* at any given point in time? If we can characterize that, how do we describe the longitudinal process of SLA? Early attempts to address the problem in SLA circles were unsuccessful (see R. Ellis, 1985, 1990; Gregg, 1990; Tarone 1983, 1985, 1988, 1990). The possibility, proposed by Tarone and R. Ellis in the works just cited, that learner knowledge was itself variable and probabilistic, and the conceptual frameworks they worked out to model that knowledge, were impossible for Gregg—and apparently for others as well—to reconcile with the generative construct of competence. Variation, in Gregg's view, was solely a characteristic of language performance, and had nothing to do with language competence. He railed against the idea that variable rules generated by VARBRUL analysis might have psychological reality of any kind, and asked: "Do we really want to claim that a speaker knows, whether consciously or unconsciously, the probabilities for the production of a specific form?"(p. 372).

It is most interesting that Ellis now claims exactly that: "[Grammatical] representations must have variable strengths reflective of their frequency, and connections must similarly be variable in weight" (p. 163). What is more, this view of learner knowledge itself as inherently variable is also an essential claim of Preston's new (2000a, 2000b) psycholinguistic model of language variation. Preston's model, although it does not originate in connectionism or in research on language processing, dovetails very nicely with Ellis's views on the variable nature of linguistic knowledge.

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PRESTON'S MODEL OF LANGUAGE VARIATION

Preston's current (2000a, 2000b) version of a psycholinguistic model of language variation, developed from earlier versions (1989, 1996), directly addresses the central problem posed in the previous section by variationist SLA researchers. The problem is, first, how we characterize what second language learners *know* at any given point in time, when their performance at any given point in time is systematically variable and, second, how we then describe the longitudinal process of SLA.

Preston (2000a, 2000b) offers a psycholinguistic model that can contain linguistic representations for three kinds of language variation. A Type I psycholinguistic representation licenses use of different linguistic constructions depending on such social context factors as interlocutor or level of formality (Preston, 2000a, pp. 4 ff.). Much work on interlanguage pragmatics describes Level I language variation. At this level, the choice can be viewed as either a choice between two competences (a generative solution) or a choice between two forms within the same competence. Selection of one or the other construction is achieved via a probabilistic sociocultural selection device, which operates in the way a weighted two-sided coin might operate in a coin toss (Preston, 2000a, pp. 10–11). For example, the coin is weighted one way for utterances directed to one interlocutor and another way for utterances directed to another interlocutor. Ellis's description of language processing gives us a good idea of how those weights might come to be established in the first place, in light of "our incessant unconscious figuring" (p. 146).

In Preston's (2000a, 2000b) model, a Type II psycholinguistic representation licenses the influence of one (or more) linguistic factor(s) on another linguistic factor. Preston (2000a, pp. 13 ff.) cites several studies that document this type of influence, including Berdan's (1996) reanalysis of Alberto's interlanguage, which contained both *no* and *don't* negation (cf. Schumann, 1975). Berdan shows that subject NP influenced the choice between *no* and *don't*, with, for example, no overt NP preferring *no* and *I* preferring *don't*. Preston rejects the notion that someone like Alberto might have two different grammars, one for *no* negation and another for *don't* negation. Rather, he suggests that there might be a grammar with double classification in the lexicon with probabilistic influences on their selection. Thus, Level I and Level II psycholinguistic models describe "not only a grammar whose variable elements are preferred by sociocultural facts but also probabilistically constrained by accompanying grammatical, information status, and other cognitive facts" (Preston, 2000a, p. 17).

In addition to the above, Preston's (2000a, 2000b) model includes the effects of Type III language variation, which is variation over time—that is, language change and language acquisition. To account for this type of variation, Preston's model affords two possibilities: a grammar (the native language grammar) that contains modules, some of which are weaker than others; and two coexisting grammars, one of which (the interlanguage grammar) is weaker

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in its entirety than the other. In such grammars, the "vernacular" (first-learned form of the language) is stronger in the sense that it is more deeply embedded. We are more fluent in our vernacular. Other language forms (native or nonnative) are postvernacular, less deeply embedded, and weaker. We are always less fluent in the postvernacular. The notion that language constructions internalized in the postvernacular period are always weaker parts of the grammar relates to the traditional notions of style and attention in sociolinguistics. Some items can only be produced by careful monitoring because they are not as well embedded; even then, they may not be retrievable or "correctly" retrievable (Preston, 2000, p. 25).

Preston's elaborated Level III psycholinguistic model of language variation (2000a, p. 26) is incomplete. His concept of weaker interlanguage grammars and weaker parts of grammars requires substantiation from the sort of research on psycholinguistic processes reviewed in Ellis's target article. Additionally, the model cannot fully determine the output of either native or interlanguage grammars because the speaker's intention plays a role in activating the sociocultural selection device (p. 27). Preston points out:

> The "intention" of a speaker may . . . interact with his or her sociocultural identity. That is, one may choose to "perform" (or perform to a greater or lesser extent) an available sociocultural identity, and such choices must play a role in the activation of the selection determined by sociocultural selection. (p. 27)

Such intentional choices to perform particular sociocultural identities are expressions of speaker creativity, a topic to which we now turn.

LEARNER INTENTION

One difficulty with Ellis's strong emphasis on the importance of frequency effects in constructing theories of language acquisition is that it may lead us to think of the second language learner's interlanguage as something that is, in its entirety, passively and unconsciously derived from raw input frequencies, and passively and unconsciously accessed in performance. Ellis does acknowledge that frequency of input is not the only causal factor in SLA, and discusses such factors as noticing (important in the initial registering of new linguistic representations) (pp. 173–174). He also includes context as one of the key factors that activate schema, the others being frequency and recency (pp. 161–162). However, in spite of these provisos, Ellis's strong focus on language processing as implicit and something we cannot consciously control may cause us to ignore the central importance of learner creativity, which must also have a prominent place in our theories of SLA. Learners' noticing of language forms must lead them to see those forms as potential objects of analysis (G. Yule, personal communication, July 30, 2001); their creativity can then lead them to see those same forms as potential objects of language play.

Preston's sociocultural selection device, as we have seen, provides for a

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learner's communicative intention, which involves choice, and may be quite conscious, to initiate the unconscious process of language processing. The learner intends to interact with various speakers for various purposes, and it is in the process of such meaningful interactions that the learner obtains linguistic input and scaffolding for acquisition (Lantolf & Appel, 1994). After exposure to different patterns of frequency in the language constructions used by different individuals in the learner's social network, the learner may selectively internalize the language varieties used by some of those individuals. Scholars such as Swain and Lapkin (1999) have used a Vygotskian framework to examine the way in which a learner's developing interlanguage may receive active support from conversation partners. When a learner attempts to produce utterances containing language items that are in that learner's Zone of Proximal Development (ZPD)—that is, items that are in the process of being acquired—the conversational partner helps to co-construct utterances using those items. In different interactions, the learner acquires different language varieties, or "voices" (Bakhtin, 1981, 1984). Each voice may have its own distinctive pattern of frequencies of linguistic constructions and pragmatic characteristics. These voices may become, as in Preston's (2000a, 2000b) model, weaker parts of the learner's grammar, but they are there and may be accessed via the sociocultural selection device. Importantly, the learner appears to be *selective* in incorporating voices; although frequency in the input is important, the learner may also notice and adopt voices that are not particularly frequent in the input but that are socially important to the learner.

A learner may produce these different voices for a range of different reasons, one of which may be the need to assert a particular social identity. For example, international students studying at U.S. universities need to learn a more formal, academic English variety for use in classroom interactions and written communications in their field of study. Their identities as accepted members of their academic discourse communities rely on their ability to master the genres used by those discourse communities. Research on language for specific purposes, and specifically on genre analysis (e.g., Swales, 1990) has done much to describe the nature of different genres of academic English and the way they are used by discourse communities. Peirce (1995) also has discussed the role of language in mediating learners' assertions of their various social identities in new social settings.

Yet another reason for using these different voices is to express creativity in language play (cf. Tarone, 2000; Broner & Tarone, 2001). Ellis refers to language play when he mentions the humor involved in deliberate violations of normal frequency-derived expectancies: "The surprise that results from breaking the usual frequency-driven expectancies in language processing underpins both the processing regressions necessitated by garden-path sentences and the humor of puns . . . in which idiomatic meaning overtakes literal interpretation" (p. 160). He suggests a role for creativity in language learning; learners

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can entertain themselves by intentionally using a low-frequency item in place of an expected high-frequency item.

Preston (2000a) concurs. He describes two language forms that co-occur in his knowledge base, exemplified by sentences such as (1a) and (1b).

(1) a. *If I had more money, I'd buy a BMW.*
b. *Had I more money, I'd buy a BMW.*

Preston states that only sentences like (1a) belong to his vernacular. He would only use sentences like (1b) "to imitate (probably sarcastically) a high-falutin' style (or, more likely, to mock such a speaker)" (p. 24).

Language play, in other words, is the expression of the speaker's creativity in deliberately, consciously choosing to violate normal expectancies of language use by playing off different varieties against one another, for the sheer purpose of enjoyment and entertainment. We enjoy and find humorous such expressions of individual creativity and freedom from normal frequency-driven expectations.

Cook (2000) identifies two basic kinds of language play: (a) play with language form (e.g., the sounds of language, rhyme, rhythm, song, alliteration, puns, grammatical parallelism); and (b) semantic play, which involves the creation of imaginary worlds, or fictions. The more advanced the linguistic abilities of the speaker, the more capable the speaker is of engaging in both play with language forms and semantic play (e.g., irony, sarcasm or "double voicing" [Bakhtin, 1981], and parody). Language play crucially relies on the fact that individuals master, at a single point in time, many different genres, registers, dialects, and other varieties of language:

> It is, after all, precisely in the light of another potential language or style that a given straightforward style is parodied, travestied, ridiculed. The creating consciousness stands, as it were, on the boundary line between languages and styles. Only polyglossia fully frees consciousness from the tyranny of its own language and its own myth of language. Parodic-travestying forms flourish under these conditions. (Bakhtin, pp. 60–61)

Tarone (2000) cites examples of language play in the performance of second language learners from numerous studies over the last 25 years. For example, Peck (1978) has documented playground conversations between two 7 year olds: Joe, a native speaker of English, and Angel, a Hispanic who was learning English as a second language. In many of these conversations, Joe made fun of Angel's pronunciation by imitating and parodying it. Here, sound play and semantic play both occurred. Joe parodies Angel's accented interlanguage word *camera*, singing it, speaking it in the voice of a circus barker, producing it sing-song, then loudly, then softly—that is, producing the same word in many different accents and voices, as seen in (2) (from Peck, 1978, p. 395).

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(2) Angel: *//That is//.*
Joe: *//And—a//.*
A: *Camera—/l/—is camera.*
J: (mocking his accent:) */gœmera/!*
A: *Camera.*
J: */gœmera/.*
A: *Like—tha'—you have camera? //I like—//*
J: (to the tune of "Camelot") *Ca//mera!// Camera! Camera!*
A: *CAmera.*
J: (circus barker's voice) *Announcing the mighty gamera!* (laugh)
A: (louder) */kœ/—/me/—/ra/*
J: (sing-song) *GAmera.*
A: (irritated, shouting:) *Camerá.*
J: (laughing, loud) *GAmera.* (softer:) */gamera/*
A: (soft, laughing) */gamera/.*

Joe and Angel deliberately introduce variation into their production of frequently heard and produced phonological patterns; they are deliberately "wrong." Rampton (1995) documents many examples of playful, mutual insult using double voicing (Bakhtin 1981) in a kind of parody. Often the use of a kind of Panjabi variety served the additional social purpose of subversion in classroom discourse, when the students deliberately used it to undercut the teacher's power in the classroom. Just as often, the students used this variety to entertain one another in games among themselves. Broner and Tarone (2001) provide many other examples of language play in the discourse of Spanish immersion students.

Tarone (2000) argues that language play may affect the process of SLA in several ways, among them:

> Semantic [language play], which involves the imaginative creation of fiction, may provide, for those learners who engage in it, valuable exposure to and practice in "double voicing": using sociolinguistically marked varieties of the L2. Producing the accents and rhetorical stances stereotypical of a range of sociolinguistic roles may play a role in fostering growth of sociolinguistic competence in L2. Play with language forms usually means producing linguistic forms which are alternative to the "normal" or prosaic form. Such play provides potential evidence of an IL system in flux, open to manipulation and change in a direction that includes modification of previously learned forms. Such play is possible because of the permeability of the IL system, as a complex dynamical non-linear system, to alternative rules and forms, and engaging in such play helps to keep the IL system permeable, or destabilized. (p. 45)

Thus, language play, an expression of speaker creativity, may provide a counterbalancing force to "the usual frequency-driven expectancies in language processing" (Ellis, p. 160). That force may, among other things, help to promote a certain permeability, or openness to change, in the interlanguage, thus preventing fossilization and promoting further development.

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CONCLUSION

In this commentary, I hope to have registered strong support for Ellis's position that frequency effects are very important in the process of second language acquisition and that our theory construction should take those effects into account. I have pointed to Preston's (2000a, 2000b) psycholinguistic model of language variation as a potentially useful example of such a theory. Additionally, I have urged that such models should also provide a central role for learner creativity as a factor in mediating frequency effects in language, as learners notice and intentionally manipulate variables in their interlanguages to assert different social identities or for entertainment in language play.

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