The Ecology of Language Learning

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This presentation is an overview of some of the main elements of an ecological approach to language learning (including second and foreign language learning). The ecology of language learning is discussed in terms of four related processes: 1) perception and action in semiotic contexts; 2) the emergence of language abilities in meaningful activity; 3) the dynamics of social interaction; and 4) the quality of educational experience. In this brief report the main points of the presentation are summarized

1. Perception and action

The role of perception in language learning is most often discussed in terms of awareness, attention and noticing. In ecology, perception and action form a unity (Gibson, 1979), and learning language crucially relies on how the learner, as an active participant in meaningful activity, learns to perceive language. Perception, in a Gibsonian perspective, goes together with action, and consists of both exteroception (perceiving phenomena outside the body), and proprioception (perceiving oneself and one's actions). These two modalities of perception are intricately connected, and result in affordances, connections and relations between the learner and the sociocultural and physical environment. Affordances are relationships of possibility (Neisser, 1987) that allow the learner to act and interact with growing effectiveness in the linguistic environment.

2. Emergence

Language development is non-linear (Larsen-Freeman, 2003). It does not proceed piecemeal, as a steady progression of accumulated entities (Rutherford, 1987), but as a series of transformative experiences and increasingly diversified practices. Periods of stability are punctuated by sudden spurts of development and reorganization of linguistic resources and skills. In this view, grammar is not a prerequisite of communication, but a byproduct of it. Regularity and systematicity are "produced by the partial settling or sedimentation of frequently used forms into temporary subsystems" (Hopper, 1998, p.

158). In language classrooms, meaningful activities judiciously combined with a focus on form (Larsen-Freeman 2003; Thornbury, 2001), will encourage learners to grammaticalize their language use, thus integrating form and meaning in productive ways.

3. Social interaction

We can postulate three basic participant configurations based on the nature of the relationship between the interlocutors:

> a) Primary intersubjectivity: this originates in the face-to-face communication between infant and caregiver in the first months of life, and primarily consists of eye-gaze, vocalization, and rhythmic turn-taking patterns (Trevarthen, 1998).

> b) Secondary intersubjectivity: at about nine months, the infant learns to pay shared attention with an adult to a jointly observed object (Trevarthen, (1998). At that point, dyadic interaction (face-to-face) is transformed into triadic interaction (side-by-side, with both interlocutors focusing on the same object). Secondary intersubjectivity makes the emergence of language relevant, in the first instance by processes of pointing, referring and naming (deictic or indicational processes), later on by descriptive elaboration.

> c) Tertiary intersubjectivity: at around age three, children begin to participate in linguistic practices that address distal temporal and spatial distinctions (including not-here and not-now phenomena), as well as their own and others' mental and emotional states and agency. This stage is characterized by rapid grammaticalization of previous lexical and formulaic utterances(Halliday, 1993).

Even though second and foreign language learning obviously do not proceed in this sequence, it is worth thinking about these three intersubjectivities as presenting quite different interactional resources and sources of difficulty. For example, communicative approaches have generally assumed a face-to-face context as the canonical one for activity design. However, it may well be that a side-by-side configuration yields more effective opportunities for learning in the early stages. Therefore, activities in which learners work together on *improvable objects* (Bereiter & Scardamalia, 1996; Wells, 1999) may be particularly beneficial. Further, most (if not all) approaches assume that grammaticalization is the natural focus of the L2 learning task, and ignore the other two intersubjectivities: the direct experience and enactment of primary (prosodic, embodied, affective) meanings, and the spatio-temporal, contingent work of situating activity in physical, social and symbolic worlds of discourse).

Briefly, two further concepts that merit discussion in an interactional context are *scaffolding* and *prolepsis*. These concepts are related to Vygotsky's Zone of Proximal Development (1978), Lave & Wenger's notion of *legitimate peripheral participation* (1991) Rogoff's *apprenticeship, guided participation* and *participatory appropriation* (1995), and Tharp's *instructional conversation* (Viadero, 2004).

Scaffolding

In Bruner's original formulation of the scaffolding process, based on his work on play between mother and infant (particularly the 'peekaboo' game), the concept was described as follows:

> *The game consists of an initial contact, the establishment of joint attention, disappearance, reappearance, and acknowledgement of renewed contact. These obligatory features or the "syntax" of the game occur together with optional features, such as vocalizations to sustain the infant's interest, responses to the infant's attempts to uncover the mother's face, etc. These "non-rule bound" parts*

of the game are an instance of the mother providing a "scaffold" for the child (Bruner & Sherwood,1975, p. 280).

The key element to note here that scaffolding occurs not in the predictable, recurring structure of activities, but in the unpredictable, novel behaviors of learners. In subsequent years scaffolding has often come to be associated more with the structuring of activities than with the contingent actions of learner and interlocutor. In the spirit of Bruner's original conception, it may be preferable to locate scaffolding in the interaction itself rather than in the preparatory structures. However, there is an argument to be made for following current practice and applying the term scaffolding (more precisely, *pedagogical scaffolding*) both to the prior structuring *and* to the interactional unfolding of learning activities.

Thus, in my current work (in press) I frame pedagogical scaffolding as occurring along three time scales:

a) Macro: the design of long-term sequences of work or projects, with recurring tasks-with-variations over a protracted time period;

b) Meso: the design of individual tasks as consisting of a series of steps or activities that occur sequentially or in collaborative construction;

c) Micro: contingent interactional processes of appropriation, stimulation, give-and-take in conversation, collaborative dialogue (Swain, 2000), and so on.

Prolepsis

Following Vygotsky, Bakhurst explains that prolepsis occurs when the mind projects its mature psychological capacities onto the earlier stages of its development: We see the higher mental functions in the infant's behaviour even when they are not yet present….. treating children as if they had abilities they do not yet possess is a necessary condition of the development of those abilities (Bakhurst, 1991, p.67). Thus, prolepsis consists of attributing intent before its true onset, and capitalizing on incipient skills and understandings as they show signs of emerging. In this view, prolepsis (along with its companion *analepsis,* or the invoking of past experience in current activity) is the very essence of the micro-process of scaffolding.

4. Quality

What does educational quality consist of? Is it the same as standards backed up by accountability, and enforced by test scores? The answer is no. Tackling the ever-elusive and complex notion of quality cannot be accomplished by the three-pronged standards-accountability-testing approach. Simply put, standards do not equal quality, in the same way that *standard of living* does not equal *quality of life* (Naess, 1989). Quite simply, the quality of education cannot be measured in test scores. To quote a recent commentary in Education Week:

Schools are largely focused now on test scores and the kind of reporting and consequences associated with the NCLB law. What remains are lots of "drill and kill" approaches to teaching and a blind faith in remediation that promises to suck the last vestiges of joy from the learning process (Thorpe, 2004, p. 48).

The ecological approach to education asserts that ultimately the quality and the lasting success of education are primarily dependent on the quality of the activities and the interactional opportunities available to learners in the educational environment. Research therefore needs to focus on effective classroom practices in the contexts (diverse and varied) in which they occur. However, there is currently a worrisome trend to equate effective teaching with the application of "research-based" materials. The focus of research is on large-scale randomized and controlled experiments (modeled largely on

medical and pharmaceutical research), that the authorities consider the "gold standard" of educational research. This trend may turn teachers into consumers and subjects of research, rather than active participants and researchers of their own reality, with all the negative consequences that have been well documented over decades of large-scale research.

Stenhouse used to say that "it is not enough that teachers' work should be studied: they need to study it themselves" (1975, p. 1430. Many decades of educational research (e.g., Dunkin & Biddle, 1974) have established quite forcefully that, at the very least, experimental research must be complemented by interpretive, contextualized research of various kinds (action research, case studies), especially those in which the teacher takes an active role. Even in the case of medicine, a pill that is good for one may have side effects that harm another. In education, the "side effects" of one-sided and imposed policies will be far worse than the "disease" that the "research-based" applications are designed to cure.

Education is not and should not be the dispensing of materials for the production of test scores. The quality of educational experience is that which the learner remembers long after the test scores are forgotten. It cannot be measured in test scores, but it can be evidenced objectively in terms of diversified perception and action, the ability to cope under stress, increasing control of one's own physical, social and symbolic environment, the establishment of mutually rewarding relationships, and the development of one's talents and interests in a supportive environment (Bronfenbrenner & Ceci, 1994). To paraphrase an economics guru heard on the radio, the fact that you cannot count these things does not mean that they don't count.

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