Some Crucial Elements of Learning Ecologies of Linguistic Contagion[1]

Tim Murphey
Kanda University of International Studies

Administrators, teachers, and students—all learners, ideally—can be learning-innovators. That is, they can continually create better conditions together, an ecology, that can hothouse language learning. Wilga Rivers advocated much the same many years ago, emphasizing student-centered teaching and teacher agency to act in support of everybody's learning:

> We must <u>find out what our students are interested in</u>. This is our subject matter. As language teachers we are the <u>most fortunate of teachers</u>—<u>all subjects are ours.</u> The essence of language teaching is <u>providing conditions for language learning</u>—using the <u>motivation which exists</u> to increase our student's knowledge of the new language: we are <u>limited only by our own caution</u>, by our own hesitancy to do whatever <u>our imagination suggests</u> to us to <u>create situations</u> in which <u>students feel involved</u> …We <u>need not be tied to a curriculum</u> created for another situation or another group. <u>We must adapt, innovate, improvise, in order to meet the student where he is and channel his motivation.</u> (Rivers 96, my underlining)

I wish to describe four crucial activities to enhance learning ecologies, noting that there may be many more. In the following sections I wish to first clarify some terms, then describe these four activities more clearly, and provide some examples of such ecologies.

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But first let me give a glimpse of my conclusion briefly so readers know where I am headed and can better evaluate the arguments in its favor. My conclusion is that: using something, correctly and incorrectly in a supportive ecology, is the major way that one acquires the skill of its use. When we can do the activity with a supportive group, we tend to do it more and access the social capital (Bourdieu) needed to do it intensively. I contend that this is as true of learning to drive as it is of language acquisition. The trouble with most foreign language learning is that students have precious little time behind the wheel.

In other words: *Using language, correctly and incorrectly, in supportive ecologies is the major way that one acquires the skill of its use.* Older learners (those over 8 years old) do this through enormous acts of bravery.

Terminology

The word "ecology" is often used in every day speech as a synonym for the natural world or in conjunction with environmental activism. Ecological science is "the scientific study of the distribution and abundance of living organisms and how their properties are affected by interactions between the organisms and their environment" ("Ecology").

Thus, I understand a *learning ecology* to be an environment in which learners interact optimally and naturally with their environment and others in order to learn efficiently things that are important to know in their particular environments. In the literature these may go by several names: communities of practice (Lave and Wenger), affinity spaces (Gee), and generative learning communities (Pace-Marschall). van Lier's conception of Ecological Linguistics "focuses on language as relations between people and the world, and on language learning as ways of relating more effectively to people and the world" (4).

I have borrowed the word *contagion,* which we regularly use in the adjectival form "contagious" from *Emotional Contagion*, by Hatfield et al. in which they show how emotions are "caught" by others and how certain people's emotions are extremely contagious. Human behavior in general might be sometimes compared to flocks of birds or schools of fish who seem to follow unknown leaders and imitate behaviors for various reasons, cultural and/or otherwise. However, most humans can develop the ability

to see these patterns and develop the agency to choose to follow the ones that we wish to. The emotions are a subset of these communicable behaviors as Hatfield et al. have so eloquently documented.

I propose that *language use* is another overlapping and pervasive subset of contagious human behavior—overlapping because *language use* involves and expresses emotions at the same time. Far from being rare, we see linguistic contagion happening early on in nearly every child's L1 environment with caretakers who adjust and scaffold dynamically to a child's increasing competence by flooding their environment with appropriate communications. We also see how slang often catches on like wild fire, especially among the young. However, in L2 institutionalized learning, the opposite tends to occur. We rarely see intensive interaction that occupies minds in a target language among a group of learners in a school for any sustained length of time. Instead, we see a transmission model of pedagogy in which it is assumed that explanations about the language will transfer to language use.

Learning ecologies of linguistic contagion thus describe rich learning environments in which rapidly spreading activation occurs neurologically within individuals, as well as socially within groups, due to highly contagious and pervasive communications, involving persons locally in using the language constructively. "Hot-housing" language development and learning is what ecologies of linguistic contagion are about. Hawkins suggests "the need for a shift in the teacher's role: from designing lessons to designing ecologies" (79). Van Lier similarly holds that "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." Such ecologies would be rich in "learning opportunities" (Allwright) and "affordances" (van Lier) that facilitate language learning. Immersion education would seem to have been somewhat successful in this regard, but not always.

The main question for L2 educators is how to facilitate the creation of learning ecologies of linguistic contagion. That is, *how can we co-construct with other learning-innovators environments in which we interact so intensively that we carry on the interactions beyond the classroom, with others and in our minds, and "hothouse" our learning in such a way that we*

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can better identify ourselves as active users of our capital with rapidly growing competencies?

I recognize that this happens to small groups of my students and individuals as they report in their learning logs, for example, English running through their heads after a class for a few hours (Krashen's "din"), or students going to lunch with classmates and continuing to speak English. However, I want to know how to help students co-create these ecologies more easily and frequently so that more of them can enjoy the naturalness of learning a language through frequent and pervasive use (Tomasello). This exponential increase in use also facilitates better learning and thinking as we use language to talk about language and learning (Swain).

We need to explore multiple ways to create ecologies of linguistic contagion. This paper looks at what I see as four essential characteristics that deserve attention from learning-innovators: 1) relationship-centered learning which is about supportive group dynamics; 2) engagement with learning through intent participation and Deweying it!; 3) massive interactional opportunities in which participants engage in associative thinking; and 4) the celebration of efforts regardless of success. I will also give examples of successful learning ecologies that have included these characteristics.

Note that when I present these ideas at a conference I am able to better "walk my talk" and get an audience to actually experience some of the things I am talking about. In this written format I will attempt the same although it will depend more on the reader's interactive nature whether or not the ideas find grounding.

1. Relationship-centered learning: group dynamics

To form effective learning ecologies, groups of learning-innovators need to increasingly do the following:

1. Get to know who is there: to self-disclose and build trust. Without participants knowing each other little progress can be made toward supporting each other and feeling secure enough to risk in the group.

2. Make clear what will happen: the procedures and routines. Students who are unsure about the path the class will take and the routines that are expected of them remain unsettled and unfocused as they struggle to come to grips with what is expected of them. Later these paths can be democratically negotiated and still later we can handover control of the choosing with mature groups.

3. Create a safe & challenging atmosphere. Building that safety is also part of # 1 and #2 but there also needs to be appropriate challenge or we fall into boredom and meaninglessness. Providing activities within students' zones of proximal development (ZPDs) is crucial. This is a delicate balance that when done well produces flow (Csikszentmihaly).

4. Help all feel valued in the place of learning with a sense of contribution and appreciation. Belonging to a group means being supported by the group but also seeing oneself as a helpful resource in the group.

Doing these four things helps participants find a sense of community, identity, and motivation which are co-constructing concepts. As learning-innovators, we imagine ideal selves (Dornyei) in imagined communities (Norton) that draws us to invest more and more (be motivated) in the outcomes we wish to achieve. These things do not happen much in a teacher fronted and controlled classroom. They are more apt to happen in guided small group interaction in which individuals are given the conditions in which they can use their natural abilities and desires to make friends and seek challenges, i.e. socialize (Dornyei and Murphey). When participants *like* who they are within a group and feel valued as contributors they are more likely to invest (Norton) in the group, enhancing the group for other members as well.

Relationships among peers in a class do not appear to be a concern for many teachers at first. However, it is in fact a primary motivational aspect for investment in the work of a class. This is supported by the extensive research of Judith Rich Harris who found that peers have more influence on each other than parents and other adults. To me, language classes especially are exceptionally suited to attend to friendship-making

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(Murphey, "Friends") through the target language, and since we are "the most fortunate of teachers, all subjects are ours" (Rivers) we can organize some class time around explicit friendship-making and developing better group dynamics.

2. Engagement through intent participation and Deweying it!

In many of my presentations, I give participants a riddle and ask them to write in their answers (see box 1)

Box 1

Riddle: Some research showed that students in the US retain approximately __% of what they (say, hear, read, see, do, or combinations). What do you think? Write in your answers.

10% of what they _____
26% of what they _____
30% of what they _____
50% of what they _____
70% of what they _____
90% of what they _____

According to Silverman the answers in this particular research show that students learn:

10% of what they <u>READ</u>
26% of what they <u>HEAR</u>
30% of what they <u>SEE</u>
50% of what they <u>SEE & HEAR</u>
70% of what they <u>SAY</u>
90% of what they <u>SAY while DOING</u> or <u>DO while SAYING</u>

I explain to the audience that this is just one small research report and there could be many variations in different contexts. Also, by the time students get to the point where they can talk and perform something, they have probably already read about it, and seen and heard about it from

others. So the research is not saying that reading, or audio-visual learning are ineffective, rather it is saying that *just* doing these things are ineffective for long term retention and that performing, doing and saying, are what allow us to construct and retain more long term representations of the knowledge. Any performer who can get the audience involved in the performance, will also achieve greater audience identification with the process, role, or conceptualization.

So the major question I ask after this riddle is, "Who learns the most in schools?" It does not take long for people to realize that *teachers* are the ones who learn the most in schools because they are indeed the ones performing the most. Thus, if we really want our students to learn more, we need to figure out ways for them to act like teachers, i.e. to perform and teach each other.

To drive this point home, I also show my audiences a comic strip of "For Better or Worse" in which a mother is first shown typing at an old fashion type writer. Her adolescent son comes along and says its time she learned how to use the word processor (computer). So he shows her how to log in, create a file, name it, save it, and print it out in the next few frames. However, throughout the frames, she never touches the keyboard but just looks on admiringly. The last frame shows her again typing alone at her old typewriter, leaving the reader to make their own conclusions. When I give this to many undergraduates they immediately think of the saying, "Old dogs can't learn new tricks." I ask them to think more. Usually someone does remark that she did not learn because she did not do anything, she only watched and that was not enough to actually hold on to the process. Here audience members are remembering themselves being shown something at the computer and remembering that if they do not take control of the keyboard themselves, they probably will not remember the process. Observational learning can only go so far, then we need deeper involvement to go the rest of the way—we need to be the performers. In short, if you want to be able to do it, you have to do it. Correctly or incorrectly matters little at first; both lead toward doing it correctly in the end and gathering more information about your performance and how you can do it.

Even having the intent to participate, researchers have found, makes our observations and attention more acute. "Observers' attention

is likely to be quite different if they expect to be involved than if they observe incidentally . . . Our term 'intent participation' refers to keenly observing and listening in anticipation of or in the process of engaging in an endeavor" (Rogoff et al. 178).

However, if we never actually perform, this intent dies a quick death and the degree of participation weakens. Lave and Wenger write eloquently of legitimate peripheral participation which allows people to access the learning process and identify with it as peripheral participants through observation. Ideally, these peripheral participants then gradually move toward the center of the activity through increasingly scaffolded takeover of the doing. However, when teachers only lecture, they may be keeping students on the peripheral too long and any intent to actually participate more fully seems to be too distant to be substantial, thus de-motivating students to merely studying for the test, not for the actual use of the material.

Another observation that often comes from this comic strip is the idea of the *apprenticeship of observation*. It takes great amounts of observation to unconsciously form a belief (which is often unconscious). These are what we often call cultural traits and beliefs, things learned unconsciously from years of observation, but which may in fact be disfunctional. When students watch teachers explain things year after year, they assume that they now know how to teach—you just explain something to someone (the transmission model of teaching). Many have absorbed this conception of teaching merely from observation. The young boy in the comic strip may not enjoy school, but he assumes that the way to teach is simply to explain. And when students like him become teachers they will often replicate the fallacy of *transmisery education*. We need to better understand our hidden beliefs and understandings, for as Pace-Marshall says, "Our beliefs and assumptions about learning and about how children learn are the most powerful 'rules' in schools—they are largely invisible" (38).

Finding the right amount of performance weight for students so that they are neither bored nor stressed out is important. Without intent participation and engagement in *doing* students usually are tuned out and unengaged with others in social learning as the person sleeping on the left in figure 1. They either have no images or random images that come into their minds.

On the other hand, with too much stress, a person's fear can greatly inhibit learning from performances as with the example on the far right whose fear inhibits learning. In the examples, later we will see how peer to peer interaction seems to work for most students in that they need to perform, but it is not in front of a class or teacher. There are expectations and they do want to look good in front of their peers, but it is not debilitating.
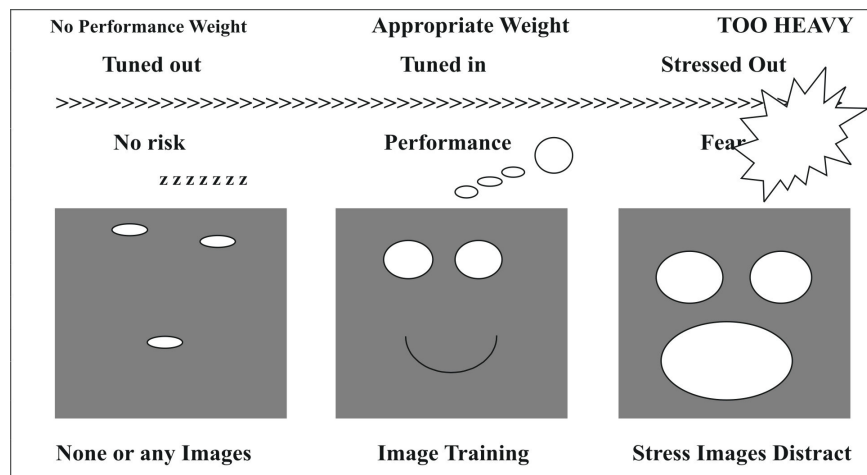
No Performance Weight	Appropriate Weight	TOO HEAVY
Tuned out	**Tuned in**	**Stressed Out**
No risk	**Performance**	**Fear**
z z z z z z		
None or any Images	**Image Training**	**Stress Images Distract**

FIGURE 1 - Intent Participation & Performance Weight.

3. Massive interaction (three examples) and associative thinking

Example One: Randy Pausch describes in a recent video his MA program at the Entertainment Technology Center (ETC) at Carnegie Mellon University. This is a two year professional Masters Degree combining virtual reality computing with the arts. All time the time in this program is spent working in small groups on edutainment projects. The first semester they have 5 two-week projects in randomly assigned small groups and receive peer feedback after each two week session. They learn quickly from their peers if they are not easy to work with. There is one larger project in each of last three semesters in different small groups. Pausch says there was no book learning, just intensive interaction in supportive small groups, creative and meaningful. He has companies already on a waiting list to sign up his graduates three years from now. This means that people

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who have not joined the program yet are already assured of jobs. That is how much they trust the program.

Pausch's program is not a language program but it is still an example of a learning ecology. They are learning the skills of collaborative creation and cooperative group dynamics in order to produce their projects. Companies see this as more valuable than reading the cutting edge books on the theories of their fields.

Example Two: Yashima et al. report on the improved willingness to communicate (WTC) of Japanese students involved in a mock United Nations at their high school. Small groups of students research and report on different countries and then take their countries' positions in debates and negotiations. The intensity of the group work through the project allows students to invest more of themselves in their roles and increases their communication skills.

Example Three: My own attempt at creating a highly interactive ecology with massive interaction at least in class is known as Longitudinal Self Evaluated Videoing (Murphey, "Videoing," Murphey and Kenny; Murphey and Woo) involving a lot of near peer role modeling (Murphey and Arao) in which students can make friends and learn much from each other, also known as social capital (Bourdieu). Students have "multiple extended conversational opportunities" in pairs 5 to 8 times with different classmates in each class and are videoed in one of the conversations and given a recording to take home. This recording becomes an artifact from the classroom that they can further interact with and learn: they can simply watch it and take notes, transcribe it and correct errors, share it with family and friends, watch with the person they were recorded with and get stimulated recall feedback. At the end of a term, students have 10 to 12 5-minute video clips on their tape and can review and write a paper about how they have changed.

Probably the greatest common characteristic of these three examples is the massive peer-peer interaction. But why is peer-peer interaction so helpful for learning? One answer is that pair and small group work creates more *associative thinking* rather than parallel thinking, i.e. students learn more when their minds are trying to negotiate with other minds than simply thinking in isolation.

Associative thinking

Xu, Gelfer, and Perkins present the useful concepts of parallel play and associated play. Their research, done with second graders, supports the idea that the way that teachers structure instruction can greatly impact students' collaborative interaction and associative play, especially for English language learners. This coincides with much of what collaborative learning (Jacobs, Power, & Loh) and interactive SLA research supports (Murphey, "You and I"). The terms *parallel play* and *associative play* open a door to more clarity about the importance of collaboration.

Parallel play is when children may be together but their playing is individual and parallel with each other. It was Piaget who first noted this when he described young pre-school egocentric speech coming from children who were all sitting at the same table but playing in parallel, not really together. That is, they were using speech to regulate their own personal play activities without regard to the other children. This is OK in an early stage, but associative play, playing together with a common focus, might be more productive of socialization and cognitive development as children are involved in the same game or fantasy and co-create contexts and rules.

I wish to theorize further on the distinctions between *parallel* and *associative* using observations that I think are common to teachers and students alike and extend *play* to *thinking*. I will briefly describe a few scenarios to illustrate a continuum from parallel play/thinking to associative play/thinking (see figure 2), drawing on a previous article (Murphey and Kobayashi).

FIGURE 2

The Continuum of Socialization into Thinking Modes
1   2   3   4   5   6   7   8   9   10
Parallel Play/Thinking   Associative Play/Thinking
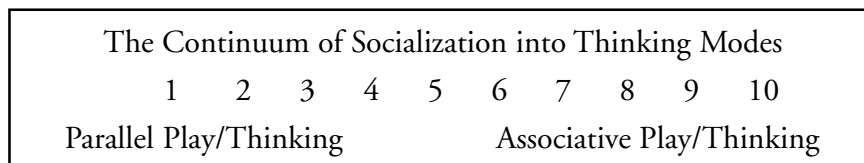
At the lowest level we have parallel play/thinking when students may be physically together but they are involved in their own private worlds of play and thinking and imagining, quite similar to a group of people in a train, each in their own private world of thought. Imagine

being in a class in which the teacher talks all the time and you will only have a final exam from a textbook that you can read outside of class. Yet nevertheless, attendance is required and so you go and look at your teacher talking for the complete class. Chances are most readers have had such a class or two in their past and will recognize that parallel play/thinking may have been their dominant mode of being there ("out to lunch" describes this way of "being there").

We all know that we have performed this behavior in classes in which we were not interested and gotten away with it. Even when students' intentions are to listen and think along with a speaker (teacher/lecturer), if there is no obligation to respond with other than minimal clues of attending, the mind tends to go into parallel thinking modes and often in the end loses out to the internal meanderings of the mind. Students can look teachers straight in the face, smile and nod, and still be thinking about something else—we all have done this. In such situations, students are mentally aware of someone else but only superficially attending with no obligation to participate. In such situations, students are usually pretty relaxed because very little is expected of them, other than to give occasional eye contact and sit with an appearance of listening.

Now imagine that the teacher had the habit of calling randomly on several students in every class to read a passage in the textbook, but not to comment on it, just read. In order not to be embarrassed, you would have to pay a bit more attention to the page and pace of the teacher. This would probably push your mind into superficial mental awareness.

The third level I would typify as "engaged to respond." At this level, the mind and person is engaged (contracted) to respond more or less equally in a conversation by social convention (Grice's Maxims) and thus attends to the partner more closely, indeed, must pay attention in order to respond appropriately. Imagine now that your teacher's way of teaching and grading was to read a short passage and randomly call on students to explain what it meant and what they thought of it. The fear of being lost and not knowing what to say would probably make a lot of students read carefully and stay more attentive in the class. However, after being called on once, students would probably descend to parallel thinking again if chances of being called on again were small.

Imagine now that your teacher matched you up with a series of different partners in each class to discuss and teach different sections of the

textbook (peer tutoring) and you gave and received partner evaluations as to preparedness and helpfulness. The act of having to discuss a text with one other person would probably force you to be "engaged to respond" and stimulate you toward associative play/thinking in which two minds focus on one object and explore its dimensions. This type of engagement gives agency (demands it) to the minds involved. So the question for teachers becomes "How do we construct activities to gently allow people to take more agency and do more associative thinking rather than parallel thinking?" Xu et al. certainly provided an excellent way with even second grade students—peer tutoring.

There is still yet perhaps a more intense form of associative thinking than being focused with a peer, and that is having many people in your head at the same time. Here I would suggest that when students compose forums in a web programs like Blackboard or WebCT, etc., they often have read the group's comments and have an internal conceptualization of their audience and how the individuals might respond. Thus, as they compose, they are thinking associatively with an imagined community (Norton). As Lapadat states, "An important element in this online interactivity is that there is a real audience" (11). Even I, somewhat for this short piece, have certain people in my head that seem to be holding positions and I am dialoging with them (e.g., "Julian, you'll like this and certainly respond with something I have never thought of." "Yaoying, you know so much about kids, I wonder what you will think of this play/thinking connection").

Note, it is not a question of doing away with parallel thinking, which may be a natural survival-of-the-species way to cope with boredom, incomprehension, and isolation (at least we are still thinking!) and may also be a feeder for associative thinking. The question becomes, "If we recognize associative thinking as very productive of learning and yet rather rare in our schools, how can we organize people (teachers and students) so they have more opportunities to think together, doing associative thinking rather than falling into the default parallel-thinking-mode even when they are together?"

Associative play/thinking may be another way of describing what Vygotsky called the social plane, "Any function in the child's cultural development appears twice or on two planes. First it appears on the social plane, and then on the psychological plane. First it appears between two

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people as an interpsychological category, and then within the child as an intrapsychological category" (Vygotsky 163). Xu et al.'s article describes a wonderful way to help students get onto that social plane through peer tutoring. Edge's work on cooperative development and the *TESOL Quarterly Dialogues* (Sharkey & Johnson) are also pointing in this direction for teacher development. SLA people would conceptualize it something like this: the goal of comprehensible input (Krashen, *Second Language*) occurs most often when people can adjust (Long's adjustment hypothesis) to each other, which they can only do in interaction (Allwright's interaction hypothesis) and through revealing their thinking in talk (Swain's output hypothesis). So when can people interact and adjust the most to create comprehensible input and output? Most probably not in teacher-fronted classes, but rather in dyads and small groups of communicating students willing to teach and learn from each other. Swain has called this "collaborative dialogue."

I feel that we are probably always doing parallel thinking to some extent (that is the nature of our constructive ability to combine our own thoughts while streaming others at the same time). Our attempts at associative thinking are probably often under assault by rogue parallel worlds much of the time. But when we are engaged with just one other person in a conversation, we usually attend to people maximally in order to be able to react appropriately and contribute to the dialog. This requirement to contribute, I suggest, is the main reason we attend so much in these circumstances. To realize the real fruit of parallel thinking, we need to externalize it and make it into an object that others could act upon associatively (Swain). This of course socializes otherwise private parallel thinking into associative thinking. Figure 3 seeks to depict some of these contrasts between parallel and associative thinking, however, in the end, we probably want to regularly travel to both ends of the continuum at least periodically and benefit from the advantages both offer.

FIGURE 3

Parallel play / thinking / study	Associative play / thinking / study
Alone in our own minds	Communicating with others
Not sure what others think	Know more about what others think
Thoughts rarely externalized	Thinking out loud, sharing of writing
Few opportunities to model	Massive opportunities to model
Few opportunities to adjust	Massive opportunities to adjust
More isolated	More communal
Less socialization	More socialization

4. Celebration

When we have relationship-centered learning in supportive groups that encourage intent participation, near peer role modeling, and engagement with great amounts of interaction that can stimulate associative thinking, then we have a pretty good ecology going, perhaps an *ecological learning flow*. These concepts all co-construct one another and can help create a dynamic learning ecology of linguistic contagion. It is also effective to have celebration as an element in the co-constructing concepts and if possible to see celebration as a way of being with the appreciation of all that you are learning and the relationships that you are cultivating.

Tom Peters said many years ago, "Celebrate what you want to see more of," and indeed celebrating something seems to make it come more often. The business field of appreciative inquiry has found that simply asking people "What is working well?" can create an environment where people are concentrating more on what works. Joy, pleasure, and celebration provide meaningfulness to what we do. Having a good time learning a language would seem to be a wise thing to cultivate within our profession. The more you celebrate the learning, the more learning there is apt to be.

Conclusion

For purposes of summarizing, figure 4 below seeks to contrasts some of the differences between the tradition of structure and ecologies of linguistic contagion:

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FIGURE 4

Tradition of Structure Conservative Tendencies	Learning Ecologies of Linguistic Contagion (in/out of class)
1. Language held as frozen structures	Fluid language use (Tomasello)
2. Students study the structure of L	Use language to learn content (CBI)
3. Little target language USE	Lots of target language USE
4. Unneeded pain and frustration	Pleasure and fun permitting more effort
5. A lot of high stakes testing	A lot of level appropriate performing
6. Little confidence and motivation	Generates confidence and motivation
7. No intent participation	Lots of intent to participate
8. Near Peer Role Models not apparent	Near Peer Role Models made visible
9. Little sense of community/ideal selves	Strong sense of community/ideal selves
10. Littler teacher/student choice	Lots of teacher/student choice (autonomy)
11. Little or no celebration	Continual celebration ideally

While learning ecologies may at times be messy, complex, and chaotic (a zoo even), when they are rich enough in interaction, heart and celebration, they will usually facilitate linguistic contagion–like a child absorbing the songs of loving caretakers.

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