A hand holding a green plant stem against a blurred background of foliage.

The Linguistic Imagination: Cultural Enskilment, Embodiment, and Literacies of Language in the Human Ecology

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Overview

1. Linguaging and the Distributed Language View;
2. Persons as Self-organising / Self-assembling Semiotic-Cognitive Devices in the human ecology;
3. Example 1: The Education of Attention: Learning to See Microscopically in a Biology Tutorial;
4. Modalising Capacities of Learning Agents;
5. The Social is the Source, not the Setting, of Mental Development (Vygotsky): Scaffolding;
6. Linguaging, Non-perceptual Awareness, The Imagination;
7. Example 2: Learning Linguaging Through Engaging with Literature in a University literature lesson;
8. The Learning Self;
9. Concluding Remarks: Learning to Language and Enskilment in the Human Ecology.
10. (Previous speaker: Raising awareness of cognitive and semiotic functions of linguaging in relation to different disciplines + impact on creation, transmission, and reception of disciplinary knowledge).

Languaging and the Distributed Language View

The emphasis in the distributed view is on living, moving, and feeling human individuals who are inter-connected with each other and with cultural artefacts and technologies rather than being mediated by abstract systems and codes.

Languaging is distributed between brain, body, and the social and cultural world.

Languaging (Maturana's term) is *verb*-like, rather than noun-like: it is process organisation in time rather than a "thing" that we "use";

It is integrated with other material and social processes;

Human sociality is defined by and in relation to how human activity is integrated with what has gone before, what is going on now, and what is expected or anticipated to happen next.

The Distributed Language View emphasises how human agents coordinate their actions with those of others in the service of common projects rather than shared abstract semiotic and/or social codes or systems that are said to mediate the interaction.

Summing Up So Far ...

Agents don't encode/decode mental or semantic contents in language;
They learn to use verbal 'objects' (texts, utterances, wordings) normatively to:

1. focus attention and attune to wordings and the flows of experience catalysed by them;
2. attune to a fluctuating environment in flexible and adaptive ways along an unfolding temporal trajectory;
3. manage multimodal sense-saturated coordination between persons and between persons and artefacts, technologies, tools, texts, etc;
4. manage and anticipate the temporal flow of interactivity;
5. differentiate and orient to situations and situation-types;
6. enact and display their selfhood.

In ontogenesis, wordings and phenomenal experience are co-constituted in ways that allow agents to perceive, construct, and use cultural-ecological techniques: languaging as enskilled management of one's ecological relations.

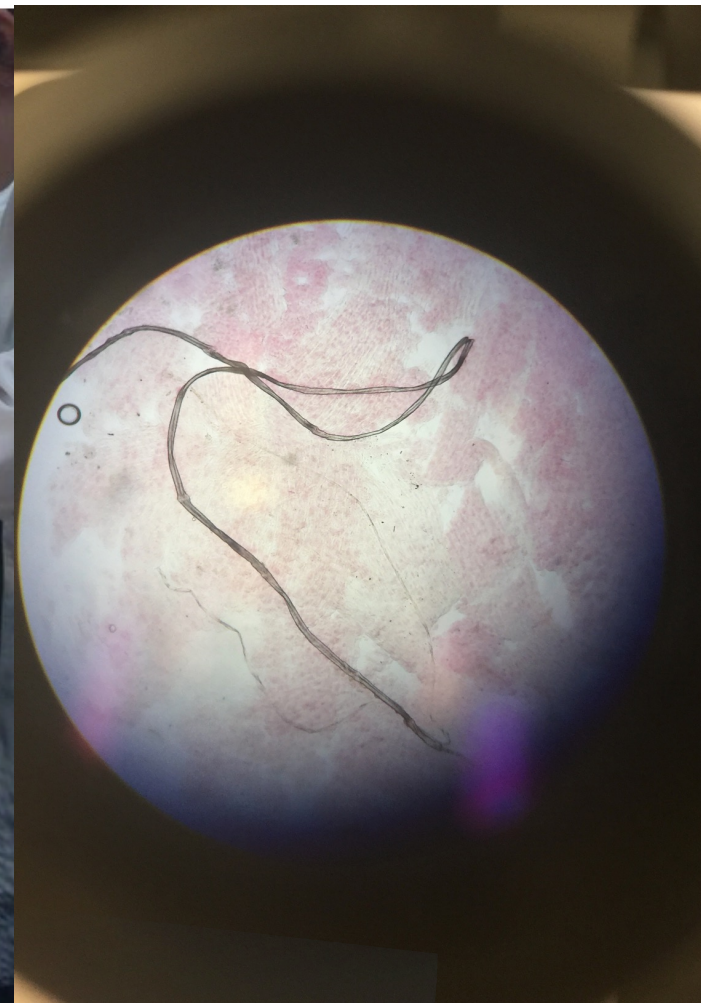
Techniques entail cultural enskilment (Ingold, 2001).

Self- organising / Self- assembling Semiotic- Cognitive Devices

Ecological psychologists have formulated the idea that persons become a task-specific ecological device when performing specific tasks (Runeson, 1977; Van Orden, Holden, & Turvey, 2003: 345-346).

The body-brain dynamics of persons performing specific ecological tasks self-organise throughout the unfolding performance as they shape themselves (their bodies) into a task-specific tool that is fit for the task: a walker, a javelin thrower, a language user, a microscope user.

The body changes and shapes itself in accordance with the task and therefore with the nature of the specific aspect of the world that it is operating on. We “lean into” the world in this way and participate in its flows and its person-environment transactions.





Professional Vision (Goodwin, 1995) & the Education of Attention (Gibson, 1966, 1979): Learning to See Microscopically in a Biology Tutorial



Faculty of Science, School of Biotechnology & Biomolecular Sciences, UNSW Sydney; May 2018; Prof. Mark E. King & Prof. Paul J. Thibault (with permission of the tutor and students)

Transcription 1

Frame 1	Frame 2
 <p>Player 1 Offset: 00:00:00.000 MVT_2470_Short_Microscope_11May2018.mp4 00:00:58.240</p>	 <p>Player 1 Offset: 00:00:00.000 MVT_2470_Short_Microscope_11May2018.mp4 00:01:01.680</p>
<p><u>R</u>: it's a bit hard 'cause you need the right angle 'cause you need to look essentially straight + hand gesture S1: straight yeah ... but anyway + I'll get a photo in a sec + moves right, behind R</p>	<p>R: looks in microscope + one moment. What magnification is this? Ext: ?????? + R. looks off camera to person on R's left + what? S1: laughs R: oh yeah so what you were looking at before was where the stain had a centrally collecting + laughs + we're just looking at the stain S3: but I saw a little squiggles and they looked like chromosomes S1: what is that? + gaze to R.</p>

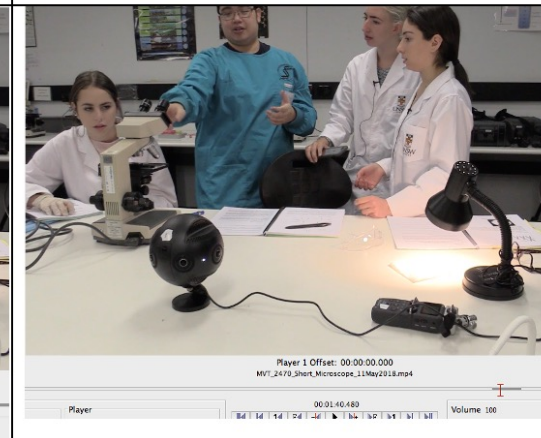
Transcription 2

Frame 3





R: raises head from microscope + those were **chromosomes** + rubs hands
 but since they were like **sort of** [+ brings hands together] **clumped** [+ moves hands apart] like **oddly** [+ brings hands together]
 S3: mmm + nods
 R: because it **dried** [+ separates hands] weird. **We** [+ hands together, moves them towards self] can't really tell where one cell **stops and starts** [+ holds hands together]

Frame 4



R: so if you look **now** [+ adjusts microscope to 4 times] at 4 times + leans towards microscope + points at it with hands

Transcription 3

Frame 5	Frame 6
 <p>Player 1 Offset: 00:00:00.000 WTT_2479_Short_Microscope_11May2018.mpx</p> <p>00:01:42.000</p> <p>Volume 100</p>	 <p>Player 1 Offset: 00:00:00.000 WTT_2479_Short_Microscope_11May2018.mpx</p> <p>00:01:52.303</p> <p>Volume 100</p>
<p>R: you can see there's one dot [+ makes circle gesture with left index finger] by itself [+ coordinates gaze with S1 and S3] S2: <u>looks into microscope</u></p>	<p>S1: gaze to R + so isn't the point to break the cell? S2: disengages from microscope + ok R: yeah [+ S1 moves towards microscope] so that one should be broke R: it's just [+ hands together] it's just coll ... [+ hand brought together] S3: collected R: collected in one single area (to S3) S3: I know R: so try to zoom in on that one more (to all three) S3: ok</p>

The Social is the Source, not the Setting, of Mental Development (Vygotsky)

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Scaffolding works by blocking some of the competing selection pressures in learning situations so that those intermediate constructions that will prove useful and viable will be retained rather than being prematurely discarded: looking straight into the microscope at the right angle, the correct magnification, distinguishing clumps and stains from chromosomes.

Scaffolding therefore works by re-weighting the selection pressures on the learning task in order to ensure those constructions that will lead to the development of a learning trajectory that is able to solve the learning task.

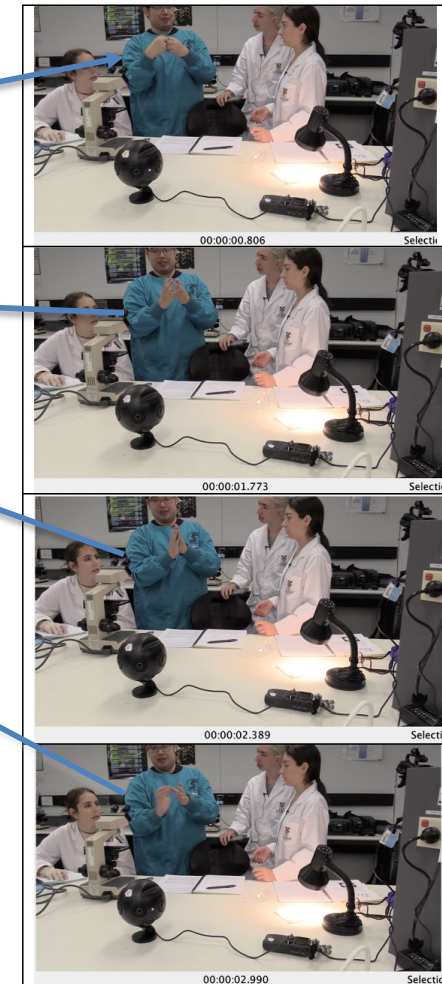
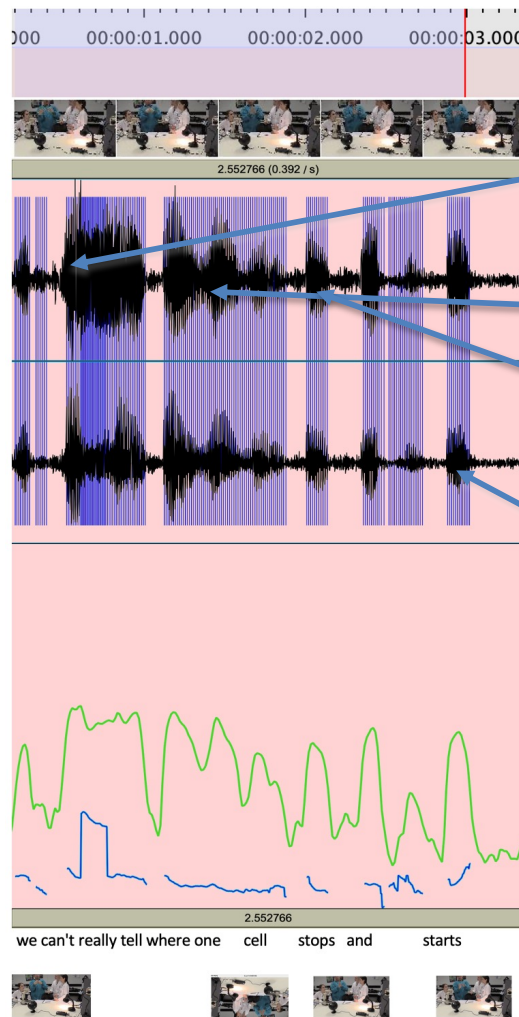
The tutor's demonstration of how to use the microscope in order to identify and observe chromosomes illustrates a critically important though little known argument made by Vygotsky in his posthumously published notes entitled "Concrete human psychology" (1989): The social is the source, not the setting, of our mental development. (Vygotsky, 1989: 56).

In the tutor's demonstration, it is the tutor's acting out of the embodied normatively appropriate social relations both with the microscope and to the students in his demonstration of the correct use of the microscope that constitutes the condition for the transition to the effective use of the microscope and associated perceptual and cognitive skills and operations on the part of the students.

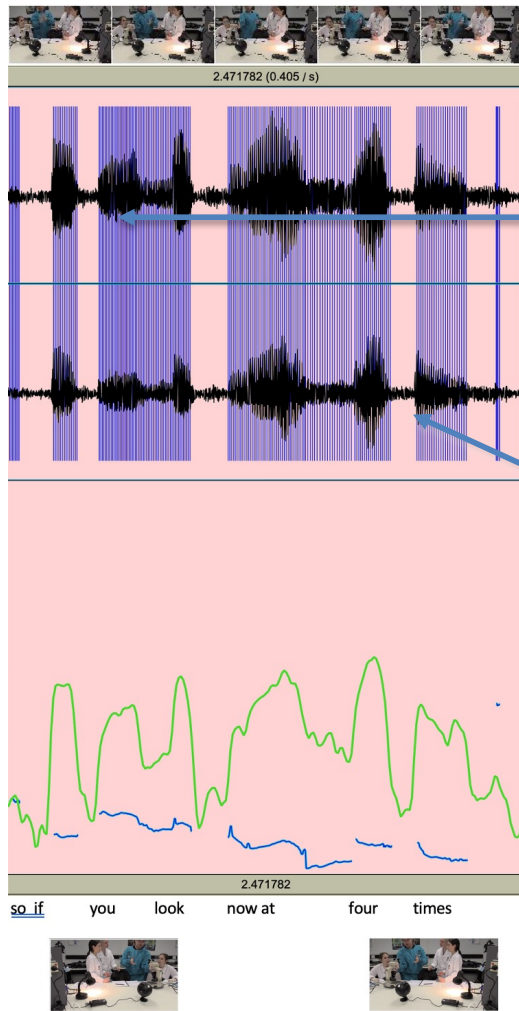
His demonstration shows the forming of the body into a task-specific ecological device or tool in order to accomplish a particular activity is an "operative intentionality" (Merleau-Ponty, 1945) that the students can emulate.

we can't really tell where one cell stops and starts ...

Rhythm in speech and hand gestures are synchronised with the development of the conceptual issues

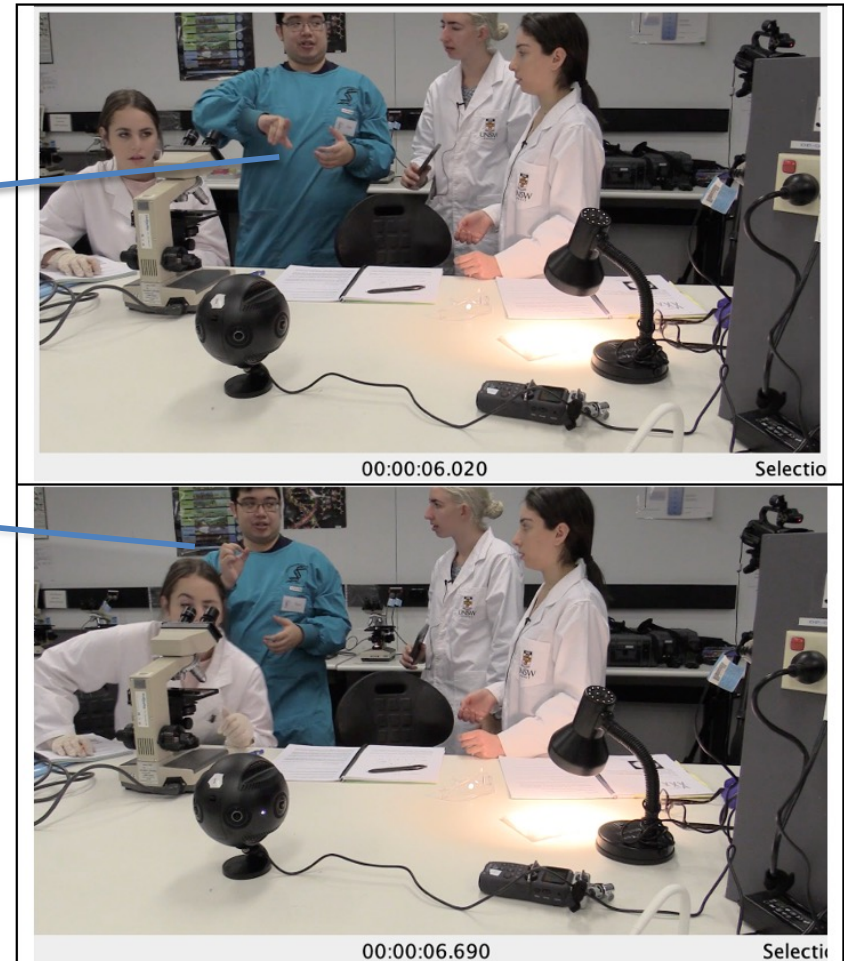
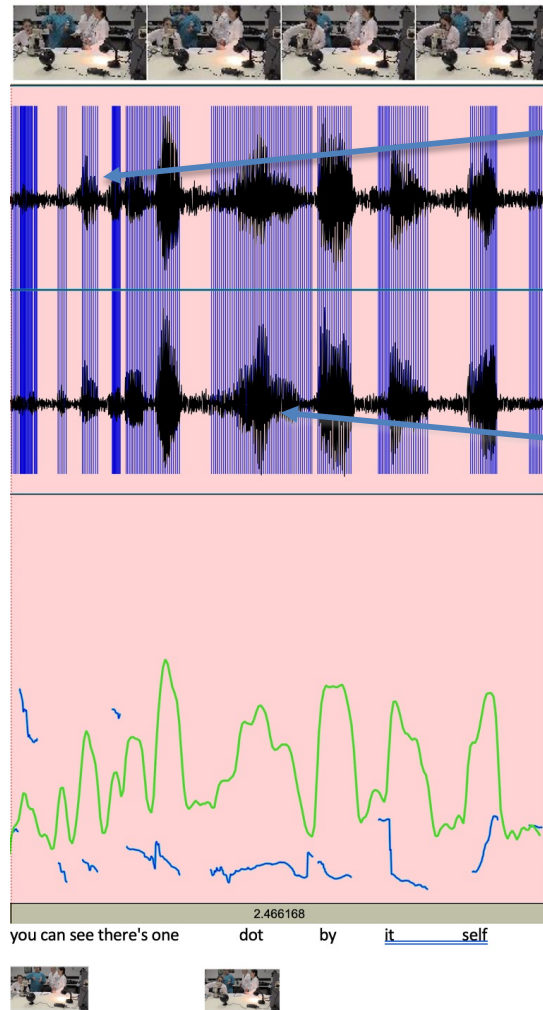


... so if you look now at four times



... you can see one dot by itself

Reshaping Perception By Means of Gesture: The tutor closes his fingers in a circular shape to form an iconic gesture co-synchronized with the word “dot” (chromosome) (second frame)



Corporeal Fundamentals

In this short segment, the students do not "speak"; only the tutor speaks. However, listening, and perception more generally, are active, not passive. For example, listening to someone speaking means taking in and enacting for oneself the changing melodic, rhythmic, and intensive aspects of the performance that all contribute to how and what people learn and how they understand.

It means moving along with and attending to the tutor's languaging: co-responsivity.

And yet, the fundamental role of these corporeal factors in teaching and learning remains little accounted for.

The ongoing flow of the transactions between persons and their worlds creates and enacts the variable conditions for the learner's self-assembly of their capacities for attention attunement, learning and knowing.

Modalising Capacities of Learning Agents: The unfolding of a trajectory whereby the tutor preps. the students with the relevant modal capacity

but since they were like sort of clumped together like oddly	Identification/Diagnosos of Problem: clumping together of chromosomes the students had observed
we can't really tell where one cell stops and starts	Consequence: Perceptual incapacity: "we can't"
<u>so</u> if you look now at four times	Sets Up Contextual Conditions: look: 4 times magnification (active looking)
you can see one dot by itself	Students Now Modalised with Capacity to view in the correct way: "you can" (perceptual achievement)

1. A focus on the verbal transcription per se loses much of what is significant. In the segment analysed here, the tutor responds to the students' difficulties in using the microscope to observe chromosomes.
2. Learning and knowing take place in a unified field of action, perception, and languaging.
3. This involves a flow in time in which living bodies move and adjust to each other and to the microscope.
4. Experience, persons, and environment are engaged in a constant transactional relation as tutor and students move along together in relationships of co-responsivity.
5. Voice dynamics such as rhythm, intonation melody, intensities, tempo, time, timing, gestures, gaze, and affect are irreducible aspects of the biology demonstration and the teaching and learning that take place.

Modalising Capacities of Learning Agents II

In this micro-episode, we can see that the capacity to attune to and thus to see chromosomes under the microscope does not reside either 'in' the body, brain or the environment, but rather depends on functional synergies that cut across and recruit resources of all three.

The development of human capacities of perception and action contributes directly to capacities of languaging just as languaging contributes directly to capacities of action and perception.

The example shows that humans create and exercise semiotic, cognitive, and perceptual capacities by creating the environments in which these powers are exercised.

The capacities of humans to use the affordances of the microscope to learn about cell biology are constituted within historical processes when people create both their own ecology and hence themselves qua persons/learners within that ecology.

Modalising Capacities of Learning Agents III

Languaging is a performance of the whole embodied person in his/her world.

It is not the mechanistic output of computational rules and inner mental representations whereby the body is just the mechanical executors of these 'inner' programmes.

Instead, the transactional flows between tutor, students, and relevant environmental affordances such as the microscope take the entire system of relations constituted by these factors as relevant.

The ability to use the microscope to find chromosomes is an enskilled cultural achievement of a whole embodied person-in-transaction with relevant environmental affordances.

Moreover, the nature of this transactional flow means that learners and environment are continually co-responsive as they move along together in both actual and virtual environments.

As the tutor shows, using the microscope in the required way is one of moving and adjusting one's body and attention as the learner observes, feels and moves while attuning to the emergent task.

Learning is Recursive Construction

Learning emerges in and through action systems rather than from the passive inputting of information or data into the learner's mind.

Learning is therefore an active and constructive process.

However, this does not imply the social constructivist-idealist view that learning is all in the mind of the learner.

Learning recursively operates on and modifies prior constructions.

These prior constructions thus serve as the affordances and resources which the learner recursively acts on in order to produce new constructions.

Languaging, Awareness, the Imagination

Linguistic structures and their transformations enable persons to have an indirect, virtual awareness of actions, events, persons, situations, perspectives, points of observation, sensory experiences, and so on without the receptors being stimulated by perceptual stimulus information.

Awareness need not therefore be on the basis of environmental stimulus information about environmental objects and events that exist, have existed, or will exist (see Reed, 1996: 174).

We can also be aware of things that have no existence in reality, but exist in the imagination: awareness of the world and of the things in the imagination occurs separately from awareness of stimulation of the receptors (sensation).

Languaging promotes and catalyses nonperceptual awareness as well as forms of extended perception in actual and virtual environments (Verbrugge, 1980).

“Who’s “Who’s Irish?” by Gish Jen: the playground scene; by Gish Jen: the playground scene

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is dinnertime, the sky is black. I think I should maybe go get help, but how can I leave a little girl by herself in the playground? A bad man could come. A rat could come. I go back in to see what is happen to Sophie. What if she have a shovel and is making a tunnel to escape?

Sophie! I say.

No answer.

Sophie!

I don't know if she is alive. I don't know if she is fall asleep down there. If she is crying, I cannot hear her.

So I take the stick and poke.

Sophie! I say. I promise I no hit you. If you come out, I give you a lollipop.

No answer. By now I worried. What to do, what to do, what to do? I poke some more, even harder, so that I am poking and poking when my daughter and John suddenly appear.

What are you doing? What is going on? say my daughter.

Put down that stick! say my daughter.

You are crazy! say my daughter.

John wiggle under the structure, into the foxhole, to rescue Sophie.

She fell asleep, say John the expert. She's okay. That is one big hole.

Now Sophie is crying and crying.

Sophia, my daughter say, hugging her. Are you okay, peanut? Are you okay?

She's just scared, say John.

Are you okay? I say too. I don't know what happen, I say.

She's okay, say John. He is not like my daughter, full of questions. He is full of answers until we get home and can see by the lamplight.

Will you look at her? he yell then. What the hell happened?

Who's Irish?

This is how, one day, bigger trouble come. The bigger trouble start when Sophie hide in the foxhole with that shovel full of sand. She wait, and when I come look for her, she throw it at me. All over my nice clean clothes.

Did you ever see a Chinese girl act this way?

Sophie! I say. Come out of there, say you're sorry.

But she does not come out. Instead, she laugh. Naaah, naah-na, naaa-naaa, she say.

I am not exaggerate: millions of children in China, not one act like this.

Sophie! I say. Now! Come out now!

But she know she is in big trouble. She know if she come out, what will happen next. So she does not come out. I am sixty-eight, Chinese age almost seventy, how can I crawl under there to catch her? Impossible. So I yell, yell, yell, and what happen? Nothing. A Chinese mother would help, but American mothers, they look at you, they shake their head, they go home. And, of course, a Chinese child would give up, but not Sophie.

I hate you! she yell. I hate you, Meanie!

Meanie is my new name these days.

Long time this goes on, long long time. The foxhole is deep, you cannot see too much, you don't know where is the bottom. You cannot hear too much either. If she does not yell, you cannot even know she is still there or not. After a while, getting cold out, getting dark out. No one left in the playground, only us.

Sophie, I say. How did you become stubborn like this? I am go home without you now.

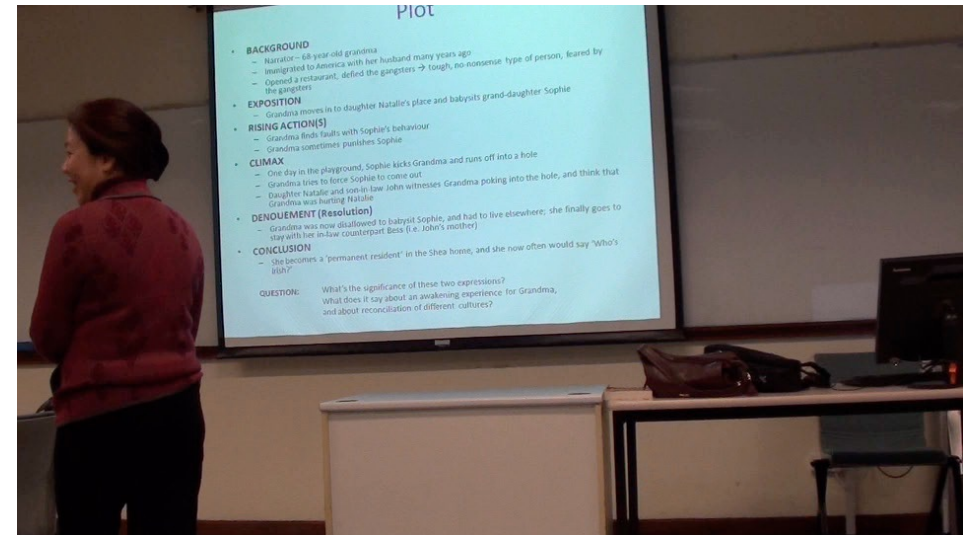
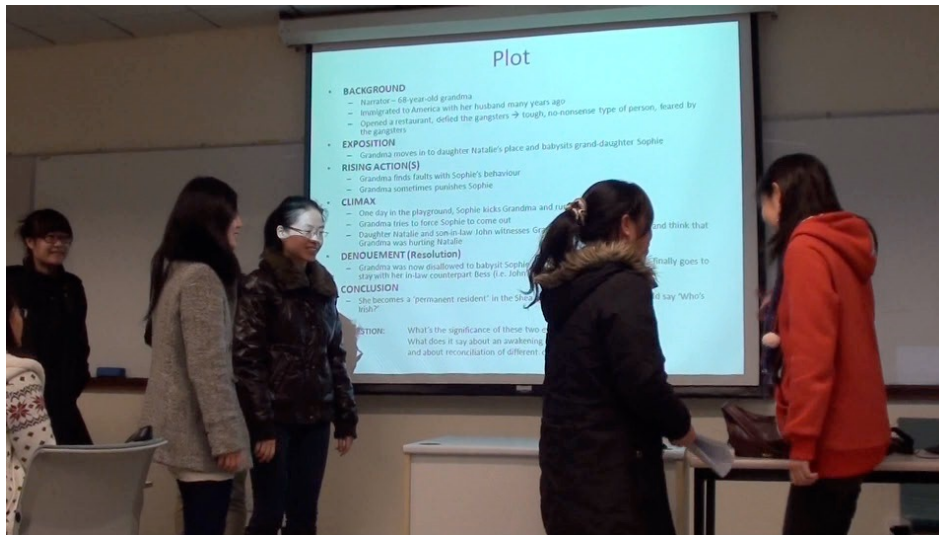
I try to use a stick, chase her out of there, and once or twice I hit her, but still she does not come out. So finally I leave. I go outside the gate.

Bye-bye! I say. I'm go home now.

But still she does not come out and does not come out. Now it

Learning Language Through Engaging with Literature: Student Role Play and Teacher Evaluation in a HK Literature Classroom

(Video clips courtesy Dr Shi Dan, formerly Faculty of Education, HKU; currently University of Nottingham Ningbo campus; used with kind permission of dr. Shi Dan)



“Who’s Irish?” by Gish Jen: the playground scene; The Text Supports & Guides the Catalysing of Productive Flows of Experiencing

The students selectively orient to aspects of Gish Jen’s text and its wordings as prior construction which they modify to produce new construction;

They integrate their attunement to the potentialities of these wordings to a performance flow: their role play of the characters (grandma, Sophie, Sophie’s mother & father) when Sophie hides from the grandmother in a foxhole and refuses to come out, leading to a conflict of cultural perspectives when the displeased mum and dad return to see grandma poking a stick into the foxhole;

The text productively gives rise to living, material flows of experience;

Rather than abstract ‘meaning-making’, the linguistic/textual pattern that the students selectively attend to and attune to in Jen’s text *catalyses* a flow of sensory-kinetic experiencing/performance in the creation of new understandings and new learning constructions.

The students don’t mechanistically decode the wordings: the wordings functionally constrain and guide their performance.

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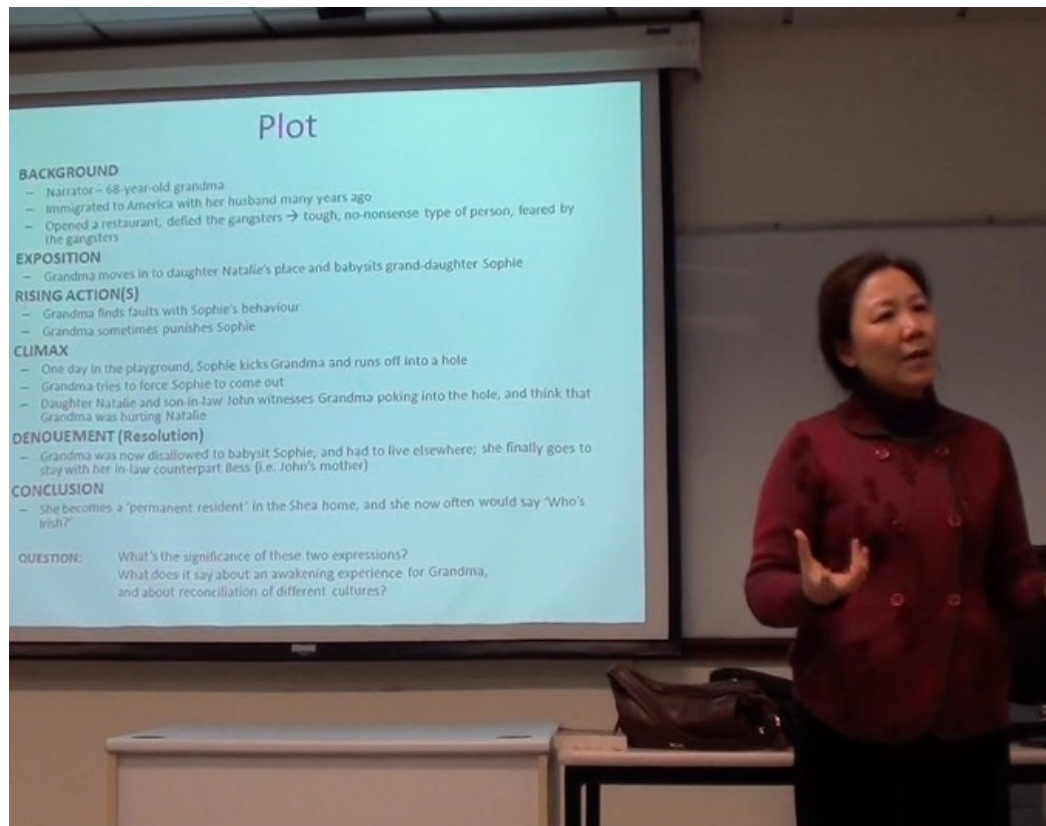
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Role Play Performance

1. Role play is not a matter of turning a mental representation of the written text into bodily action (akin to saying that speaking is the same as speaking a set of abstract forms, as in reading aloud);
2. Through imitation and improvisation the students discover knowledge that draws on their cultural experience of family, cultural difference, etc.;
3. They learn by 'guided rediscovery' (Ingold, 2001) and 'appropriation' (Dufva et al, 2014; Thibault, 2004).
4. The teacher's comment is not the abstract transmission of information from her mind to the students' minds;
5. Through her languaging (vocalizing, wordings, gesture, bodily orientation), she helps to set up and, as here, to evaluate situations by *showing* (pointing to and making present for the students what is relevant);
6. Here, she focuses on the abstract concept of 'literary theme' and specifically that of 'cultural differences'.



- *Teacher: well if you're using cultural differences [+ gesture] as a theme, which is nice*
- Show Theme + Normative Comment

- *Teacher*: still we want to actually present this in a way where we can actually **convey a message** [+ gesture] and not just talk about the differences and give them facts
- Direct Attention to Relevant Concept + Contrast to Less Relevant Aspect of Theme



Making Present & Directing Attention: Non-perceptual Awareness

In using wordings like 'theme' and 'cultural differences' + gesture, the teacher is not 'transmitting' an encoded semantic content to the students;

Rather, by means of the wordings/gestures in synergy she *makes present* and *directs attention* to these ideas in the local situation so that the students can focus their attention on them as virtual 'objects' of non-perceptual awareness in relation to the practices of literature appreciation;

Her vocalization + gesture synergies serve to self-organize a phenomenal experience on short, rapid sensorimotor time scales in the here-&-now that coordinates attention between teacher and students on conceptual structures deriving from longer cultural-historical timescales;

Wordings serve to **evoke** concepts that are imported into a situation from longer time scales, e.g. the history and traditions of literature analysis, by drawing on and directing attention to norms of literary analysis and appreciation that transcend individuals and particular situations.

Learning, Languageing, Attunement

Both examples, in different ways, illustrate how learning is a process of showing, observing, going along with, and attending to, as distinct from the transmission of abstract information.

The biology tutor shows through bodily enacted languageing how to achieve the correct attunement to chromosomes under the microscope.

The literature teacher creates a situation that enables the students to attend to and to experience relevant concepts of literature analysis.

In both cases, we see how perception in both physical and virtual spaces is developed and extended through whole-body languageing practices that guide and hone the “education of attention” (Gibson, 1979).

Languageing scaffolds processes of attunement to relevant environmental affordances that take place in embodied activities and practices within which learning and its passing from generation to generation takes place.

Through languageing we enact and lay down the pathways whereby learning is unfolded as a journey that we undertake with others when we participate in the person-environment transactions that are the living of the human way of life.

The Learning Self

Piaget showed how the organism selectively acts on its environment in order to take in and thus to incorporate to its internal dynamics some aspect of the external world.

Piaget called this process *assimilation*.

By the same token, Piaget observed that the organism is also changed by what it takes in.

He called this process *accommodation*.

Learning is a process that brings about fundamental changes to the structure of the learner's being.

Body-brain systems “shape themselves to accord with input they get by acting into the world” (Freeman, 1995: 26).

Learners *assimilate* their brain and body dynamics to the world.

Learning is a morphogenetic process in which body-brain processes (endogenous structure) change form in response to new learning.

The self is, then, a *learning self* that is transformed by new learning.

Learning requires that the learning self meet and embrace the unexpected.

On the other hand, the self that prefers the expected and who rejects change and new learning will be unable to assimilate the unexpected.

Concluding Remarks: Learning to Language and Enskilment in the Human Ecology

Learning to language as skilled ecologically embedded activity:

1. recognize when and how vocal and other body dynamics matter;
2. recognizing and making use of “sames” (wordings);
 - differentiate situations;
 - operate on and transform situations and their conventions.
3. normativity of cultural patterns and first-person experience;
4. developing & using cultural-ecological techniques;
5. individuation of selves who are skilled at orienting to & displaying norms in ecological taskscape;
6. using wordings to evoke perceptual and nonperceptual awareness and to think, problem solve, imagine, etc.
7. expressing and displaying beliefs, judgments and evaluations about/on their own and others’ languaging.

Thank you!

