

GENERATIVE APPROACHES TO SECOND LANGUAGE ACQUISITION

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Assumptions

- The linguistic competence of native speakers is constrained by built-in universal linguistic principles, known as Universal Grammar (UG).
- *Interlanguage grammars*: L2 learner language is systematic and that the errors produced by learners do not consist of random mistakes but, rather, suggest rule-governed behaviour (complex linguistic system).
- The current generative linguistic focus on the underlying grammars of L2 learners and L2 speakers, the issues including a consideration of the role of UG and the extent to which interlanguage grammars exhibit properties of natural language.
- At the same time, interlanguage grammars differ in various ways from the grammars of native speakers, and some of these differences are being explored in current research.

Acquisition of LANGUAGE vs. Acquisition of Languages

- LANGUAGE is innate and it happens through a language Acquisition Device called Universal Grammar (Chomsky 1981).
- All languages share universal mechanisms and structures of LANGUAGE.
- But children and L2 adults acquire a particular language, or languages, which are manifestations of LANGUAGE

Mind/Brain

- Mentalist, rationalist view
- Language is a tacit, abstract, symbolic system of knowledge represented in the mind/brain.
- Language is a psycholinguistic object in the mind of individuals
- Universal Grammar, a cognitive structure that interfaces with but is independent of general cognition, underlies linguistic knowledge

Universal Grammar (UG)

- UG provides a *genetic blueprint*, determining in advance what grammars can (and cannot) be like. It contains
 - 1) an inventory of possible grammatical categories and features in the broadest sense, i.e. syntactic, morphological, phonological and semantic.
 - 2) constrains the functioning of grammars, by determining the nature of the computational system, including the kinds of operation that can take place, as well as principles that grammars are subject to.
 - 3) invariant principles that are generally true across languages, as well as parameters which allow for variation from language to language.
- UG constitutes the child's initial state (S_0), the knowledge that the child is equipped with in advance of input.
- The primary linguistic data (PLD) are critical in helping the child to determine the precise form that the grammar must take.

- As the child takes account of the input, a language-specific lexicon is built up, and parameters of UG are set to values appropriate for the language in question.

The logical problem of language acquisition and learnability arguments

- The primary linguistic data underdetermine unconscious knowledge of language in ways which implicate specifically linguistic principles.
- UG is proposed as an explanation of how it is that language acquirers come to know, unconsciously, properties of grammar that go far beyond the input in various respects. The idea is that such properties do not have to be learned; they are part of the 'advance knowledge' that the child brings to bear on the task of acquiring a language.
- The child's linguistic experience includes what is known as *positive evidence*; that is, the primary linguistic data include utterances that in some sense reveal properties of the underlying grammar.
- *Negative evidence*, or information about ungrammaticality, is not (reliably) available.

Parameters

- Limited number of built-in options (*settings* or *values*), which allow for crosslinguistic variation.
- Most parameters are assumed to be binary (they have only two settings), with the choices being predetermined by UG.
- L1 acquisition consists, in part, of setting parameters, the appropriate setting being triggered by the input that the child is exposed to.
- A central claim of parameter theory, as originally instantiated in the Principles and Parameters framework, is that a single parameter setting brings together a cluster of apparently disparate syntactic properties (Chomsky 1981a).
- Parametric differences between grammars are associated with properties of lexical items and formal features
- The lexicons of different languages, then, vary as to which functional categories and features are instantiated and what the strength of various features may be. Such variation has a variety of syntactic effects.
- with the current grammar, this signals that the grammar is in some sense inadequate, motivating restructuring.
- The L1 can filter input and grammar processing

Role of Society

- The linguistic environment triggers language acquisition.
- Language exposure and language use is critical for language development
- Learners learn the language(s) of their linguistic environment: Children and adults exposed to English learn English and not Chinese
- But the linguistic environment does not determine all the abstract and complex properties of the linguistic knowledge acquired.

Distinction between Individual and Society

- The focus of generative research is the **individual**: the native speaker, the child learner, the adult L2 learner, the bilingual learner.
- Group results are important, but a key concept is that mental grammars belong to individuals and not to groups.
- Individuals who are exposed to the same language happen to converge on similar grammars (and that is why they are able to understand each other)

Interlanguage

- L2 learner language is systematic and that the errors produced by learners do not consist of random mistakes but, rather, suggest rule-governed behavior (complex linguistic system).
- The generative linguistic focus is on the underlying grammars of L2 learners and L2 speakers, the issues including a consideration of the role of UG and the extent to which interlanguage grammars exhibit properties of natural language.
- At the same time, interlanguage grammars differ in various ways from the grammars of native speakers, and some of these differences have been explored in our research.

L2 Competence

- Can be represented by a series of internalized mental grammars.
- These grammars are systematic and rule governed
- They are transitional systems
- ILG grammars differ from NS grammars, but they account for the learner's interim competence by means of an abstract rule system.

The Logical Problem of L2 Acquisition

- L2 learners need to arrive at a system accounting for L2 input.
- There are abstract, complex and subtle properties of grammar that are underdetermined by the L2 input.
- If it turns out that the L2 learner acquires abstract properties that could not have been induced from the input, this is strongly indicative that principles of UG constrain interlanguage grammars, parallel to the situation in L1 acquisition.
- This is true even if the linguistic competence of L2 learners differs from the linguistic competence of native speakers.

Parsing

- Speakers of a language (whether it is their L1 or their L2) must parse (or process) the input, that is, they must assign a structure to each utterance
- The current grammar must assign some structural representation to it.
- Parsing is required at many different levels: phonetic, phonological, morphological, syntactic and semantic.
- Acquisition is driven by parsing failure (Carroll 2001; Gibson & Wexler 1994; Schwartz & Sprouse 1994, 1996).

Colloquium: Clarifying issues in the conceptual and terminological architecture of SLA research
Atlanta, GA, March 9, 2019.

- The language learner attempts to parse the input on the basis of the existing grammar; if the parse is unsuccessful, or if the parse suggests the need for an analysis inconsistent with the current grammar, this signals that the grammar is in some sense inadequate, motivating restructuring.

Clarifying issues in the conceptual and terminological architecture of SLA research

Anke Lenzening, AAAL 2019

Colloquium handout: Processability Theory

Key issues Processability Theory:

(Pienemann 1998; Pienemann et al. 2005; Pienemann & Lenzening 2015)

- same L2 developmental path for all learners for specific aspects of the language system
- determined by architecture of human language processor (feature of the mind) (e.g., Levelt 1989)
- hierarchically ordered & implicationally related processing procedures
- individual learner variation subject to processing constraints
- formalised in Lexical-Functional Grammar (Bresnan 2001)

1. Understanding relation between acquisition of 'language' and acquisition of 'languages'

Focus of PT: acquisition of morpho-syntax

Acquisition of language (general):

- development of language processor
- acquisition of processing procedures (Pienemann 1998)
- gradual annotation of L2 lexicon (Lenzening 2013)
- leeway for variation at each developmental stage

Acquisition of languages (specific):

- constraints on processing shape L2 developmental paths
- predictions of acquisition sequences of specific morpho-syntactic structures according to underlying processing operations
- LFG as grammatical formalism allows for specification of dynamic multidimensional grammars of typologically diverse languages (e.g., Artoni in press, Di Biase & Kawaguchi 2002, Håkansson 2005)

2. View of concepts 'mind' and 'brain'

Focus of PT:

- explaining mental operations involved in L2 acquisition
- not concerned with the neural processes in the brain

Understanding of relation between 'mind' & 'brain':

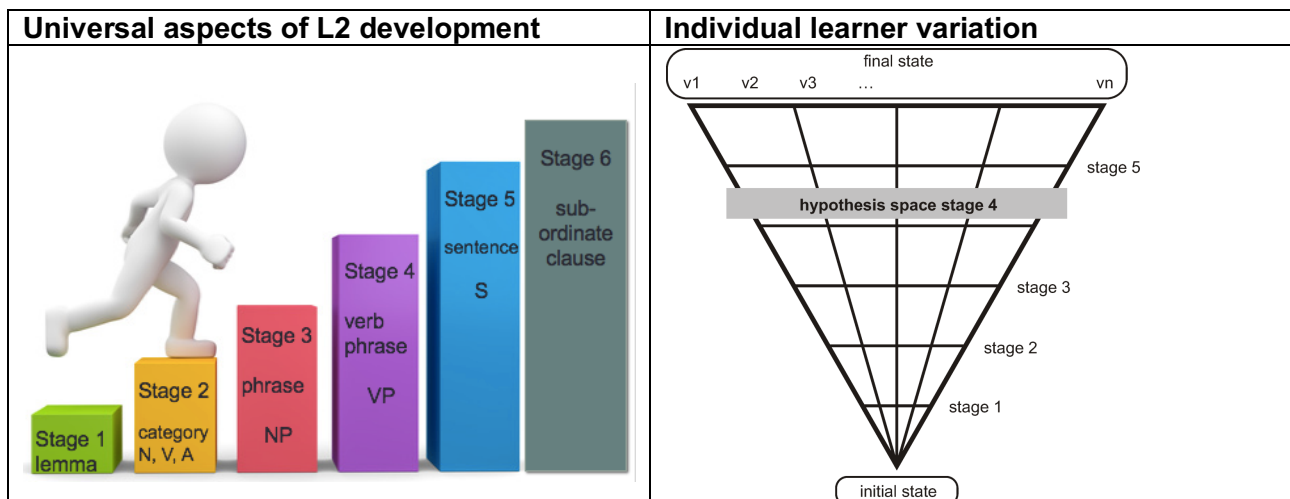
Mental systems and physical systems are NOT regarded as identical in nature (e.g., Bechtel 1988)

3. Distinction 'individual' & 'society'

Focus of PT: individual's L2 acquisition process

a) Theoretical level

Universal aspects of L2 development	Individual learner variation
<ul style="list-style-type: none">• processing constraints on L2 acquisition• predictable stages of acquisition based on processing operations <p>Processability Hierarchy: "sequence in which the fundamental design of the language processor develops in L2 acquisition" (Pienemann & Lenzening 2015)</p>	<ul style="list-style-type: none">• variation between stages• not precisely predictable• subject to processing constraints <p>Hypothesis Space: "created by the interplay between the processability hierarchy and the leeway it generates at every level" (Pienemann & Lenzening 2015)</p>



b) Empirical level

Focus:

- oral speech production data (e.g., Baten 2013, Kawaguchi 2016, Lenzing 2013)
- recent extension: comprehension data (e.g., Spinner & Jung 2018; Lenzing 2017, in press)

Data analysis:

- individual learner data
- creation of learner profiles by means of distributional analyses & implicational scaling (e.g., Pienemann 1998)

Data provide information on individual's mental grammar including:

- developmental stage
- scope of individual variation (e.g., Lenzing 2015)

c) Role of society

- not specifically defined within PT
- one factor influencing L2 variation
- potential to explore interaction between developing L2 grammar and discourse/interaction (e.g., Nicholas & Starks in press; Zhang in press)

4. Conceptual unity in theoretical framework

Focus: universal processes in L2 acquisition of morpho-syntax

Grammatical formalism LFG allows for

1. predictions of developmental trajectories for specific features
2. specification of processing constraints
3. specification of scope of individual learner variation within constraints

Universal aspects:

- acquisition of processing procedures
- **NO** rich initial state in the Chomskyan sense (e.g., Pienemann 2015)

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The conceptual architecture of SLA research – deepening the discussion: Usage-based approaches

Stefanie Wulff (University of Florida)

AAAL 2019, Atlanta

How does your theoretical position understand the relationship between the acquisition of ‘Language’ in general and the acquisition of one or more particular languages? Why?

Language learning is the learning of constructions grounded in usage events, i.e. “instances of a speaker’s producing and understanding language” (Kemmer & Barlow, 1999, p. viii). Usage events, and thus learning through usage, are situated and attentionally and socially gated.

In simultaneous bilingualism, the initial state is identical to that of monolinguals. Rate and attainment are a function of usage, which encompasses aspects such as input quality and quantity, length of exposure and degree of opportunity to practice the languages, and the learners’ identification with and attitudes towards the language being learned (which is fundamentally socially and culturally driven). Variability in outcome is the default expectation and can range from fully balanced bilingualism to clear dominance in one of the first languages.

In sequential bilingualism, the initial state is no longer a plastic system, but one that is tuned and committed to the first languages previously learned (and, depending on the learner’s age, general brain maturation constraints will impact subsequent learning). Rate and ultimate attainment are a function of usage, which comprises the same factors as for simultaneous bilingualism, and in addition, a weightier role of the availability of explicit instruction, feedback, and other means of explicit knowledge formation. Variability in outcome is the default expectation and can range from fully balanced bilingualism to clear dominance in either the first or second language (and anything in between).

In summary, the acquisition of language and the acquisition of languages is not fundamentally different” cognitive and social factors jointly shape both. Depending on when a learner starts learning multiple languages, however, the relative importance of these different factors shifts. Explicit learning (through instruction, tutoring, feedback) has a much larger role in sequential bilingualism/late onset learners than in early language acquisition.

How does your theoretical position engage with the concepts of ‘mind’ and/or ‘brain’? Which ones, how and why?

“Cognition is not just “in the head”; it extends well beyond the skulls and skin” (N. Ellis, 2019, p. 39). More specifically, language cognition is embodied (i.e., shaped by our bodies, our motor and perceptual system), embedded (i.e., dependent on the physical, cognitive, social, institutional and cultural environment), enacted (i.e., arising through a dynamic interaction between organism and environment), and extended (i.e., not just in the head, but a distributed sociotechnical system).

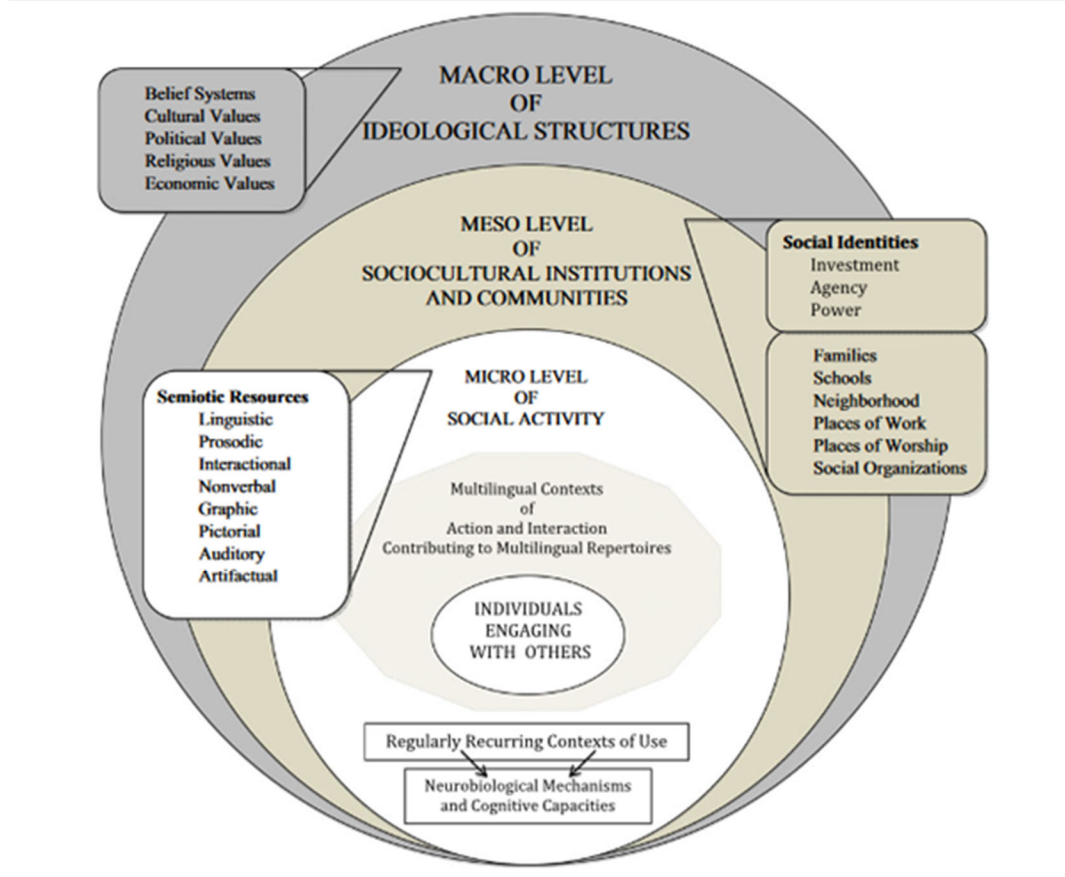
To what extent does your theoretical position depend on a distinction between the individual and society? Why?

Society, like language use and culture, is an ecological phenomenon that emerges from individuals interacting with the environment “so much so that one can imagine that they are basically indivisible from their environments” (N. Ellis, 2019, p. 53). However, in order to understand how ecologies emerge from the interaction of their parts, we must try to understand the parts best we can. Individuals can be studied in terms of identifying their idiosyncrasies, and describing the similarities and differences between them.

What is the logic that aligns your answers to the first three questions? or What creates conceptual unity in your answers?

A complex-adaptive system perspective helps us integrate our understanding of usage-events as situated, attentionally and socially gated, that arise from interactions between individuals, that contribute to their understanding of their own identities and belonging to the social groups they are members of, and likewise giving rise to larger, more abstract and unifying levels of human organization such as institutions and cultures.

FIGURE 1
The Multifaceted Nature of Language Learning and Teaching



[Figure taken from: The Douglas Fir Group, 2016, p. 25]

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The Douglas Fir Group. 2016. A transdisciplinary framework for SLA in a multilingual world. *The Modern Language Journal* 100: 19-47.

Ellis, Nick C. 2019. Essentials of a theory of language cognition. *The Modern Language Journal* 103: 39-60.

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Complex Dynamic Systems Theory

A Presentation at the AAAL 2019 Colloquium on Conceptual Architecture of SLA Research
Atlanta, March 9, 2019

Diane Larsen-Freeman, University of Michigan and University of Pennsylvania

Systems thinking involves a new kind of thinking—thinking in terms of patterns, relationships, and context (Capra & Luisi, 2014, p. xii).

Capra, F., & Luisi, P. L. (2014). *The systems view of life. A unifying vision*. Cambridge University Press.

Language is a complex adaptive system. Adding “complex” and “dynamic” to systems theory results in understanding language as a complex adaptive system.

Ellis, N. C., & Larsen-Freeman, D. (2009). *Language as a complex adaptive system*. Malden, MA: Wiley-Blackwell.

Its form-meaning-use patterns dynamically emerge from the iterative interaction of its particular users, seizing the affordances they perceive in order to create and interpret meaning in particular contexts.

Larsen-Freeman, D. (2016). Shifting metaphors: From computer input to ecological affordances to adaptation. In *Proceedings from the IATEFL 50th Anniversary Conference* (pp.10-19). Kent: IATEFL.

The upward emergence of novel patterns is constrained by downward causation, in which the language-using patterns entrain further emergent patterns due to the historic trajectory of the system (its path dependency) and its present-day socio-cultural norms. The cycle is known as reciprocal causality and is characteristic of self-organizing systems (Larsen-Freeman & Cameron, 2008).

Larsen-Freeman, D., & Cameron, L. (2008). *Complex systems and applied linguistics*. Oxford: Oxford University Press.

A complex system is also adaptive; it evolves in response to a continually changing environment. The environment itself changes in co-adaptation between speakers and the context. The context can be social, physical, or technological (Lupyan & Dale, 2016).

Lupyan, G., & Dale, R. (2016). Why are there different languages? The role of adaptation in linguistic diversity. *Trends in Cognitive Sciences*, 20, 649–660.

“The development of multilingual[ism] leads to an enrichment of the individual language system but, as the whole system adapts to new environmental and psychological communicative requirements as perceived by the speaker,” its nature also changes.

Herdina, P., & Jessner, U. (2002, 160). *A dynamic model of multilingualism. Perspectives of change in psycholinguistics*. Clevedon: Multilingual Matters.

Second language development is a sociocognitive process. We must pay attention not only to the ambient language to which the learner is exposed and interacts with in society, but also how the individual makes sense of and learns from it (e.g., through inferencing, analogizing, adaptive imitation, statistical pre-emption).

Larsen-Freeman, D. (2017). Complexity theory: The lessons continue. In L. Ortega & Z.-H. Han (Eds.), *Complexity theory and language development. In celebration of Diane Larsen-Freeman* (pp. 11–50). Amsterdam: John Benjamins.

Language learners have agency, the capacity to act in the world, optimizing the conditions for their own learning...or not. Speakers’ agentive behavior is based on their past experience, and current and past interactions and present goals together feed forward into their future behavior.

Larsen-Freeman, D. (2019). Language learner agency: A complex dynamic systems theory perspective. *Modern Language Journal*, 103, 61–79.

The influence of the languages in a learner's repertoire makes a learner's evolving language resources distinctive, which along with other unique personal factors, results in clear inter-individual differences on a developmental trajectory, even among learners with highly similar backgrounds and characteristics.

Chan, H.P., Verspoor, M., & Vahtrick, L. (2015). Dynamic development in speaking versus writing in identical twins. *Language Learning*, 65, 298–325.

The starting points of a complex dynamic system, the iterative and nonlinear nature of language development, and the emergence of attractor states over time at all timescales, are manifested in a highly individual process that is characterized by meaningful patterns of intra-individual variability. (Lowie, Verspoor, & van Dijk, 2018)

Lowie, W., Verspoor, M., & van Dyck, M. (2018). The acquisition of L2 speaking. A dynamic perspective. In R. A. Alonso (Ed.), *Speaking in a second language* (pp. 105–125). Amsterdam: John Benjamins.

It is both types of variability, inter- and intra-, as evidenced in different patterns and learning trajectories, that CDST researchers seek to better understand (Evans, 2018).

Evans, R. (2018). Bifurcations, fractals, and non-linearity in second language development. A complex dynamic systems perspective. Ph.D. dissertation, University of Buffalo.

From a CDST perspective, one can study language development at a group level or at an individual level; however, what is important is the recognition that what happens at the group level does not apply to any single member of the group (Lowie & Verspoor, 2018).

Larsen-Freeman, D. (2006). The emergence of complexity, fluency and accuracy in the oral and written production of five Chinese learners of English. *Applied Linguistics*, 27, 590–619.

Lowie, W., & Verspoor, M. (2018). Individual differences and the ergodicity problem. *Language Learning Language Learning*. Advance Online Access. doi:10.1111/lang.12324. accessed 25/9/2018.

Challenges by embodied, enactive, extended and ecological approaches to cognition have provided good reasons to shift away from neurocentric theories. (Gallagher, 2018)

Gallagher, S. (2018). Decentering the brain. *Constructivist Foundations*, 14.1.

[T]he mind is not seen as a product of the brain, but as an activity of the living being; an activity which integrates the brain within the everyday function of the human body (Fuchs, 2018).

Fuchs, T. (2018). *Ecology of the brain*. Oxford University Press.

The continual coupling of cognition to the world through the body both adapts cognition to the idiosyncrasies of the here and now, makes it relevant, and provides the mechanism for developmental change (Smith, 2005, p. 278)

Smith, L. (2005). Cognition as a dynamic system. Principles from embodiment. *Developmental Review*, 25, 278–298.

CDST rejects the brain/mind dualism. In order to explain language and its development, it is not just the brain, not just the body, but the brain-body-environment.

Gallagher, S., Hutto, D., Slaby, J., & Cole, J. (2013). The brain as part of an enactive system. *Behavioral and Brain Sciences*, 36 421–422.

As an ecological theory, CDST recognizes that second language development does not take place in static isolation from what is happening in the temporal and spatial environment in which it is situated. Rather, it is emergent from and dynamically interconnected with the environment (Larsen-Freeman, 2018).

Larsen-Freeman, D. (2018). Looking ahead: Future directions in, and future research into, second language acquisition. *Foreign Language Annals*, 51, 55–72.

Sociocultural Theory

Jim Lantolf, Penn State University, Xi'an JiaoTong University

AAAL 2019 Colloquium: The conceptual architecture of SLA research: Deepening the discussion

1. SCT is a general theory of psychological development and functioning
 - It must account for all aspect of higher human mental activity, including creation and use of any language

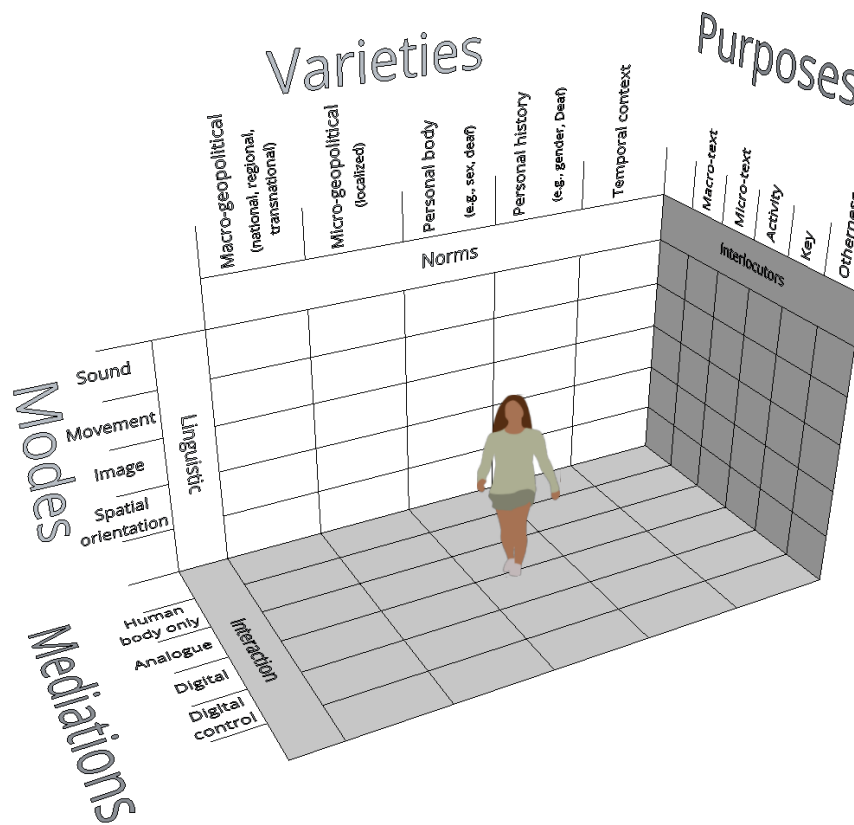
2. Unified theory:
 - Higher Consciousness sourced in human social activity mediated through semiotic systems
 - Individuals are therefore always and everywhere social beings
 - Their consciousness is always and everywhere mediated by the social activities they participate in
 - Individual agency only operates through collective agency
 - Collectividal

3. L2 Development
 - In the process of mastering a foreign language, signality and recognition still make themselves felt, so to speak, and still remain to be surmounted, the language not yet fully having become language (Voloshinov, 1973)
 - Meaning privileged over form
 - Conceptual Knowledge
 - Instruction = dialectical unity of teaching-learning to arm learners with resources to create and use signs in communicative activity
 - Spin-off: Reorganization of consciousness through new semiotic system
 - Research on learner ability to use new system to mediate consciousness
 - Cognitive tasks
 - Use of gesture

Clarifying issues in the conceptual and terminological architecture of SLA research

Howard Nicholas,
AAAL 2018: Colloquium handout

The Multiplicity Framework (Nicholas & Starks 2014, 69)



Repertoire: The set of communicative features accessible to self as a result of engagement with the repertoires of others.

Nicholas & Starks (2014, 117)

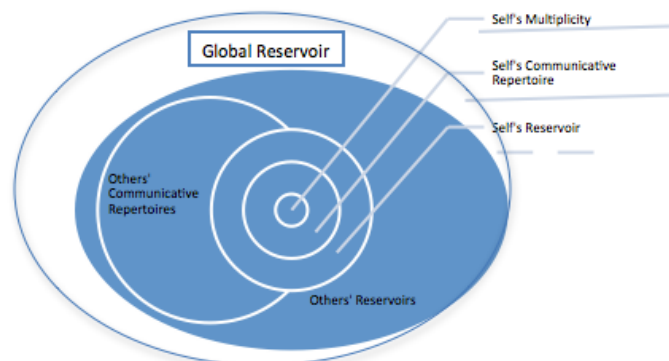


Figure 7.1: An overview of plurilingualisms and multilingualisms.

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