The 6th China International Forum
on Cognitive Linguistics

Language, Culture and Mind:

10 lectures on development, evolution and cognitive linguistics

Chris Sinha, University of Portsmouth, UK
chris.sinha@port.ac.uk

Lecture 1

Language, Culture and Mind:

Independence or Interdependence?

Introducing the speaker

- My field is psychology of language
- My background is in developmental psychology and psycholinguistics
- My theoretical and empirical research attempts to critically situate cognitive linguistics within a socio-cultural, semiotic approach to mind and language
- My work belongs within the situated, embodied, enactivist approach in cognitive science (see below)
- The general name I give to my theoretical and methodological commitments is the *socio-naturalistic approach.*

THE DEVELOPING BODY AND MIND NUMBER 7

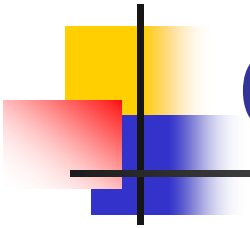
LANGUAGE AND REPRESENTATION

A SOCIO-NATURALISTIC APPROACH TO HUMAN DEVELOPMENT

Chris Sinha

My research interests

- Language and cognitive development
- The semantics and typology of the language of space and time
- Crosslinguistic and crosscultural studies of cognition and human development
- Evolutionary biology, cultural evolution and language evolution
- Cognitive semiotics, meaning and materiality



Overview of this lecture

- The two opposing paradigms in cognitive science
- Differing theoretical conceptions of
  - Language
  - Culture
  - Mind
- Differing views of the relationships between them

What is cognitive science?

- The interdisciplinary study of the mind
- Psychology, Linguistics, Artificial Intelligence, Philosophy, Anthropology, Neuroscience* (*also interdisciplinary)
- The term dates from the 1960's / 70's but the idea is older.
- Is cognitive science an inheritor of, or replacement for, general psychology?
- Where do we stand now in Cognitive Science?

Two Paradigms

- Classical Rules & Symbols Cognitivism
  - Formal
  - Nativist
  - Modular
  - Abstract, general models
  - Universalist
  - Monologic
  - Logocentric - linguistic
  - Methodological individualism
  - Disembodied mind
  - Algorithmic
- Situated, Embodied Enactive Cognition
  - Functional
  - Epigenetic-developmental
  - General principles of learning and organization
  - Contextual & particular
  - Interactional-dialogic
  - Multi-modal
  - Extended and distributed mind
  - Embodied mind
  - Connectionist

Where does Cognitive Linguistics fit in these paradigms?

- Cognitive Linguistics rejects formalism and embraces a general functional perspective—Cognitive-Functional Linguistics (C-FL)
- However, some of its leading exponents retain some of the assumptions of Classical Cognitivism in regard to:
  - Nativism
  - Theoretical and methodological individualism
  - The assumption that language *reflects* cognition without equally emphasizing that it *transforms it.*

Defining our terms: Language

- Formalist approaches
  - An infinite set of sentences (early Chomsky)
  - A rule governed system of symbols, possessing the features of:
    - *Productivity*—the combinatorial rules enabling the generation or construction of novel legal sentences (or of an infinite set of legal sentences)
    - *Systematicity*—stability of symbolic value across lawful combinations, eg
      - *The lectures are in Beijing*
      - *The lectures in Beijing take place in December*

Formalism and the problem of stability of meaning

- Formalist theories are *syntax driven*—the rules determine the possible forms of legal combinations
- For a formal description of language to "hook up" with the world, a semantics is required that maps sentences to objective states of affairs
- This referential relationship must be *determinate and objective*
- The mind is therefore considered to be "a *syntactically* driven machine whose state transitions satisfy *semantical* criteria of coherence" (Fodor and Pylyshyn)
- Therefore, formalist theories require strict *compositionality* to account for systematicity: the meanings of legal combinations are built up from the meanings of their constituents

The problem of meaning and the formalist solution

- Natural language expressions are difficult to characterise in terms of strict compositionality:
  - *The lectures are in Beijing*
  - *The lectures in Beijing take place in December*
- Formalist theories of natural language therefore prefer to posit *general* meanings instead of polysemy
- The *classical cognitivist* solution to the general problem of meaning is to posit a computational *Language of Thought* (Fodor)
- Which anchors Knowledge of Language (I-language)

Cognitive-functional linguistics

- Languages are conventional symbol systems enabling *communication*, *conceptualization and construal*
- Languages are open inventories of symbolic assemblies at different levels of organization
- Languages are multi-level systems of *mapping* between linguistic conceptualization and linguistic expression
  - Fauconnier, Lakoff, Langacker, Talmy *et al.*

Language as a tool

- Functionalism: language is a tool whose form or structure is shaped by its use for communication
  - Prague School Linguistics (Jakobson, Mukaróvsky)
  - Karl Bühler (Organon model)
  - Functionalist Linguistics: Dik, Givón
- Semiotic mediation: language is a *tool for thought* (Condillac, Vygotsky) which shapes cognition (Whorf, Sapir)

Language as a social institution

- Grammars are normative and conventional
  - Structuralism: arbitrariness
  - C-FL: conventions may be *motivated*
- *Norms* are intersubjectively shared rules that regulate conduct and are objects of common knowledge (Itkonen)
- Knowledge of language is not identical to language (contra Chomsky), because knowledge may vary inter-individually, but rules are shared between at least two people (cf Wittgenstein's argument against a private language)

Language as a biosemiotic system and ecological niche

- Language is a biologically grounded communication system
- A system of communicative *signs* that can be analysed from the perspective of biosemiotics (semiotics=study of signs)
- Language is a species-unique ecological niche that is fundamental to human *culture*
- Language is a *biocultural niche*

Defining our terms: Culture

- What is culture?
- Something shared by one group but not another (specificity and difference)
- Ways of doing things (practices)
- Ways of thinking (mental models, schemas, worldviews)
- Ways of talking (discourses)
- “High” *vs.* “Low” cultures, subcultures

What is Culture? The human science answer

- A pattern or patterns of meaning thematized by a stock of narratives and other "thematizers", such as rituals, myths, icons, emblems.
- A normative order realized and reproduced in semiotic systems/vehicles (including language), and in enduring artefacts and institutions; and enacted and renewed in social and communicative practices.
- The binding of cognition and affect in specific space-time configurations which could be called (after Raymond Williams) "structures of feeling".
- Not "as opposed to" Nature, but linked to and interfaced to nature by conventions which canalize and partially govern the reproduction-enaction of the cultural-symbolic order.

What is Culture?
The biological science answer

- intra-species group differences in behavioural patterns and repertoires
- which are not directly determined by ecological circumstances (such as the availability of particular resources employed in the differing behavioural repertoires)
- which are learned and transmitted across generations
- Examples: primate tool use, birdsong

What is cultural psychology?

- Includes, but is not identical with, crosscultural psychology as a method
- Focuses on ”the systemic and dynamic nature of culture in psychology, and psychology in culture” (Valsiner, 1995)
  - Semiotic mediation of higher cognitive processes
  - Situated learning and cognition
- From a historical-developmental perspective (Vygotsky: Cultural-historical psychology)

What is cultural linguistics?

- ”the purely linguistic inquiry is part and parcel of a thorough investigation of the psychology of the people’s of the world” (Boas, 1911).
  - cf. Wilhelm Wundt: *Völkerpsychologie*
- ”Cultural linguistics is concerned with most of the same domains of language and culture [as Boasians] … It assumes a perspective which is essentially cognitive”
- ”Linguistic meaning is subsumed within world view” (cultural schemas) (Gary Palmer, 1996)

Defining our terms: Mind

- The Computational & Representational Mind
  - Fodor, Johnson-Laird, Jackendoff
- The Embodied Mind
  - Varela, Thompson & Rosch; Lakoff & Johnson
- The Extended & Distributed Mind
  - Merleau-Ponty, Vygotsky, Clark, Hutchins
- The Discursive and Dialogic Mind
  - Bakhtin, Harré, Marková, Wertsch
- The Shared Mind
  - Husserl, Wittgenstein, Trevarthen

Extended embodiment 1

- [It] is always difficult for the psychologist to think of anything ‘existing’ in a culture ... We are, alas, wedded to the idea that human reality exists within the limiting boundary of the human skin! (Bruner 1966: 321).
- The body is our general medium for having a world ... Sometimes the meaning aimed at cannot be achieved by the body’s natural means; it must then build itself an instrument, and it projects thereby around itself a cultural world.
  - (Merleau-Ponty 1962: 146).

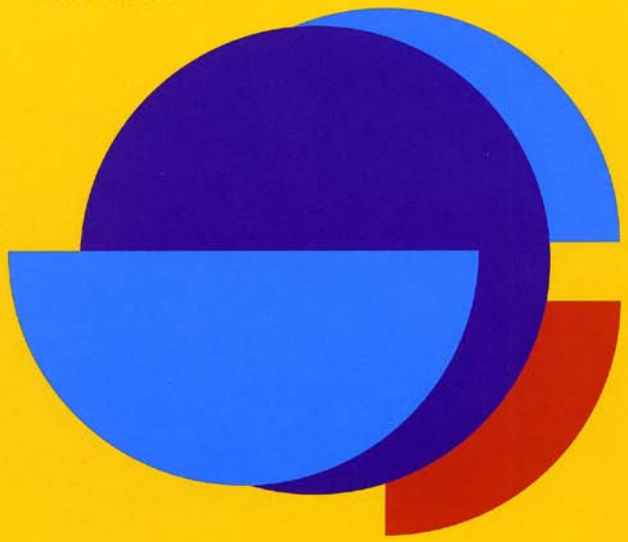
Extended Embodiment 2

- Everyday artifacts ... are not “culturally neutral”, not just in the sense that they may be more or less familiar to individuals from different cultures, but also because they *embody* different conceptualizations or cultural schemas.
- This “extended embodiment” does not exist in a vacuum: it is not, as it were, a property of the objects “in themselves”. Rather, it is constituted and exemplified by the participation of the objects in an entire matrix of cultural practices, some of which are linguistic (or discursive) practices, and some of which are nonlinguistic.
- Furthermore, cultural schemas find a further manifestation, or expression, in the lexico-grammatical structures of natural languages, and it is from this perspective perhaps no surprise that children should be so adept, as Bowerman and her colleagues have shown, in acquiring the specific conceptualization-expression mappings of their mother tongue.
  - (Sinha & Jensen de López, 2000: 36)

The Shared Mind

Perspectives on intersubjectivity

Edited by
Jordan Zlatev
Timothy P. Racine
Chris Sinha
Esa Itkonen



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Intersubjectivity

- The sharing of experiential content (feelings, perceptions, thoughts and linguistic meanings) among two or more subjects
  - Zlatev et al. 2008: 1
- The shared meanings and sense of community engendered by participation in joint action and interaction

Participation

- Actions demonstrating forms of involvement performed by parties within evolving structures of talk ... we need to expand our notion of human participation in a historically built social and material world by attending to material structure in the environment
  - Goodwin & Goodwin 2004: 222

Mind and Language: Cognitivism

- Formalist Cognitivism views language as an imperfect (resource-limited) “print-out” of the internal processes taking place in the computational, representational mind.
- This is the basis of Chomsky’s distinction between competence and performance.
- And is closely linked to Chomsky’s Argument from the Poverty of the Stimulus:
  - Innateness
  - Modularity
  - Encapsulation
- Extended by Fodor to include semantics (the Language of Thought) as well as Universal Grammar.

Mind and Language: Linguistic relativity (Whorf/Sapir)

- Linguistic relativity posits both difference:
  - “users of markedly different grammars are pointed by their grammars toward different types of observations and hence different evaluations of externally similar acts of observation, and hence are not equivalent as observers but must arrive at somewhat different views of the world” (Whorf, 1940)
- And universality:
  - “Gestalt psychology gives us a canon of reference for all observers, irrespective of their languages or scientific jargons, by which to break down and describe all visually observable situations, and many other situations also”. (Whorf, 1939)
- How can these perspectives be reconciled?

Mind and Language: Piaget

- Another view that emphasizes the priority of cognition over language is that of Piaget
- Piaget considered that the basis of all cognition is sensori-motor intelligence, defined as the structured co-ordination of action and perception
- Piagetian theory can therefore be considered as a forerunner of modern theories of the basis of cognition in perception-action linkages and circuits, including the importance of mimetic or imitative linkages (mirror neurons)

Mind and Language: Piaget

- Piaget considered that language is a manifestation of symbolic thought occurring with the emergence of the *semiotic function* at the end of the second year of life
- Language does not transform thought: it merely expresses increasingly complex modes of coordination of action
- Piaget was an important precursor of cognitive linguistics, but he under-emphasized the significance of imagery in schematization
- Conversely, cognitive linguists often under-emphasize the importance of development and of the semiotic basis of language

Mind and Language: Vygotsky

- Every function in the child's development appears twice: first on the social level, and later, on the individual level; first, *between* people (interpsychological), and then *inside* the child (intrapsychological) ... All the higher functions originate as actual relations between human individual.
  - Lev Vygotsky, 1896-1934.

Mind and Language: Vygotsky

- The Zone of Proximal Development (ZPD)

  The difference or gap between what the child can achieve by independent activity and problem solving, and what she or he can accomplish with help from a more competent person

Mind and Language: Vygotsky

- *Semiotic Mediation of Higher Cognitive Function*

  The internalization of cultural forms of behaviour involves the reconstruction of psychological activity on the basis of sign operations

  Vygotsky uses the example of a knot in a handkerchief as an aide-mémoire

Mind and Language: Vygotsky

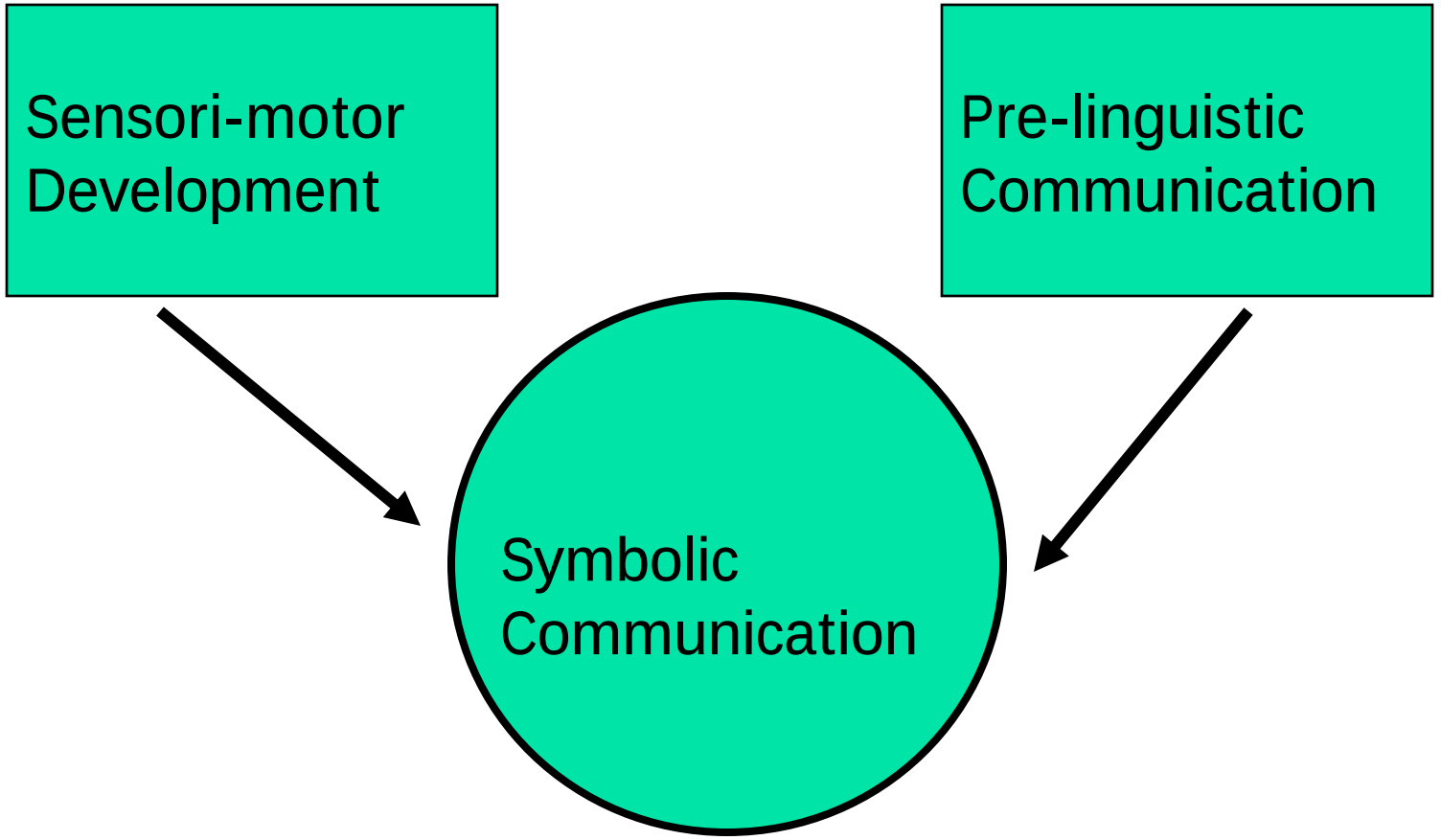
- Culture as Embodied Practice
- *Externalization and Internalization*
- Human cognition is embodied in the products of material and symbolic culture (tools, artefacts and signs)
- The developing human being internalizes (Vygotsky) or appropriates (Leontiev) the use of these products by way of guidance by or apprenticeship to adults (scaffolding: Bruner)

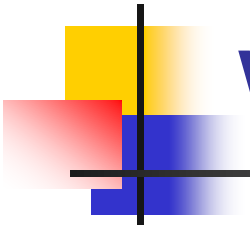
Mind and Language: Vygotsky

The analogy between sign and tool use

"rests on the mediating function that characterises each of them [But] the tool is *externally* oriented [while] the sign is *internally* oriented ... The use of artificial means, the transition to mediated activity, fundamentally changes all psychological operations ... Higher psychological function [is] the combination of tool and sign in psychological activity"

The merging of two lines of development (after Vygotsky)





What conclusions can we draw

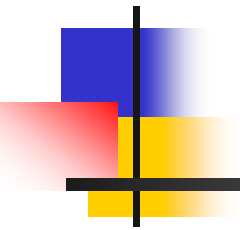
- Very few so far, without further evidence
- Still, we can discern some broad dimensions that distinguish the Classical Cognitivist, Formalist program from all the others we have discussed
- We conclude by delineating these broad differences between formalism and functionalism

Two views of language, communication and learning

- Formalism
  - Language is a formal system of rules and symbols.
  - Communication is transmission of ideas.
  - Learning is the internalization of the system on the basis of linguistic input.
- Functionalism
  - Language is a semiotic vehicle and a cognitive tool.
  - Communication is symbolic action in an intersubjective field.
  - Learning is situated, embodied and socially scaffolded.

Autonomy *vs* Holism

- Formalist theories emphasize the autonomy of syntax from meaning, and view [lexical] semantics as only trivially culturally variable. Language is *autonomous* from culture
- Functionalist theories recognize universal motivations, but viewing language as a *part of* symbolic culture, leave open a space for culturally determined crosslinguistic variation



Thank you