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CENTER FOR COGNITIVE STUDIES,  
PHILOLOGICAL FACULTY,  
LOMONOSOV MOSCOW STATE UNIVERSITY

# LANGUAGE AND THOUGHT:

## CONTEMPORARY COGNITIVE LINGUISTICS



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# LANGUAGE AND THOUGHT: CONTEMPORARY COGNITIVE LINGUISTICS

The international team of authors, brought together here for the first time, offers a panoramic view of contemporary cognitive linguistics. Cognitive linguistics is understood as broadly as possible, as the study of any aspect of language in connection with human cognitive processes. The book consists of three sections. The chapters in the first section discuss the general architecture of language from a cognitive point of view. The following two sections are devoted to two perspectives on language: language as storage of knowledge and language as a communicative process. The volume is expected to be useful not only to specialists in linguistics, psychology, and artificial intelligence, but also to a wide range of readers interested in the structure of language, its evolution, and processes of cognition, thought, and speech communication.

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<i>Aleksandr E. Kibrik, 1939—2012</i> ( <i>Lomonosov Moscow State University, Russia</i> ) A cognitive approach to language. . . . .	29
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The author offers his understanding of language exploration from a cognitive point of view. The main question concerns the possibility of linguistically reconstructing a cognitive structure, relying on the principle of cognitive motivation behind linguistic form. A technique for such reconstruction is proposed and applied to specific linguistic examples from structurally diverse languages, including Russian, Tsakhur, Dargwa, Bagwalal, Bengali, Alutor, etc., all illustrating the phenomenon of markedness, correlated with the cognitive operator norm vs. deviation from norm. Special attention is given

to the phenomenon of inversible markedness, especially in the situation of “anomalous” form-meaning correspondences. The scope of inversible markedness includes systemic correlations between the values of various parameters from the point of view of the operator of cognitive norm. Some of the value combinations correspond to the cognitive norm while others diverge from it.

**Wallace Chafe** (*University of California, Santa Barbara, USA*)

Toward a thought-based linguistics . . . . . 60

Language accomplishes its major function by associating thoughts with sounds, and at the same time by organizing thoughts in ways that make this association possible. We thus need above all to develop a fuller understanding of thoughts. Although we spend our lives thinking, just what we are doing is far from clear, nor is the relation of thinking to language, which plays a crucial role in thinking but is far from the whole story. Various disciplines have an interest in these questions and can contribute in various ways to answering them. The paper moves from linguistics to psychology, showing how they can combine to provide a fuller understanding of thoughts and language.

**T. Givón** (*University of Oregon*)

and *White Cloud Ranch, Ignacio, Colorado, USA*)

Complexity and development . . . . . 89

In this paper I cite data from the genesis of syntactic complexity in order to discuss the fundamental unity of the three developmental trends found in language: diachrony, ontogeny (acquisition) and phylogeny (evolution). I note the strong parallels between those three processes and suggest that they involve not only mere analogy but actual shared mechanisms. To support this heretic idea, I cite well known facts from biological evolution that link the actual developmental mechanisms of phylogeny to ontogeny, on the one hand, and to everyday adaptive behavior/learning, on the other. Lastly, I suggest that language diachrony can be viewed as everyday adaptive behavioral innovation, provided one does not view diachrony as just the end product of long-gapped historical changes, but rather as the concatenation of multiple instances of adaptive individual behaviors that take place on-line during everyday communication. The latter perspective is easier to adopt when one studies synchronic variation, grammaticalization and internal reconstruction.

**Alexey D. Koshelev** (*Publishing House*

*"Languages of Slavic Culture", Moscow, Russia)*

On the threshold of an evolutionary-synthetic theory of language. . . 123

The first section of this paper deals with the crisis of contemporary theoretical linguistics, illustrating the coexistence and independent development of a number of mutually exclusive language theories such as those of Noam Chomsky, Ray Jackendoff, Igor Mel'čuk, George Lakoff, etc. The second section demonstrates that, apparently, neither scientific disputes, the interdisciplinary approach nor experimental data reconcile the varying schools of linguistic thought. In the conclusion, it is postulated that the only possible way out of this theoretical dead end is the development of a unified concept, an evolutionary synthetic theory of language. The article contains a brief outline of the theory in question.

**Alexander V. Kravchenko** (*Baikal State University of*

*Economics and Law, Irkutsk, Russia)*

On the subject matter of linguistics . . . . . 155

The article addresses the issue of the lasting methodological crisis in linguistics which, as a science, lacks a clearly formulated research project. Absence of a unified methodology accounts for the fuzziness of the subject matter of linguistics and prevents any pointed discussion of the function of language as a kind of species-specific, biologically grounded, socially informed interactional activity. A way out of the methodological dead end that would allow linguists to develop a synthetic theory is seen in viewing individual human organisms and human society as living systems whose organization is based in embodied orientational interactions — that is, natural language.

**Vadim B. Kasevich** (*Saint Petersburg State University, Russia)*

*Kognicija* as a Russian equivalent for English *cognition*? . . . . . 173

This paper offers an analysis of technical terms widely used in present-day cognitive linguistics and other cognitive disciplines, viz.: *znanie* 'knowledge', *znak* 'sign', *informacija* 'information', *kognicija* 'cognition', etc. Special attention is paid to the term *information* as it is used in the humanities. It is suggested to take this notion as a semantic primitive not reducible to a structure of simpler constituents. One more point to be emphasized is the role of ordinary language in the processes of coining new technical terms.



**Vladimir M. Alpatov** (*Institute of Linguistics, Russian Academy of Sciences, Moscow; Lomonosov Moscow State University, Russia*)

Predecessors of cognitive linguistics ..... 185

Usually it is considered that cognitive linguistics started being created in the 1950s — 1960s. However some ideas anticipating this paradigm were expressed much earlier, by W. von Humboldt. One can also note such scholars as K. Vossler, V. Voloshinov, A. Sechehaye, A. Gardiner, K. Bühler, V. Abaev. They did not limit themselves to the analysis of linguistic structure, but tried to study the functioning of language, to connect language with the speaker.

## II. LANGUAGE AS STORAGE KNOWLEDGE. SEMANTICS. OFF-LINE

**Lera Boroditsky** (*University of California, San Diego, USA*)

How languages construct time ..... 199

How do people construct their mental representations of time? I focus on work examining the role that spatial metaphors and basic spatial representations play in constructing representations of time across languages. The results reveal that the metaphors we use to talk about time have both immediate and long-term consequences for how we conceptualize and reason about this fundamental domain of experience. How people conceptualize time appears to depend on how the languages they speak tend to talk about time, the current linguistic context (what language is being spoken), and also on the particular metaphors being used to talk about time in the moment. Further, people who conceptualize space differently also conceptualize time differently suggesting that people co-opt representations of the physical world (e. g., space) in order to mentally represent more abstract or intangible entities (e. g., time). Taken all together these findings show that conceptions of even such fundamental domains as time differ dramatically across cultures and groups. The results reveal some of the mechanisms through which languages and cultures help construct our basic notions of time.

**Laura A. Janda** (*Arctic University of Norway, Tromsø, Norway*)

Russian aspectual types: Croft's typology revised ..... 213

Croft in his *Verbs. Aspect and causal structure* proposes a typology for aspect and a means of diagramming aspectual

contours. In this article I confront Croft's typology with the aspectual types found in Russian, focusing on what benefits such a typology can bring to our understanding of Russian aspect. There are a number of Russian aspectual facts that fall beyond those specified in Croft's system. However, it is possible to take this system and expand it, creating an open-ended means of visualizing aspectual types, which is what I attempt here. The result gives us insights into aspectual ambiguities and into the relationships among groups of verbs that show different behaviors in terms of their aspectual partnerships in Russian. This open-ended version of Croft's model could potentially be expanded to many more languages.

**Elena A. Grishina** (*Vinogradov Institute for Russian Language, Russian Academy of Sciences, Moscow, Russia*)

Circles and swings: Complex trajectories and their meanings  
in Russian gesticulation . . . . . 238

The study analyzes two types of nonlinear trajectories in Russian gesticulation, namely circular and oscillating movements. The meanings of these trajectories, their inner forms, and the connection with the accompanying speech have been analyzed. The main semantic components of the oscillating movements are 'uncertainty', 'unimportance', 'point of reference', 'duality', and 'diversity'; of the circular movements — 'round object', 'development', 'repetition', 'totality', 'indefiniteness', 'transformation'. The components 'indefiniteness' and 'transformation' are very often accompanied with the two-hand movement *scroll*, which combines the circles and the swings. The study also describes the possibilities of using the gestures, first, to define the semantic components, which exist in the utterance, but are not expressed with linguistic means; and second, to disambiguate instances of polysemy.

**Alexey D. Koshelev** (*Publishing House "Languages of Slavic Culture", Moscow, Russia*)

On a referential approach to lexical polysemy . . . . . 287

The article lays out a referential approach to describing the system of meanings for sensory vocabulary, i.e., nouns and verbs referring to "visible" referents (objects and physical actions). The primary objective of the referential description is to properly delineate referents of a word in a given meaning. In other words, such a description should serve as

a basis for semantically correct lexical nominations. To quote an instance, the paper contains a description of the system of meanings for the Russian verb *bežat* 'to run'. This description allows for explaining why phrases like *Mašina bežit po šosse* 'The car is driving on the highway' (literally, "is running") and *Pauk bežit po stene* 'The spider is running on the wall' are semantically correct while *Motocikl \*bežit po šosse* 'The motorcycle is running on the highway' and *Muxa \*bežit po stene* 'The fly is running on the wall' are not. Various linguistic, cognitive, physiological and neurobiological data (the latter dealing with memory codes) are used to describe basic lexical meanings.

**Vyvyan Evans** (*Bangor University, UK*)

Conceptual vs. inter-lexical polysemy: An LCCM theory account . . . 355

In this paper, I consider two types of polysemy that haven't received wide attention in the cognitive linguistics literature. Within this tradition polysemy is normally considered as a function of headwords in semantic memory: several independent but related meanings correspond to a word, and as a result polysemy arises in language use. First, I argue that polysemy can also arise from the non-linguistic knowledge to which words facilitate access. This phenomenon I refer to as conceptual polysemy. I illustrate this with an analysis of the lexical item *book*. Moreover, polysemy also arises from different word forms, which, at least on first blush, appear to share a common semantic representation. This phenomenon I refer to as inter-lexical polysemy. I illustrate with a detailed case study involving an analysis of the prepositional forms *in* and *on*. I draw on the Theory of Lexical Concepts and Cognitive Models, to account for these phenomena.

**Tore Nessel and Anastasia Makarova**

(*Arctic University of Norway, Tromsø, Norway*)

Space in time? The asymmetry of the preposition *v* 'in'  
in spatial and temporal constructions . . . . . 388

A key topic in contemporary cognitive linguistics is the relationship between the source and target domains of metaphors. The present article explores this relationship with regard to the metaphor TIME IS SPACE. Based on an analysis of constructions with the Russian preposition *v* 'in', we show that the relationship between time and space is asymmetric. While in the spatial domain the accusative and the prepositional

cases form a contrastive opposition (direction vs. location), in the temporal domain the two cases are in complementary distribution.

**Ludmila M. Leshchova**

*(Minsk State Linguistic University, Republic of Belarus)*

Cognitive linguistics and terminological bilingual

interpretive lexicography . . . . . 411

The contribution concerns the relationship between cognitive linguistics and lexicography. It is argued that research in cognitive linguistics may be of great use for theoretical lexicography and terminography. Cases of applicability of the basic principles of cognitive linguistics to lexicography are considered. An entry is presented from the Learner's Anglo-Russian Translation and Explanatory Dictionary on Public Administration which is now in the process of being designed on a number of principles of cognitive linguistics.

**Tatiana A. Stroganova<sup>1</sup>, Anna V. Butorina<sup>1</sup>, Anastasia Yu. Nikolaeva<sup>1</sup>,**

**and Yuri Yu. Shtyrov<sup>2,3,4</sup>** (*<sup>1</sup>Moscow State University for Psychology and Education, Russia; <sup>2</sup>Aarhus University, Denmark;*

*<sup>3</sup>Medical Research Council, Cognition and Brain Sciences Unit, UK;*

*<sup>4</sup>National Research University Higher School of Economics, Moscow, Russia)*

Automatic ultrarapid activation and inhibition of

cortical motor systems in spoken word comprehension . . . . . 426

To address the hotly debated question of motor system involvement in language comprehension, we recorded neuro-magnetic responses elicited in the human brain by unattended action related spoken verbs and nouns and scrutinized their time course and neuroanatomical substrates. We found that already very early on, from ~80 ms after disambiguation point when the words could be identified from the available acoustic information, both verbs and nouns produced characteristic somatotopic activations in the motor strip, with words related to different body parts activating the corresponding body representations. Strikingly, along with this category-specific activation, we observed suppression of motor cortex activation by competitor words with incompatible semantics, documenting operation of the neurophysiological principles of lateral/surround inhibition in neural word processing. The extremely early onset of these activations and deactivations, their emergence in the absence of attention, and their similar

presence for words of different lexical classes strongly suggest automatic involvement of motor-specific circuits in the perception of action related language.

**Dagmar Divjak** (*University of Sheffield, UK*)

Exploring the grammar of perception.

A case study using data from Russian. . . . . 448

In this paper, I pursue the distributional hypothesis and apply it to verbs of perception. I chart the way in which verbs of vision, hearing and touch are used, morphologically and syntactically, in a representative sample of corpus data. The aim is, on the one hand, to determine to which extent a verb's grammatical context alone allows us to classify utterances according to perception type, and, on the other hand, to chart the similarities and differences in the verbs' preference for morphological markers and syntactic constructions. If contexts are highly specialized, language structure, as it is witnessed in use, could assist sensory impaired speakers in building up viable representations of concepts, even if sensory experience is lacking. Some aspects of experience are so central and pervasive that reference to them has grammaticalized.

**Valery D. Solovyev** (*Kazan Federal University, Russia*)

Possible mechanisms of change in the cognitive structure of

synonym sets. . . . . 478

The paper deals with diachronic changes in the structure of synonym sets. The structure is understood in the fashion of the cognitive approach as consisting of a center and a periphery. The most frequent word of a set is treated as the center of the set. The structure of synonym sets, the possible ways it can change and the factors influencing this process are described. I consider in detail the dynamics of the synonym set {*starat'sja*, *pytat'sja*} 'try'. For tracking changes, Russian language data from the last two centuries in the corpus Google Books Ngram are used.

**Maria D. Voeikova, Victoria V. Kazakovskaya, and**

**Daria N. Satyukova** (*Institute for Linguistic Studies,*

*Russian Academy of Sciences, Saint Petersburg, Russia*)

Semantics of adjectives in child and adult speech . . . . . 488

Adjectives are acquired by children later than nouns and even verbs, and their mapping to real object properties is often mistaken. Children use early adjectives in an incorrect way,

without a clear understanding of which properties they denote. Cognitive concepts of different properties gradually evolve through the practice of using the corresponding adjectives. Our paper considers several case studies of adjective acquisition by Russian children who are aged between one and three, and the analysis of typical adjective vocabulary of these children and their mothers. We also study the syntagmatic surroundings of early adjectives, namely the fact that they often occur in synonymous and antonymous chains. Finally, we investigate the impact of mothers' dialogic strategies on the acquisition of adjectives, more specifically, the particular features of the initial utterances and the responses of the adult interlocutor.

### III. LANGUAGE AS A PROCESS. COMMUNICATION. ON-LINE

**Arto Mustajoki** (*University of Helsinki, Finland*)

Communication failures through the prism of

the speaker's needs . . . . . 543

Communication failures are discussed in the paper in a wider perspective than is usually done in linguistic studies. When transferring information and feelings, the ability to conduct recipient design plays an important role alongside purely linguistic factors; without this ability, the speaker runs the risk of falling into the trap of common ground fallacy. Moreover, the speaker may have other needs besides communicative ones, and these may hinder successful communication. One possible risk is the avoidance of cognitive efforts, which may lead to a failure of recipient design. A second cause of communication failure is the speaker's need of self-presentation, leading to the use of words and expressions unfamiliar to the recipient. A further possible reason is an excessive desire to display politeness, which may block the recipient's understanding of the main meaning of the utterance.

**Alan Cienki** (*VU University, Amsterdam, Netherlands;*

*Moscow State Linguistic University, Russia*)

The notion of the dynamic scope of relevant behaviors

in cognitive linguistic theory . . . . . 560

Linguists from various theoretical frameworks are increasingly coming to consider spoken language and its grammar as polymodal, at least to some degree. A useful approach to understanding the complex relations between language, gesture,

intonation, and other communicative means of expression can be found in Cognitive Linguistics and in Relevance Theory. In this article, a model of communication is proposed in which a central role is played by the scope of behaviors that the speaker or those attending to him or her consider relevant in the given context. According to this model, the notions “language” and “gesture” are best seen as categories that have a prototype structure. This helps explain how different forms of expression can overlap with each other and also how the focus of the scope of relevant behaviors can occasionally move from its default central prototype — the spoken words — to gestures or other behaviors, depending on the communicative situation.

**Alexander V. Kravchenko** (*Baikal State University of Economics and Law, Irkutsk, Russia*)

A cognitive-semiotic view of grammar. . . . . 574

Leaning on the biology of cognition as a theory of living systems, the article offers a non-trivial approach to grammar, defining it as a cognitive-semiotic mechanism for categorizing human experience of interactions with the world. The inconsistency of traditional approaches in defining the subject matter of grammar, which can be put down to the written-language bias in linguistics, is shown to preclude non-contradictory answers to the core questions about the nature of language, the nature of the linguistic sign, and the function of language. Arguments are given for the semiotic nature of grammar as a sign system for categorizing human interactional experience, and a difference is shown between the cognitive mechanisms of interactions in the domains of natural language and written language.

**Andrej A. Kibrik** (*Institute of Linguistics, Russian Academy of Sciences, Moscow; Lomonosov Moscow State University, Russia*)

Cognitive discourse analysis: Local structure. . . . . 595

Cognitive linguistics is traditionally focused on off-line phenomena, associated with the language's role as a system of information storage. However, on-line phenomena — in the first place, natural discourse — are prone to cognitive analysis to the same extent. The article lays out a research program of cognitive discourse analysis, in particular, in the domain of local discourse structure. The material under investigation is a corpus of spoken Russian stories. The basic quantum of spoken

discourse is the elementary discourse unit (EDU). EDUs appear in discourse in three major types: canonical, that is clausal; short; and long. Among the short, or subclausal, EDUs there is a distinct group of retrospective units, including the instances of echo, increment, and parcellation. Prosodic devices, an intrinsic element of spoken discourse, are considered in detail. Prosodic encoding is characteristic of the discourse-semantic category of “phase” which is useful in settling the question of whether the notion of sentence is applicable to spoken discourse. The linguistic phenomena treated in the article are explained on the basis of cognitive processes, such as speech production in real time, planning, self-monitoring, activation, etc. Hypotheses are proposed regarding the relevance of the EDU in the evolutionary rise of human language.

**Olga V. Fedorova** (*Lomonosov Moscow State University;  
Russian Presidential Academy of National Economy and  
Public Administration, Moscow, Russia*)

The typology of referential conflicts (experimental study). . . . . 635

The present survey focuses on the phenomenon of referential ambiguity, or referential conflict, i.e., the discourse situation when two or more referents are activated high enough to be chosen the antecedent of a reduced referring expression. While permanent ambiguity is occasional and quite uncommon, potential ambiguity is pervasive in language and, thus, should be thoroughly studied. In addition to proposing the typology of referential conflicts, I try to give the explanation to the effects related to the potential referential conflicts that are described in the literature. I propose a model of referential conflict as well as a general model of referential choice in which the mechanism responsible for the preclusion of referential conflict is considered as a separate module.

**Vera Kempe, Melissa Rookes, and Laura Swarbrigg**  
(*Abertay University, Dundee, UK*)

Speaker emotion can affect ambiguity production . . . . . 676

Does speaker emotion affect degree of ambiguity in referring expressions? We used referential communication tasks preceded by mood induction to examine whether positive emotional valence may be linked to ambiguity of referring expressions. In Experiment 1, participants had to identify sequences of objects with homophonic labels (e. g., *the animal bat, a baseball bat*) for hypothetical addressees. This required modification of the



homophones. Happy speakers were less likely to modify the second homophone to repair a temporary ambiguity (i. e., they were less likely to say *First cover the bat, then cover the baseball bat*). In Experiment 2, participants had to identify one of two identical objects in an object array, which required a modifying relative clause (*The shark that's underneath the shoe*). Happy speakers omitted the modifying relative clause twice as often as neutral speakers (e. g., by saying *Put the shark underneath the sheep*), thereby rendering the entire utterance ambiguous in the context of two sharks. The findings suggest that one consequence of positive mood appears to be more ambiguity in speech. This effect is hypothesized to be due to a less effortful processing style favoring an egocentric bias impacting perspective taking or monitoring of alignment of utterances with an addressee's perspective.

**Olga V. Dragoy<sup>1,2</sup>, Mira B. Bergelson<sup>1</sup>, Ekaterina V. Iskra<sup>1,3</sup>,**

**Anna K. Laurinavichyute<sup>1</sup>, Elena M. Mannova<sup>3</sup>,**

**Anatoly A. Skvortsov<sup>1,2,3</sup>, and Alexander I. Statnikov<sup>4</sup>**

*(<sup>1</sup>National Research University Higher School of Economics,*

*Moscow, Russia; <sup>2</sup>Moscow Research Institute of Psychiatry,*

*Russia; <sup>3</sup>Center for Speech Pathology and Neurorehabilitation,*

*Moscow, Russia; <sup>4</sup>Center "Live Streams", Moscow, Russia)*

Sensory-motor stereotypes in language:

Evidence from speech pathology . . . . . 697

In this paper we look into differences between the two types of aphasic disorders leading to speech comprehension deficits and make an attempt to delineate possible backup strategies that can be used by both aphasic and healthy speakers to circumvent them. We argue that not only patients with semantic aphasia, but also other aphasia subtypes and control speakers, experience difficulties in processing semantically reversible sentences as compared to irreversible ones. Still, semantic aphasia patients experiencing difficulties in the interpretation of quasi-spatial relations based on grammar markers will consistently exploit pragmatics when faced with semantically reversible sentences. They overuse ontogenetic sensory-motor stereotypes that reflect normal sequences of object manipulation.

**Stefan Th. Gries** (*University of California Santa Barbara, USA*)

Structural priming: A perspective from observational data and

usage /exemplar-based approaches . . . . . 721

One very well-studied phenomenon in the domain of language production is structural priming, i.e., the tendency that speakers tend to re-use structures they have recently comprehended or produced themselves. Ever since early work, the vast majority of studies on this topic has used experimental methodologies. However, while such experimental studies of structural priming outnumber observational ones by a large margin, there have been observational studies that predate experimental ones, and in the last few years corpus-based studies of priming have begun to influence priming studies more. This development has been facilitated by the advent of larger corpora of spoken data, new statistical methodologies, and a range of new theoretical ideas on priming that are closely related to usage-/exemplar-based models.

**Michael Tomasello** (*Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany*)

The usage-based theory of language acquisition . . . . . 755

This paper outlines the main theses of the usage-based theory of language acquisition, according to which language structure emerges from language use. This is applicable to the level of individual words, as well as to the level of grammar. In the process of language acquisition, children hear some utterances and then form abstract language constructions. This is due to the fact that a person has a universal set of general cognitive processes, which can be divided into two groups: first, cognitive skills of “intention-reading” that are responsible for the functional dimension of language, and second, cognitive skills of “pattern-finding” responsible for its grammatical dimension. These processes determine how children construct language — that is a structured set of language constructions — from the language that they hear around them.

**Susan Goldin-Meadow** (*University of Chicago, USA*)

Widening the lens: What the manual modality reveals about language, learning and cognition . . . . . 785

The goal of this paper is to widen the lens on language to include the manual modality. We look first at hearing children who are acquiring language from a spoken language model and find that even before they use speech to communicate, they use gesture. Moreover, those gestures precede, and predict, the acquisition of structures in speech. We look next at deaf children whose hearing losses prevent them from

using the oral modality, and whose hearing parents have not presented them with a language model in the manual modality. These children fall back on the manual modality to communicate and use gestures, which take on many of the forms and functions of natural language. These homemade gesture systems constitute the first step in the emergence of manual sign systems that are shared within deaf communities and are full-fledged languages. We end by widening the lens on sign language to include gesture and find that signers not only gesture, but they also use gesture in learning contexts just as speakers do. These findings suggest that what is key in gesture's ability to predict learning is its ability to add a second representational format to communication, rather than a second modality. Gesture can thus be language, assuming linguistic forms and functions, when other vehicles are not available; but when speech or sign is possible, gesture works along with language, providing an additional representational format that can promote learning.

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