LINGUO-COGNITIVE FEATURES OF PUZZLES IN ENGLISH AND UZBEK LANGUAGES

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Abstract .For decades, researchers have debated and investigated the relationship between language and cognitive development, especially in infancy and early childhood. Modular perspectives posit that language development is controlled by specialized mechanisms, much like the olfactory system evolved to detect, learn, and process airborne particles. In this perspective, language learning might be quite independent of other cognitive abilities. By contrast, constructivist and biologically based perspectives tend to emphasize the progressive, experience-dependent emergence of complex skills, including language. These theories postulate that domain-general cognitive capacities and processes are recruited to develop language. The frameworks make distinct predictions: Modular theories expect language-specific learning processes and products.

Key words*:* linguocognitive, puzzle, riddle, jigsaw, comprehension, intellectual potential, mental ability, metaphor.

Annotasiya: O'nlab yillar davomida tadqiqotchilar til va kognitiv rivojlanish o'rtasidagi bog'liqlikni, ayniqsa go'daklik va erta bolalik davrida muhokama qildilar va tekshirdilar. Modulli nuqtai nazarga ko'ra, til rivojlanishi havodagi zarralarni aniqlash, o'rganish va qayta ishlash uchun rivojlangan hid bilish tizimi kabi maxsus mexanizmlar tomonidan boshqariladi. Shu nuqtai nazardan, til o'rganish boshqa kognitiv qobiliyatlardan mutlaqo mustaqil bo'lishi mumkin. Bundan farqli o'laroq, konstruktivistik va biologik nuqtai nazarlar murakkab ko'nikmalar, shu jumladan tilning progressiv, tajribaga bog'liq paydo bo'lishini ta'kidlaydi. Ushbu nazariyalar tilni rivojlantirish uchun umumiy bilim qobiliyatlari va jarayonlari jalb qilinganligini ta'kidlaydi. Ramkalar aniq bashorat qiladi: Modulli nazariyalar tilga xos o'rganish jarayonlari va mahsulotlarini kutadi.

Kalit so'zlar: linvokognitiv xususiyat,puzzle,lug'at, interfaol texnologiyalar, nazariya, metodik tayyorgarlik, leksik kompetentsiya, faraz, o'quv dasturi, ilmiy-nazariy g'oyalar, lingvopsixologik xususiyatlar.

Constructivist and neuro-constructivist approaches expect language- learning processes and products to show deep commonalities with nonlinguistic learning. A profound challenge in adjudicating between these views is that many capacities and skills change with age: Perceptual sensitivities change with practice, everyday experiences provide a ballooning data set for inductive inference and pattern detection, and incremental practice leads to improvement of all sorts of actions and cognitive skills. Another challenge is that methods and instruments for measuring linguistic and nonlinguistic cognitive skills are completely different between infancy and early childhood and also between early childhood and late childhood and adolescence. Thus specialization. However, in these cases it is possible that, even if one cannot readily identify nonlinguistic analogues of the constraint, children could equally ell learn invented, logically equivalent, nonlinguistic patterns. This possibility is seldom tested, however. Modeling studies have, in recent decades, provided increasing evidence that linguistic patterns and principles are learnable by cognitive agents that are imbued with only general learning mechanisms. Numerous studies have investigated whether simple artificial systems, ranging from simple neural networks to embodied robots, can acquire simulated, simplified systems of quasi-linguistic symbols. The learning mechanisms in these studies represent a variety of approaches including machine learning, simple Hebbian learning, recurrent networks, genetic algorithms, Bayesian and other probability-based algorithms, reinforcement learning models, Hidden Markov models, and others. These studies have contributed to a growing consensus that biologically inspired learning systems can, from limited experience, induce the abstract patterns in language.[6]

Such work challenges the traditional hegemony of linguistic modularity. However, any simulation must be evaluated in terms of the assumptions manifested in the model, the structure of the quasi-linguistic input corpus, and the biological and psychological plausibility of the learning process. Often, these factors limit the conclusions that can be drawn from the results. Nevertheless, some studies have provided provocative proof of possibility—that is, results indicating that a simple, unspecialized, unsupervised system can readily acquire patterns once believed by linguists to be unbearable without specialized linguistic constraints.Neural Specialization for Language Learning? There are expanding efforts to explore how neural resources might become specialized or dedicated to language processing.

For example,was initially suggested from electroencephalographic (EEG) evidence that 1-year-olds'brains had not yet undergone cortical regionalization (i.e., specialization of certain areas) for word knowledge. Most adults show reliable, maximal processing of words by parts of the left inferior frontal and superior anterior temporal cortex. Early studies of 1-year-olds suggested that hearing words activated widely distributed, bilateral areas of cortex. However, methods at that time did not permit good localization of cortical activity sources from EEG data. A more recent study using magneto encephalography (MEG) revealed left front-temporal cortical specialization for word processing as early as 14 months. This suggests that whatever processes because cortical specialization for word processing begins by an infant's first birthday. This does not explain how regional specialization emerges. However, the cortex in this region is not congenitally (i.e., at birth) specialized for word learning: Infants who lose this region of cortex to perinatal (i.e., around birth) stroke can eventually develop largely normal language, suggesting that other cortical tissue is plastic enough to take over word-learning and word- retrieval functions.[7]Adults show cortical specialization for a broader range of language. For example, left inferior parietal cortex plays an important role in generating semantically appropriate speech, and some right-hemisphere regions are important for processing pragmatic information. However, perinatal stroke studies also show that these language abilities can become functionally allocated to atypical cortical areas. Thus, there is some pluri-potentiality of cortical tissue for language functions, suggesting that developmental learning processes, not a priori properties of the infant brain, yield cerebral organization of language faculties. It has been hypothesized that human audition is evolutionarily adapted for language. In fact, neonates discriminate changes in human speech sounds. However, neonates also discriminate differences in the pitch, amplitude, and timing of no speech sounds. These acoustic features are important in phoneme discrimination. It is unclear whether infants are more sensitive to these features in speech sounds than non-speech sounds. It is true that young infants prefer listening to human speech than to non-speech sounds matched for some basic acoustic properties. The basis of this preference is unknown, but it might rest partly on prenatal exposure to maternal speech, despite the acoustic filtering of speech through the uterine aqueous environment. Notably, prenatal auditory learning is not limited to speech; there is some limited evidence that neonates respond differently to non-vocal music heard repeatedly during pregnancy than to novel music. Thus, there is no compelling evidence that infants' earliest auditory responses are specifically adapted to speech stimuli. Early Learning of Speech Patterns By midway through the first year, infants are sensitive to a variety of native-language speech patterns. These include native phonemes (consonants and vowels), sequences of phonemes, patterns of word stress, and prosodic markers of speech boundaries. For example, Thai-learning infants divide bilabial stop consonants into three phoneme categories based on continuous differences in voice onset time (VOT), that is, the time from vocal fold vibration to exhalation). English learning infants, by contrast, divide the VOT continuum into two categories (/b/ and /p/). Also, German-learning infants expect words to have a primary (i.e., trochaic) stress pattern rather than a secondary (iambic) pattern; French-learning infants do not have the same expectation. Infants learn many such experience-driven distinctions within the first year. The mechanisms by which infants learn these distinctions are not well understood.

However, their role in language processing, for example, understanding and producing discourse, was until recently unexplored. Although several findings suggest relations between executive functions and developing language skills, the data are not cohesive.[11]

A pervasive but seldom acknowledged problem is that most executive function tasks recruit language skills. Those skills include word and sentence comprehension, pragmatics, and discourse processing, and sometimes knowledge of written symbols. Few studies have adequately controlled for the language-processing demands of executive function tasks. Another problem is that the executive functions themselves are poorly defined or measured in unspecified ways across tests. Despite these problems, there are suggestive lines of evidence. One suggests that children's flexibility in switching between tasks depends on their ability to represent and update changing task cues or instructions. In task- switching tests, participants must attend to and understand alternating cues or commands to switch from one response criterion to another opposing criterion (e.g., from sorting cards based on shape to sorting based on colors when these properties call for opposing responses). Some researchers have suggested that young children's difficulties with task-switching tasks (e.g., switching errors) are due to their difficulty inhibiting prior responses.

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