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Anti-Anti-Cartesianism: A reply to Shanker

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There have been many criticisms of “nativism” in “Cartesian linguistics,” attacking positions that neither Chomsky nor any well-known generative grammarian has ever thought to defend. Shanker’s polemic is no exception. It involves two spurious claims: (1) Cartesian linguistics (hypothesizing universal, grammar-specific principles that structure any language acquired through usual interaction with the learner’s community) vitiates understanding language structure and use; (2) nativism permits linguistic anthropology only to “validate” and “apply” (wrong-headed) generative principles. Briefly, Chomsky’s (2000) outlines a language system, LS, of the human brain. LS reflexively discriminates and categorizes parts of the flux of human experience as “language,” and develops complex abilities to infer and interpret this highly structured, and structurally peculiar, type of human production. There is nothing intrinsically different about LS – concerning innateness, evolution or universality – than the visual system (VS), immune system (IS), respiratory system (RS), or any other complex biological system. Much polemic is driven by distaste for “innateness,” “genes,” and “evolution.” Historical and ideological reasons explain this aversion - some well-justified. None bear on universal grammar.

Regarding (1), nothing of substance in Shanker’s claim pertains to the truth or falsehood of empirical proposals about specific language structures, such as word-order (each language has specified linear order linking arguments to predicates) or thematic-role (“theta- roles” are assigned to noun-phrase positions, such as subject-agent role and object-patient role in transitive sentences). Without word-order and theta-role there is no apparent way of distinguishing “X hits Y” from “Y hits X,” or “Hits YX” from “Hits XY” (Baker 1988). Chimpanzees (or dogs) may share many intellectual faculties with humans, including abilities for propositional attitudes (beliefs, desires) or symbolizing referents with arbitrary signs (Shanker’s language “Rubicon”). Without syntactic principles, however, they cannot disambiguate from signs alone the different references that different possible orders of propositions may describe. The only example hinting

at rudimentary representational order in apes comes from Kanzi, a bonobo (Savage-Rumbaugh et al. 1998). Kanzi, though, evinces no consistent subject-predicate structure. His action-action combinations (“Chase Bite”) employ two “predicates” and no subject. No human language allows sentences that have no arguments and so cannot express a proposition. More significantly, neither Kanzi nor any other nonhuman creature recursively embeds structured strings within strings (clauses, sentences), allowing almost limitless expression and production of information.

Logically, if a mind can take fragmentary instances of experience (relative to the richness of the whole data set) and spontaneously predict (generalize) the extension of those scattered cases to an indefinitely large class of complexly related cases, then the inferential structure responsible for prediction cannot derive from the experience. Acquiring language structure via “social interaction” is no more plausible than learning by “osmosis.” As Hume noted, structure must be prior to experience, just like the cranes and architects used in building must exist prior to any initial construction. If humans are organisms whose species attributes emerged through the same evolutionary processes governing all other species, there is no alternative to a-priori mental structures being evolved biological structures (as adaptations or by-products of adaptations).

LS is no more (or less) “autonomous” from the ambient social environment, or other mental systems, than VS is detachable from ambient light and object-patterning or other physical systems (including, in humans, linguistic and other cognitive systems of meaning, Marr 1982). LS and VS neither exist nor develop in isolation, but only as subsystems of even more intricate structures (Hubel 1988). Cartesian claims of biological “autonomy” for LS or VS refer only to a specifiable level of systemic functioning within a system hierarchy.

Developmental and cognitive psychologists have identified several structures in human cognitive systems relating to the interface between LS and these other systems (Spelke et al. 1995). One is “the whole-object constraint” (Carey 1985). Children, of whatever culture or

language, assume by default that nouns apply to whole objects (a rabbit) and not to object parts (a piece of leg, a patch of fur, disparate patches of fur and leg), or an object-and-its-environment. Such “innate bias” helps resolve indeterminacy in translation. Consider an anthropologist who visits an exotic tribe and sees a tribe member pointing to something that the anthropologist identifies as a running deer. The anthropologist is fairly safe assuming that the informant also thought of pointing to a running deer (and not a moving deer part, a shifting pattern of fur-and-grass, etc.), even if the informant also believes the deer is someone’s ancestor. If this weren’t the case – if radical indeterminacy were omnipresent - anthropology would be impossible.

Shanker notes that before learning to talk, children engage in joint attention, contingently interact with others to achieve goals, and so forth. This supposedly undermines the Cartesian model. Yet, much work in this area – called the child’s “theory of mind” or “folkpsychology”- focuses on nativist issues: How do children reliably infer rich mental structures about other minds from a few gestures and without mastery of language? How do children infer that people’s mental structures (intentions) cause others to act a distance (without physical contact)? The emerging consensus is that children are biologically endowed with a “theory of mind” (ToM) that matures with predictable cross-cultural regularity over the first three years of life (Avis & Harris 1991, Leslie 1994, Baron-Cohen 1995). Some features of developing ToM interface with maturing features of developing LS in systematic ways now under experimental study.

Nothing in Shanker’s comparison of Navajo and Anglo-American naming relates to, much less undermines, generativist claims. Many generative grammarians accept proper names as “rigid designators” that refer to something outside the mind and whose true meaning may never be known by any mind (e.g., the true reference of “Homer” or “Los Angeles,” Longobardi 1994). Granted, proper names customarily have wider connotations for Navajo than Americans. But what has this to do with LS or English? Navajo who speak English presumably use Navajo

proper names in English as in Navajo. English speakers may use proper names as Navajo allegedly do: to be a “Roosevelt,” “Kennedy” or “Windsor” also implies social obligation.

Similar considerations apply to Shanker’s discussion of Brown and Levinson. Some Australian aboriginal languages make little use of prepositions that express relative spatial position (“to the left of,” “in front of”), relying instead on terms for absolute positioning (cardinal points). Native speakers have trouble learning English prepositions in Australian schools. This may owe more to difficulties in interfacing with the cognitive system for relative spatial positioning than with language structure as such. Thus, Midwestern farmers more likely use absolute positioning than New York City folk in giving directions or locating places, and New Yorkers probably have a harder time understanding “to the southwest” than “to the left of.”

Regarding (2), no evidence supports Shanker’s claim. Generativists show that culture-specific choice of grammar can have wide-ranging implications for interfacing with other cognitive systems that affect “world views” (in the sense of systematic variations on universal mental structures). Thus, in Warlpiri, an Australian language, syntactic structure permits incorporation of indefinitely many subordinate propositions in a single clause (Hale 1986). So, Warlpiri can directly convey causal coincidence and complementarity in time, space or circumstance (Nantuwu-ka-parnka-mi-mata = “horse-run-tired,” meaning “the horse is tired while it is running”). Themes of complementarity and coincidence pervade kinship and myth.

Biologists believe all life consists of universal, highly structured codings of biological information (DNA, proteins, genes, cells). Still, biologists go on to explore diversity at many different levels (bacteria, species, individuals, phyla). Similarly, linguistic anthropology can use generative grammar to better comprehend the diversity of languages and the cultural worlds they describe. This includes the very issues about proper names that Shanker highlights (Lois 1998).

References

- Avis, J. & Harris, P. (1991) Belief-desire reasoning among Baka children: Evidence for a universal conception of mind. Child Development 62:460-467.
- Baker, M. (1988) Incorporation. Chicago: The University of Chicago Press.
- Baron-Cohen, S. (1995) Mindblindness. Cambridge, MA: The MIT Press.
- Carey, S. (1985) Constraints on semantic development. In J. Mehler & R. Fox (eds.), Neonate cognition. Hillsdale, NJ: Erlbaum.
- Chomsky, N. (2000) Minimalist inquiries: The framework. In R. Martin, D. Michaels & J. Uriagereka (eds.), Step by step. Cambridge, MA: The MIT Press.
- Hale, K. (1986) Note on world view and semantic categories: Some Warlpiri examples. In P. Muysken & H. van Riemsdijk (eds.), Studies in generative grammar, 25. Dordrecht: Foris.
- Hubel, D. (1988) Eye, brain, and vision. New York: Scientific American.
- Leslie, A. (1994) ToMM, ToBy, and agency. In L. Hirschfeld & S. Gelman (eds.), Mapping the mind: Domain-specificity in cognition and culture. New York: Cambridge University Press.
- Longobardi, G. (1994) Reference and proper names. Linguistic Inquiry 25:609-665.
- Lois, X. (1998) Gender markers as "rigid determiners" of the Itzaj Maya world. International Journal of American Linguistics 64:224-282.
- Marr, D. (1982) Vision. New York: W.H. Freeman.
- Savage-Rumbaugh, S., Shanker, S. & Taylor, T. (1998) Ape, language and the human mind. New York: Oxford University Press.
- Spelke, E., Phillips, A. & Woodward, A. (1995) Infants' knowledge of object motion and human action. In D. Sperber, D. Premack & A. Premack (eds.), Causal cognition: A multidisciplinary debate. Oxford: Clarendon Press.