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What's innate about human language? An epigenetic perspective.

Despite its persistence, the nature/nurture debate regarding human language poses the question of what aspects of the human language faculty, in its broad sense, in a most unhelpful manner. For at least twenty years it has been clear to biologists that all complex aspects of living organisms develop epigenetically, via a cyclical process with gene-environment interactions occurring at each phase of the cycle. While this process is extremely complex in language, the development of the human language faculty is no different in its schematic outline from the development of the hands or the heart. Two crucial realizations are at heart of this claim: 1. That "the environment" must be understood to involve many events and interactions internal to an individual's body but external to the genome (that is to the DNA in cell nuclei), and 2. That our intuitive notion of causality, derived from the simple world of physical causes and effects, is inapplicable to the cyclical causal systems that typify biology (either evolution or ontogeny). From this perspective, there are significant truths to be found in both nativist and empiricist (or "constructivist") writings on the biology and evolution of language. The only fundamental flaw is seeing them as mutually exclusive alternative viewpoints. I will argue that Chomsky's notion of an innately determined "Universal Grammar", despite a certain terminological infelicity, can be re-construed from an epigenetic perspective in terms of perceptual proclivities along with biases and constraints on language acquisition. Such a neo-nativist model of linguistic innateness is fully compatible both with a modern biological understanding of how genes and environment interact in development, as well as the evolutionary perspective of evolutionary developmental biology, which sees deep commonalities between humans and other animals in the genetic basis of development.