

Cultural Acquisition, Evolution, and Ethology:  
The Perceptual Control Hypothesis

**DRAFT** - 04/07 - Ted Cloak

Cultural features, like other behavioral features of living things, evolve by means of Natural Selection; they therefore require a unit of selection analogous to the gene. Perceptual Control Theory (PCT)<sup>1</sup> explicates the nature of that unit.

Perceiving<sup>2</sup> another human's actions and action-products, a human observer parses, processes, and stores his perceptions as *reference standards* for neural control systems directing his own subsequent actions.<sup>3</sup>

That is how cultural acquisition works: Several hundred thousand years of genetic/cultural co-evolution have so empowered and refined our mechanisms for perceiving, parsing, processing, and storing, that an observer's stored perceptions/reference standards may approach functional identity to the reference standards used in directing the actions he observed.<sup>4</sup>

Reference standards so acquired are *cultural instructions*,<sup>5</sup> or *memes* in the strict sense of the term<sup>6</sup> -- the replicating units of culture.

The study of cultural behavior and evolution at the memetic level is called Cultural Ethology.<sup>7</sup>

---

<sup>1</sup> Powers, William T. 1973. Behavior: the Control of Perception

<sup>2</sup> in the broad sense, to include imagining perceptions by interpreting uttered or written statements

<sup>3</sup> In PCT terms, his control systems will continually adjust his subsequent actions to make his then-current perceptions more closely approximate his now-stored perceptions/reference standards. Behavior, in the final analysis, is the control of perception.

<sup>4</sup> The behavioral control systems themselves have been evolving for several hundred **million** years, hitherto relying on reference standards provided by genetic evolution and, more recently, by trial-and-error learning as well. A simple culturally mediated action (e.g., waving goodbye, or driving a nail) is the combined product of dozens of control systems, only a few of them cultural, hierarchically organized and acquired at different points in ontogeny.

<sup>5</sup> Cloak, F.T. 1968, 1975. Is a cultural ethology possible?

<sup>6</sup> Dawkins, Richard. 1976. The Selfish Gene  
1982. The Extended Phenotype, p. 109

<sup>7</sup> Cloak, F.T. 1968, 1975. Is a cultural ethology possible?  
1973, 2007. Cultural ethology experiment #1