

# *The Things We Do*

*Using the Lessons of Bernard and Darwin to Understand the What, How, and Why of Our Behavior*

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*By Gary Cziko*

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## *Primer on universal selectionism and perceptual control theory*

By Tim Tyler on June 8, 2013

Cziko wrote this book in the year 2000 — after writing *Without Miracles*.

It contains a history of evolution, a history of cybernetics and perceptual control theory, and section on applying these ideas to human behaviour.

Darwin will be familiar to most, but not everyone will have heard of Claude Bernard. Bernard was a french physiologist who lived at about the same time as Darwin. He studied how organisms act to control their internal environment. Cziko traces ideas about goal-directed systems through Bernard and the pioneers of cybernetics to William Powers, and perceptual control theory.

The main point seems to be that the standard, input/output model of information flow through organisms — which has perceptions leading to processing and processing leading to action — is a “linear” model which misses out something very important — namely the idea of control of perception. Feedback via the environment from action to perception is actually very important. By contrast, in perceptual control theory, organisms act so as to control their own perceptions.

The book is a good one. Most of the material about Darwinism and universal selectionism is expressed in more detail in *Without Miracles*. However, this book has more historical perspective, more philosophy, and a lot more cybernetics and perceptual control theory.

The book is a little bit on the dry and boring side. However, one section that was more interesting than most was a chapter where Cziko shows how other thinkers stack up in their understanding of the subject. He rates Chomsky, Piaget, Skinner, Pinker and Dennett on their understanding of the topics in his book, giving them marks out of three. To summarize, he gives Chomsky zero, Piaget and Skinner, a half point, Pinker gets one full point and Dennett gets two and a half points. I would have given Skinner and probably Dennett more points, but otherwise, this seems about right. While this chapter seems a bit like Cziko showing off, he has a reasonable point — which is that this important material is much neglected by other thinkers.

While it's hard to argue with the significance of Darwin, Cziko makes a weaker case for the significance of Bernard. I didn't think the ideas from perceptual control theory, cybernetics and feedback were in as opposition to the conventional perception -> processing -> action models as Cziko implies. However, even if this material is less revolutionary than Cziko suggests, these are still interesting and important subject areas.

While this is a nice book, those interested in Cziko's ideas should definitely read *Without Miracles* first.