

## Human, All Too Human

*The Nature of Human Nature*, by Carin Bondar.  
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Adam M. Goldstein

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The basic premise of Dr. Carin Bondar's *Nature of Human Nature* is that human behavior and intentions and the adaptive strategies of ants, birds, spiders, non-human primates, and fish can illuminate one another. After a brief introduction explaining natural selection and introducing the question, Are humans a part of nature?, Dr. Bondar puts this premise to work in a series of vignettes that are divided into two main parts, "survive" and "reproduce." These are further subdivided into chapters, each of which focuses on a different aspect of survival or reproduction. Each chapter consists of two- to three-page unnumbered sections, each of which centers upon a different animal behavior. Dr. Bondar focuses on kinds of behaviors that might seem to us to be especially characteristic of our species, or perhaps unique to us.

For example, surely there cannot be, in the animal world, behavior analogous to the human institution of dietary supplements and professional advice from dietitians and scientists? Dr. Bondar addresses this issue in "oxidatively stressed" (p. 50). No doubt human abilities such as reasoning and careful observation are required to discover that certain fruits and vegetables are high in antioxidants, believed to fight cancer and even aging itself. One important point that a dietitian would want to make to a patient is that fruits and vegetables high in antioxidants are dark in color, purples and dark blues having the highest levels. Not only can scientists discover what nutrients are good for us but they also can help guide us to those foods with that simple rule.

As it happens, European blackcaps have an instinct for identifying antioxidant-rich food sources by color. As Dr. Bondar explains, these birds eat over 60 kinds of fruit. Experimenters showed that there is a strong relationship between the color of the fruits selected by the birds and their antioxidant content. Apparently, the birds make sure to include enough antioxidants by making sure to eat enough fruits of the right colors.

In the "Bachelor Pad" chapter of the "Reproduction" section (p. 115), Dr. Bondar describes competition for mates among male bowerbirds. The analogy is with the human institution, at least as found in popular culture, of the "bachelor pad." "Females have been shown to respond to the design of the bower and the number of ornaments that adorn it" (p. 116). They do not, however, respond to "exceedingly rare or difficult-to-obtain objects" (p. 116). The bowerbird "bachelor pad" is constructed of "objects such as snail shells, berries, glass, and white stones" in addition to "human discarded objects like keys, kitchen utensils, and metal tags" (p. 116). Males steal one another's nest-building materials in order to increase the attractiveness of their nests.

In human society, the inhabitant of a "bachelor pad" is typically understood to be a Lothario. The same is apparently true among bowerbirds. Because their mating system is a "non-resource-based polygyny" (p. 116), the males contribute only their genes to the next generation, i.e., they are not involved in parental care in any way. The best strategy for the male, then, is to mate with as many females as possible. This is, of course, just what females, both human and bowerbird, would rather not have happen. A female bowerbird is best served if she mates with the most fit male and that male mates with no other females. In this way,

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A. M. Goldstein (✉)  
Department of Philosophy, Iona College, 715 North  
Avenue, New Rochelle, NY 10801, USA  
e-mail: z\_californianus@shiftingbalance.org

her genes will have a better chance of making the most favorable combination with a mate's. The human female also wants the "fittest" male, although "fitness" is not construed as most biologically fit, but rather, in terms of the range of other qualities she desires in a romantic partner.

Learning that a complex set of behaviors integrated into human culture is carried out as a matter of fact by birds is humbling. The tables are turned. "Oxidatively stressed" begins with a description of a human behavior that many people have participated in. The idea of a bird or any other animal manufacturing dietary supplements or isolating a particular nutrient is surely absurd: Human beings have used reason and technology to attain the truth in this matter, which is transmitted via communications networks of which we can be rightly proud. As it happens, all this is quite literally for the birds. Stupidly, as it were, without any kind of reasoning at all, the blackcaps live simple lives eating fruit, while it seems that the pace and complexity of human life is increasing at an alarming rate.

Dr. Bondar deals the final blow harshly. Human beings have indeed learned an enormous amount about nature and ourselves in the interest of living long and healthy lives. Nevertheless, almost everyone, including people who are educated and well-off, ignores what we have learned. Dietary advice from reliable sources is easily available to anyone with an Internet connection. "I think you know where I am heading with this," (p. 51) Dr. Bondar intones. We do not "use our physiological and cognitive abilities to select the most antioxidant-rich foods available" (p. 51).

This strategy of personification is enormously powerful. A human capacity that would seem to require human reason or culture is identified; an analogous behavior in the animal world, or perhaps the very same kind of behavior, is shown to have been created by natural selection, so that the behavior is carried out instinctively, and it is shown that the animals' ability to perform the behavior is superior and that human beings often use their reason to avoid carrying out the adaptive behavior. The unavoidable conclusion is that our fallibility is one of our most significant characteristics.

I have made a special point of addressing the book's author by her professional title. This is how she identifies herself; on the title page, she is identified as the author by "Dr. Carin Bondar." The title serves to identify her as an authority on the book's topics. Her talent as a scholar is clearly displayed in the notes, 196 of which name her sources, which are drawn from the scientific literature. What might seem to distance the author from her readers, as a physician's title distances him or her from patients, serves rather to intrigue. As

the book moves ahead vignette by vignette, Dr. Bondar occasionally lets slip some insight into her personal life touching on the topic of the vignette. Naturally, the insights she offers in part II, "Reproduction," are especially interesting. Bringing the reader closer, Dr. Bondar tugs the reader gently but firmly through the book. She wears her title so lightly that it becomes one more avenue to explore. Dr. Bondar is like that most sought-after professor, who makes science exciting, or a friend who really does know everything, but has fun all the same.

Dr. Bondar holds a Ph.D. in Ecology from the University of British Columbia and continues her research into crayfish of the genus *Pacifastacus* and stream ecosystems. *The Nature of Human Nature* represents an extension of her work in science education and outreach, which she primarily conducts online, based from her web site at <http://carinbondar.com>. There, readers can find frequent and regular reviews and explanations of recent scientific publications and a series of short video segments reporting on recent research. Topics center around her interests in marine biology and conservation. *The Nature of Human Nature*, like Dr. Bondar's other work, is an online endeavor. The book itself is a printed volume, but it can only be obtained online at her web site, at the online bookseller and publisher Lulu (<http://www.lulu.com>), or at other online booksellers such as Amazon.com. Lulu offers digital copies of the book for \$5.00, in a variety of formats. Publishing in this online format, the author is free to express him- or herself without concern for the book's commercial viability, as would be the case with a traditional publisher, whose decisions are informed in a large part by whether a book will be a bestseller. By choosing to publish online, Dr. Bondar joins a small group of authors willing to trust that word of mouth, personal appeals online, and the quality of their work will compensate for the publicity that a traditional publisher would offer.

*The Nature of Human Nature* is suitable for a wide range of audiences. The brief vignettes are the right size for reading on a commute, and the book is fun and amusing. Absolutely no previous interest or experience in science is required. Younger students might not recognize all of the cultural peculiarities that are the topic of each vignette. The same is true of an impoverished or non-Western reader. Some of the vignettes concern luxuries or foibles of upper-class Americans or Canadians. High school and college teachers will easily find ways to use the book to their advantage. It is essentially a database, in book form, of examples of natural selection, explained in astonishingly clear language and an engaging voice.