

Purity and Prejudice: Deluding Ourselves About Biodiversity Conservation

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ABSTRACT

Tropical conservationists can benefit from understanding human thought processes. We are often less rational than we might believe. Our judgmental biases may sometimes encourage us to overlook or act against major conservation opportunities. Better appreciation of the tricks of the human mind might make us more open-minded, humble, and ready to appreciate different viewpoints. We propose one inherent bias that we believe predisposes conservationists to neglect the value of modified habitats for biodiversity conservation. We call it the 'tainted-nature delusion'. Recognizing such biases can increase our effectiveness in recognizing and achieving viable conservation outcomes.

Key words: cognitive bias; conservation; psychology; tainted-nature delusion; tropics.

OUR MOTIVATION TO PROTECT BIODIVERSITY RESULTS FROM OUR PERSONAL VALUES. Understanding how human perceptions and decision-making works can tell us more about our values and judgments. Conservation is about our wishes: how we want the world to be. This vision, and how we might achieve it, is informed by knowledge and thus by science, but science is not our motivation. While science and motivations are necessarily intertwined they should not be confused.

'Biodiversity' is a modern concept which draws on older notions of appreciating and venerating nature. Most of humanity seems to have some affinity for biodiversity and its conservation, but different people interpret nature in various ways with different and often contradictory conservation implications (*e.g.*, Buijs 2009).

Our personal appreciation of biodiversity comes from childhood walks on Ireland's rugged coasts and hills and in German forests, visits to the zoo, books, and the wonders of the world seen through binoculars and magnifying glasses. An academic interest in biology resulted and from there a quick transition into conservation and the rational thinking of applied conservation science. The why and how of conservation seemed to merge seamlessly.

We assess our world through a mixture of established technical knowledge, assumptions, and theory as well as a significant element of interpretations, intuitions, and preferences. We often fail to differentiate these. One consequence is that conservationists can be overly confident that we are objective and we know best. Often we are not and we do not.

We regularly see a mix-up in the mode of reasoning in conservation, *i.e.*, personal motives vs. scientific knowledge. For example, some studies indicate that orangutans require primary rain forests and that forest disturbance is always detrimental to the species. Other studies, in contrast, show that orangutans can tolerate substantial habitat modification (for an overview see Husson *et al.* 2009). In our experience, the former studies find more support among conservationists. Even though 75 percent of all orangutans live in timber concessions (Wich *et al.* 2008) there are no conservation programs in active concessions. One explanation is that many conservationists simply cannot bring themselves to accept and engage with such contexts. This impacts more than orangutans, as many species are more disturbance tolerant than is widely assumed (*e.g.*, Meijaard & Sheil 2008b). We suspect that most of us have a tendency to develop our pet ideas based on emotions and intuition and then use our science for support.

If indeed we commonly confuse conservation science and practice with more personal values this likely reduces our conservation effectiveness. As scientists we have to be aware when we are thinking with our head and when with our heart. And we need to understand the tricks our minds play on us.

ALL IN OUR HEADS

There are many different ways to weigh and value biodiversity. Academic conservationists often favor utilitarian arguments in which conservation is evaluated as a rational economic activity. Economics also appears to define how our species makes the world the way it is. We ourselves have often wished we knew more economics. But we are neither sure that conservation *is* necessarily a

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logical economic activity nor that human nature is as rational as economic analyses require.

For now, let us forget economics. Psychology may better illuminate our understanding of what our species wants and does. The insights are often surprising. For example, it now appears clear that our innate sense of right and wrong can make our moral judgments consistently illogical (Nichols & Mallon 2006).

The psychological sciences offer many lessons for conservation interests. For example, our need to form groups as ‘us vs. them’ has much to say about the barriers we erect around our expertise and disciplines. It has helped to clarify the stimuli which keep people interested in the environment, and its protection. It has also helped guide decision-making and communication strategies (*e.g.*, Peterson 2010). Johnson and Levin (2009) summarize a diverse set of psychological predispositions and biases that encourage human inaction in the context of environmental threats. There are implications for education too. Humans have an innate capacity to value biodiversity but this capacity must be nurtured. This predisposition seems less well exploited by conservation interests than for commercial crazes like Pokémon (Balmford *et al.* 2002). So what then are the implications of psychology for conservation researchers like ourselves?

DELUSIONS AND DICHOTOMY

We cannot perceive our own prejudices and are blind to many of our failings (Pronin 2008). The scale and extent of human self-deception and over-confidence is relatively well established (*e.g.*, Ehrlinger *et al.* 2008) and we are all human. In conservation where power imbalances are often considerable, and views can vary widely, our over-confidence and blind-spots have implications. Here we propose a hypothesis that may hinder conservation professionals from engaging with some real conservation opportunities.

Human minds have evolved to understand a complex world quickly enough to allow survival. One consequence is our tendency to categorize and weigh concepts in terms of simple dichotomies (*e.g.*, safe–unsafe). These rapid and innate judgments likely helped survival in our evolutionary past where selection favored the least costly errors (Haselton & Nettle 2006). This led to avoidance of tainted water and foodstuffs, and other potential threats, as part of the ‘behavioral immune system’ (Park & Schaller 2009). These mental mechanisms remain powerful influences in our personal moral sentiments and values (Moll & Schulkin 2009). We believe that these value laden instincts underlie many cultural taboos and also spill into many aspects of everyday thinking: true–false, good–bad, whole–incomplete, pristine–modified, natural–unnatural, pure–impure, even perhaps theoretical–applied (think ‘pure–impure’) . . . the list could be very long. Our hypothesis is that these all-or-nothing judgmental instincts permeate much of our conservation thinking, generating a ‘tainted-nature’ delusion: the view that nature is only good enough to conserve when it satisfies our mental ideals. This is not as unlikely as it may initially appear.

Disgust, the emotion associated with contamination, influences many different behaviors in many different contexts and contamination and morality involve shared mental processes and are

known to interfere with each other in odd but empirically demonstrable ways (Chapman *et al.* 2009). For example, physical cleanliness can influence the severity of unrelated moral judgments (Schnall *et al.* 2008). We suggest that instinctive assessments of natural purity involve the same types of mental processes and snap judgments.

In Western societies we cherish our vision of unblemished nature. This is oddly absolute: nature is either pure or it is tainted. This seems to apply particularly to nature that is far away. From the views of European conservationists a landscape in the Scottish Highlands with forest, heather and sheep feels ‘natural’ and is turned into Europe’s largest national park. One on Borneo, Brazil, or the Congo should preferably be protected from people and their economic activities. This same instinct for purity explains why some of us feel revulsion to genetically engineered organisms, or planted forests in the tropics. Many conservation judgments are similarly affected. While every corner of the Earth is marked by humans to varying degrees, we tend to see natural (good) vs. unnatural (bad) formations. The dividing-line and associated value-judgments exist only in our minds. When next confronted by compromises between the real and ideal world we should take a refreshing shower to make our thought process clearer. It might help.

The tainted-nature delusion leads to judgments that apply a different standard near to home from those implemented further away. This can appear illogical, hypocritical, and imperialistic. Failing to accept the reality of how people interact with the land and nature results in missed opportunities to engage and collaborate. It also makes us less willing to view local people as potential conservation allies. Rather it creates conflict and also means that conservationists are often less able to see and develop conservation opportunities in modified habitats—a subject where *Biotropica* has made significant contributions (*e.g.*, Chazdon *et al.* 2009, Lugo 2009).

CONCLUSION

Tropical conservationists and researchers can gain from an appreciation of human thought processes and judgments. Evolutionary psychology may even be able to put the biology back into conservation biology. Our tainted-nature hypothesis requires evaluation but some implications are clear in any case.

There is no shame in acknowledging that our conservation choices reflect our human nature. But we need to be conscious whose value judgments are involved in what. Some think subjectivity in conservation assessments is a problem. For example, Stokes (2007) says ‘conservationists must be vigilant to the potential for esthetic responses to influence conservation efforts’. But what system should we accept? Society must somehow judge.

Good messaging requires balancing a need for brief and simple communication with a need to go beyond over-simplified dichotomies. Thinking in shades of gray and willingness to accept compromises are the basis of effective and sustainable conservation. We should not dismiss the value of modified ecosystems simply because we do not like them.

We need to appreciate broader views on conservation. Hammering our western views onto tropical countries often does not

convince but antagonizes (Meijaard & Sheil 2008a). Just as political scientists have no legitimate claim to rule the world, conservation scientists should not expect to decide the conservation agenda or be exempt from democratic principles. Legitimacy requires appreciation not only of biological diversity but of motivational diversity. Listening and engaging are essential in effective conservation and we should be willing to accept priorities that do not favor our own personal views and beliefs over others. Understanding why we want tropical countries to save their forests in some certain condition, and understanding why the inhabitants of these countries might choose different outcomes should at least clarify the motivational agendas.

Conservation researchers should engage with society and explain available choices. But we should keep our knowledge distinct from our preferences and prejudices. That is not easy, but we should try.

We should not be arrogant about science. Science is never certain and it cannot judge right from wrong. Scientific data and models remain the best means for improved understanding of how the world works, communicating ideas, informing options, and challenging nonsense. The science of human motivations could become a key element in developing and studying conservation and its context.

This is a good moment to consider how we can get one species, humans, to agree the 'what and how' of conserving the others. Human nature poses challenges but we believe a deeper understanding also offers opportunities. We must be prepared to question and rethink our role. By recognizing our biases and delusions we may become more humble, more willing to form alliances, less likely to judge opponents as morally inferior, and ultimately better able to recognize and achieve viable conservation outcomes.

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