

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Anthropology Faculty Publications

Anthropology, Department of

---

1985

## Beating a Dead Horse: Reply to Levy's Comments

Alan J. Osborn

University of Nebraska at Omaha, aosborn2@unomaha.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/anthropologyfacpub>

 Part of the [Human Ecology Commons](#), [Indigenous Studies Commons](#), [Other American Studies Commons](#), [Place and Environment Commons](#), and the [Social and Cultural Anthropology Commons](#)

---

Osborn, Alan J., "Beating a Dead Horse: Reply to Levy's Comments" (1985). *Anthropology Faculty Publications*. 91.  
<http://digitalcommons.unl.edu/anthropologyfacpub/91>

This Article is brought to you for free and open access by the Anthropology, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Anthropology Faculty Publications by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Commentaries

## Beating a Dead Horse: Reply to Levy's Comments

Alan J. Osborn

Department of Anthropology, University of Nebraska

Levy's comments (*American Anthropologist* 86: 985-991) concerning my paper "Ecological Aspects of Equestrian Adaptations in Aboriginal North America" (*American Anthropologist* 85: 562-591, 1983) are disillusioning. Levy (1961) has previously discussed the general determinant relationships between winter weather, aridity, and forage conditions and human and horse populations in the 1800s throughout the plains. It is disappointing, therefore, to find that Levy has become so disgruntled with the ecological approach in anthropology in general and with my efforts in particular.

He argues that it is futile for me to develop an ecological explanation of variability in aboriginal horse herd size(s). In addition, he deems my attempts to utilize the ethnohistorical records concerning aboriginal horse use as "not worth the effort." Levy declares that the "technological" horse occupies a "superorganic" niche in western North America and is unaffected by winter climate and forage conditions, which serve as the causal variables in my model(s). In effect, Levy seems to be arguing that I am "beating a dead horse"!

Levy states that these conclusions about my paper derive from three procedural errors, which include (1) use of an inappropriate measure of horse wealth, (2) failure to test alternate "hypotheses," and (3) elimination of contradictory evidence through recourse to the use of "idiosyncratic explanations." I

would like to take issue with Levy on all of his assertions. First, I was not attempting to explain differential "horse wealth" among aboriginal North Americans. The primary purpose of my paper is to explain the distribution and abundance of aboriginal horses in the trans-Mississippi west. This is basically an ecological problem (cf. Krebs 1978: 9). Levy, on the other hand, makes use of the measure of "horse wealth" or the ratio of horses to people provided by Ewers (1955) for various tribal groups. Levy then goes on to make inappropriate use of this ratio and my winter severity index in his counteranalyses. Why does Levy assume that human populations should vary as a function of the winter severity index? I developed this index to reflect the winter availability of forage for horses. All of Levy's results, then, will apply only if aboriginal peoples ate horses and/or grass. Given these erroneous results, Levy can claim that my generalizations are fallacious. In turn, he may then argue, for example, that aboriginal groups in the Great Basin and the Columbia Plateau who are the "wealthiest" in horses experience some of the most severe winters.

Second, Levy argues that I have failed to evaluate the causal roles of alternate variables, for example, abuse of pregnant mares and the gelding of stallions, in assessing horse distribution and abundance. If he seriously questions the ethnohistorical data on horse herd size(s), does he believe that

the literature contains more reliable cross-cultural information on aboriginal equine care practices? If they were available, how might these accounts be used to adjust existing horse population figures? I would suggest that such population regulation practices as abuse of mares and gelding of stallions might have varied as a function of winter severity and were ultimately used to lower the labor costs for herds in more harsh environments.

Third, Levy states that "idiosyncratic explanations" are used to account for a number of anomalous ethnographic cases, for example, Nez Perce, Pawnee, and the Plains villagers. Once again Levy misunderstands the manner in which explanatory models are utilized. Explanatory models are oversimplifications of reality; they serve not only to subsume or explain a majority of specific empirical cases but also to isolate anomalies for further investigation. Models, then, cannot include all possible variables nor can they account for all of the observed variation. Ethnohistorical cases are distributed about the regression lines (cf. Osborn 1983, Figures 2-4) as a result of numerous "idiosyncratic explanations" that cause each observation to deviate slightly from the ideal or expected value. Robust explanatory models remain viable despite the existence of specific anomalies. Further investigation of anomalies may bring them into conformity with our expectations (e.g., the Nez Perce and the Pawnee cases) or may require the development of additional, yet related, models.

Levy also takes issue with my analysis of subsistence patterns and horse herd size. Subsistence data were taken directly from Murdock (1967: 46-47), and certain groups were combined and subsistence values were averaged in order to replicate the groups presented by Ewers (1955: Table 3).

Twenty-two of the 32 cases in Table IV (Osborn 1983:582) were used in the subsistence analysis. Groups mentioned by Levy such as the Miami and the Winnebago are not included in Ewers (1955: Table 3) and were not used in my analysis.

Levy counters my generalizations regarding diet, mobility, and horse herd size by pointing out that the Nez Perce possessed very large herds, but they relied little on hunting (particularly bison). Yet, we know that once the horse was available to the Nez Perce they too became highly mobile bison hunters on the northern plains (cf. Chalfant 1974: 96-97).

In addition, Levy believes that domesticated horses are "technological," "super-organic" organisms that exist free from environmental constraints. What must be emphasized, however, is that such buffers from the environment are extremely costly in terms of human labor investment. Given environments in which growing seasons are short and winters are severe, both horse feeding behavior and human labor organization are subject to intense selective pressures, and herd size must be adjusted accordingly.

I might point out that my basic forage availability model is supported by substantial independent studies in ecology and range management. These studies involve both wild and domesticated herbivores and they demonstrate that cold temperatures and snow/ice accumulations limit population size (e.g., United States Senate 1936; Morrison 1957; Pruitt 1959; Moen 1966, 1968, 1976; Vibe 1967; Kelsall and Prescott 1971; Mattfeld 1974; Wilkinson 1974; Dyne, Brockington, Szocs, Duek, Ribic 1980; Mierau and Schmidt 1981; Berger 1983).

In conclusion, Levy's response reiterates those described by Roe (1955: 1), who states that "one is struck by the attitude of virtual

despair that has always prevailed among scholars at the hopelessness of our ever attaining any really precise knowledge of the relationships of the Indian and the horse." Perhaps Levy and I share in the realization that a better understanding of equestrian adaptations cannot be obtained solely through recourse to a finite, biased body of ethnohistorical literature. Yet, I fail to see in what direction Levy is suggesting that we proceed with this anthropological research problem. One of the primary purposes of my paper is to demonstrate that such biases can be recognized and such self-imposed constraints on our understanding of traditional problems can be escaped. Levy appears committed to a strategy of eclecticism (cf. Harris 1979) in which sometimes the environment limits horse herds (e.g., water in arid lands) and sometimes the sociocultural system imposes its own arbitrary constraints (e.g., abuse of mares and gelding of stallions). Anthropologists can no longer ignore the "causal arrows" and determinant relationships that have been demonstrated to exist by other scientific disciplines, in this case, including wildlife ecology, physiological ecology, meteorology, and nutrition.

#### References Cited

- Berger, J. 1983. Ecology and Catastrophic Mortality in Wild Horses: Implications for Interpreting Fossil Assemblages. *Science* 202: 1,403-1,404.
- Chalfant, S. A. 1974. Aboriginal Territory of the Nez Perce Indians. In *Nez Perce Indians*. S. A. Chalfant and V. F. Ray, editors, pages 1-164. New York: Garland.
- Ewers, J. C. 1955. The Horse in Blackfoot Indian Culture: With Comparative Material from Other Western Tribes. Bureau of American Ethnology, *Bulletin*, number 159.
- Harris, M. 1979. *Cultural Materialism: The Struggle for a Science of Culture*. New York: Random House.
- Kelsall, J. P., and W. Prescott. 1971. Moose and Deer Behavior in Snow. Canadian Wildlife Service, *Report Series*, number 15.
- Krebs, C. J. 1978. *Ecology: The Experimental Analysis of Distribution and Abundance*. New York: Harper & Row.
- Levy, J. E. 1961. Ecology of the Southern Plains: The Ecohistory of the Iowa, Comanche, Cheyenne, and Arapaho, 1830-1870. In *Symposium: Patterns of Land Utilization and Other Papers*. Proceedings of the American Ethnological Society. Viola E. Garfield, editor, pages 18-25. Seattle: University of Washington Press.
- Mattfeld, G. J. 1974. The Energetics of Winter Foraging by Whitetailed Deer: A Perspective on Winter Concentration. Thesis (Ph.D.), Syracuse State University, Syracuse, New York.
- Mierau, G. W., and J. L. Schmidt. 1981. The Mule Deer of Mesa Verde National Park. *Mesa Verde Research Series*, paper number 2.
- Moen, A. N. 1966. Factors Affecting the Energy Exchange of White-tailed Deer, Western Minnesota. Thesis (Ph.D.), University of Minnesota, St. Paul, Minnesota.
- Moen, A. N. 1968. Energy Exchange of White-Tailed Deer, Western Minnesota. *Ecology* 49: 676-682.
- Moen, A. N. 1976. Energy Conservation by White-Tailed Deer in the Winter. *Ecology* 57: 192-198.
- Morrison, F. B. 1957. *Feeds and Feeding: A Handbook for the Student and Stockman*. Ithaca, NY: Morrison Publishing.
- Murdock, G. P. 1967. *Ethnographic Atlas*. Pittsburgh: University of Pittsburgh Press.
- Osborn, A. J. 1983. Ecological Aspects of Equestrian Adaptations in Aboriginal North America. *American Anthropologist* 85: 563-591.
- Pruitt, W. O. 1959. Snow as a Factor in the Winter Ecology of Barren-ground Caribou. *Arctic* 12: 158-179.
- Roe, F. G. 1955. *The Indian and the Horse*. Norman: University of Oklahoma Press.
- United States Senate. 1936. The Western Range: Letter from the Secretary of Agriculture. 74th Congress, 2nd Session, *Senate Document*, no. 199. Washington, DC: U.S. Government Printing Office.
- van Dyne, G. M., N. R. Brockington, Z. Szocs, J. Duek, and C. A. Ribic. 1980. Large Herbivore Subsystem. In: *Grasslands, Systems Analysis and Man*. A. I. Brey Meyer and G. M. van Dyne, editors, pages 269-537. Cambridge: Cambridge University Press.
- Vibe, C. 1967. Arctic Animals in Relation to Climatic Fluctuations. *Meddelelser om Gronland* 179(5): 1-227.
- Wilkinson, P. F. 1974. Behavior and Domestication of the Musk Ox. In *The Behavior of Ungulates and Its Relation to Management*, volume 2. V. Geist and F. Walther, editors, pages 909-920. Morjes, Switzerland: International Union for Conservation of Nature and Natural Resources.