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## **Explaining Support for Animal Rights: A Comparison of Two Recent Approaches to Humans, Nonhuman Animals, and Postmodernity**

### ABSTRACT

Questions on "animal rights" in a cross-national survey conducted in 1993 provide an opportunity to compare the applicability to this issue of two theories of the socio-political changes summed up in "postmodernity": Inglehart's (1997) thesis of "postmaterialist values" and Franklin's (1999) synthesis of theories of late modernity. Although Inglehart seems not to have addressed human-nonhuman animal relations, it is reasonable to apply his theory of changing values under conditions of "existential security" to "animal rights." Inglehart's postmaterialism thesis argues that new values emerged within specific groups because of the achievement of material security. Although emphasizing human needs, they shift the agenda toward a series of lifestyle choices that favor extending lifestyle choices, rights, and environmental considerations. Franklin's account of nonhuman animals and modern cultures stresses a generalized "ontological insecurity." Under postmodern conditions, changes to core aspects of social and cultural life are both fragile and fugitive. As neighborhood, community, family, and friendship relations lose their normative and enduring qualities, companion animals increasingly are drawn in to those formerly exclusive human emotional spaces. With a method used by Inglehart and a focus in countries where his postmaterialist effects should be most evident, this study derives and tests different expectations from the theories, then tests them against data from a survey supporting Inglehart's theory. His theory is not well supported. We conclude that its own anthropocentrism limits it and that the allowance for hybrids of nature-culture in Franklin's account offers more promise for a social theory of animal rights in changing times.

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Our first theory is Inglehart's (1977, 1990, 1997) theory of postmaterialism. This has generated some of the most replicated results in social science, particularly in relation to values and to opinions on ecology and the environment. Although we have found no evidence that Inglehart has included human-animal relations in his analyses, other writers have claimed that his approach is applicable to them (Aslin & Norton, 1995; Jordan, 1998). Inglehart is all the more important to introduce to scholars of human-animal relations because it has been suggested that attitudes on the environment and ecology also influence attitudes to animals (Kellert, 1985, 1993).

It is important to stress that Inglehart's theory explicitly is one of human social life; that is, it entails the *a priori* distinction between nature and culture so common in social theory. That provides one point of contrast with our second approach, Franklin's (1999) synthetic account of "animals and modern cultures." Franklin allows for the hybridity of nature-culture, rather than distinguishing between those analytically necessary foci.<sup>2</sup> We develop those differing emphases through contrasting the two writers' use of "security."

After sketching the two theories, we derive hypotheses from Inglehart's and test these against the results from the survey, using a method that Inglehart has used and focusing on countries where his postmaterialist effects should be most evident. Our results, however, do not support Inglehart's theory, an outcome we ascribe to its anthropocentric framing. Although we do not test Franklin's theory in the same terms, we conclude that there is a need for theories of the hybridity of nature-culture, such as Franklin implies, if trends in human-animal relations are to be linked with the broader trends of postmodernization.

## **Postmodernity and Existential Security**

Inglehart's (1977, 1990, 1997) theory of postmaterialism has been one of the most widely used and empirically supported accounts of socio-political changes over the last thirty years, and shifts in human-nonhuman animal relations have been a feature of those changes. Therefore, the theory should apply as much to this issue as to the environmentalism and value-politics where it more usually has been studied. We outline the theory here and show why it is reasonable to extend it to human-nonhuman animal relations.

The theory of postmaterialism is a theory of value-change. Inglehart has argued that the new “value-orientations” among people born after World War II yield better empirical purchase in the study of political movements than the “interests” at issue in the commonly deployed class-based theories. Referring to “quality of life” rather than to the instrumentally economic rationality typical of modernization, “postmaterial values” arose from the conditions that liberated most people in developed countries from spending their lives on basic material demands and that opened new opportunities for self-expression and aesthetic satisfaction. Inglehart derives his case from inter-related arguments on “scarcity” and “socialization.” He holds that those who grew up under relative prosperity show different value-patterns from those who grew up amid scarcity and that the orientation into which any individual is socialized remains relatively stable so long as material conditions do not change radically. His theory, that is, is one of “existential security,” resting on “the fundamental difference between growing up with an awareness that survival is precarious, and growing up with the feeling that one’s survival can be taken for granted” (Inglehart, 1997, p. 31). Although he has found that materialism occasionally may rise in salience, as under the difficult economic conditions in Britain in the 1980s, he argues that a trend exists towards postmaterialism in all countries that are more developed.

Inglehart (1997) has recently linked his postmaterialism to postmodernization, using this contested term in both its historical and conceptual senses. Historically, he argued that while variants of modernization theory - Marxist class-based analyses or Max Weber’s account of rationalization (Schluchter, 1981; Sica, 1988) - may have suited the emergence of materialism, they no longer fit present conditions. Conceptually, he contrasted the determinism, linearity, and ethnocentrism of modernization theories with his own allowance for cultural differences and with his recognition that postmaterialist values were only part of clusters of values under postmodernization; the shading of postmaterialism in a particular country, for example, varies with its religious history (Inglehart & Baker, 2000). Even with that stress on cultural contingency, however, he has continued to find that postmaterialist values are good descriptors and predictors of change. In that case, it is reasonable to expect that the theory should apply to human-animal relations.

One of the most significant postmaterialist values that emerged on several fronts concerned the extension of civil rights and social inclusiveness, the breaking down of boundaries drawn on the basis of ethnicity, gender, sexual preference, and age. They were marked, that is, by acceptance of the equal moral subjecthood of former “others,” and this extended recognition, which began with humans, was not necessarily restricted to them. The links between postmaterialism and environmentalism are among the most robust findings from the theory, and environmentalists have been concerned with such non-human others as endangered species, battery hens, intensively reared pigs, forests, ecosystems, and particular natural places. Postmaterialists, in fact, take principles of ecological harmony as models for change.

Surprisingly, Inglehart has not used attitudes toward animal rights as registers of postmaterialism, for the temporal and discursive overlap between animal rights and other postmaterial issues suggests that such attitudes should fit his thesis. Other writers have argued that the theory is, or should be, applicable to animal rights (Aslin & Norton, 1995). They have good reason. The emergence and gradual acceptance of animal rights as more than a minority concern has coincided with the success of the movements for human rights and environmental responsibility, which match his theory, and animal rights has involved similar discourses. Animals have increasingly been discussed in the language of oppression, so effective in mobilizing other movements. Their homes and habitats are wantonly destroyed. They are subjected to cruel experiments, produced for meat under repressive factory systems, and hunted for sport. Unable to defend themselves against such oppression, both domesticated and wild animals have become increasingly in need.

In a sense, humans manage and control the world, and animals have become a human responsibility. More strongly, the prospect of the extinction of ever more species evokes the moral terrain of genocidal dominance. Although animal rights activists are distinctive in explicitly claiming the moral equivalence of humans and other animals, which is implicit in these discourses, their concerns are widely shared. Similarly, although these concerns were not new to the postmaterialist generations, their shift from minority positions to at least tacit acceptance in mainstream movements has coincided with the

emergence of postmaterialism. Because Inglehart seems not to have followed the implications of this extension of moral inclusiveness, his social theory entails a sense of the social that is purely human.

In his account of animals in modern cultures, Franklin (1999) drew on different understandings of postmodernity and security and also implied a more inclusive sense of social.

## **Postmodernity and Ontological Insecurity**

Like Inglehart, Franklin (1999) theorized the socio-cultural changes described under postmodernization. Where human-animal relations are peripheral to Inglehart's work, however, Franklin took them as his central theme. That focal difference is accompanied by a conceptual contrast. Where Inglehart stressed "existential security" Franklin drew on theories of "ontological insecurity."

Franklin developed his analysis through a reading of Tester's (1992) account of "the humanity of animal rights." At the time Tester wrote, animal rights activists were so widely seen as young fanatics that he found it unimportant either to question his own assumptions, which were largely consistent with that stereotype, or to investigate the social composition of support for the issue. When, however, he treated disputes over animal rights simply as disputes over what it means to be distinctly, or properly, human, he, in effect, begged the question. The issue was the boundary between humans and animals. Animal rights activists aimed to achieve full rights for all sentient, moral subjects. To be sure, the means that some groups used contributed to their misperception. They deemed any violation of those rights to be abhorrent and demanding of extreme action. In the popular image of animal rights as a social movement, this extremism has overshadowed all else. Nevertheless, since the activists drew widespread sympathy for their concerns, if not for their means, the issue required a more nuanced and empirical analysis.

Franklin (1999) observed that support for the principles of animal rights had a wider demographic base than suggested in Tester's identification of it with extreme political groups (pp. 183-188). He also noted that many animal rights activists effectively repeated Tester's move - but in reverse. They first col-

lapsed the distinction between humans and animals by arguing for moral equivalence but then restored the distinction by demanding the complete separation of animals from humanity. Through studying trends in the presentation of zoos, in pet-keeping, in hunting and fishing, and in agriculture, Franklin showed that this demand runs counter to the emergence in late modernity of more companionate, protective, and empathetic patterns in human-animal relations. These trends also entail granting animals forms of moral subjecthood. Rather than the apartheid explicit in strict animal rights, they imply what might be called “species multi-culturalism” or a politics of sentimentalization, reconciliation, and mutual discovery. They entail, that is, neither the zoocentrism of strict animal rights nor an anthropocentric privileging of the human, but hybrids of the two. Nor were the trends confined to Tester’s young radicals. Franklin confirmed what other analysts have found: Shifts in attitudes toward animals have been relatively popular and diffused (Macnaghten & Urry, 1998, pp. 66-67).

To account for those changes, Franklin drew on the ontological insecurity that such prominent sociologists as Giddens (1991) and Beck (1992) have attributed to postmodernity. We should stress that this concept has a tangled genealogy well beyond what we can consider here. “Existential security” in Inglehart’s sense refers to the certainty that basic material needs will be met. Ontological insecurity, in the terms that Franklin adopted from Giddens (1991, p. 243), refers to a sense of loss of continuity and order in events, including those not directly within an individual’s perceptual environment. It then describes the senses of confusion, loss, unpredictability, and anxiety that many writers have attributed to the churning nature of postmodernity and that have been linked to the fragmented and fugitive character of labor markets, neighborhoods, communities, and family and domestic relations. It has been similarly applied to the privatism and social isolation of modern individuals and cultures in the West (Saunders, 1984; Marshall, Rose, Vogler & Newby, 1985, 1987). In so far as constant innovation in the economic order is a precondition of material gain, then existential security may necessarily generate ontological insecurity, and the seeming contradiction between it and Inglehart’s existential security is then more apparent than substantive.

On that basis, Franklin (1999) argued that companionate human-animal relations - in that they fill the emotional spaces formerly met by enduring human

relationships - have emerged in response to widespread uncertainty. Noting that the disruptive effects of socio-cultural change are scattered in affluent societies, he then held that the extension of moral subjecthood to animals seen in these new companionate relations should be expected to span dimensions such as education, class, gender, and age. This is consistent with the mounting body of evidence on the inclusion of companion animals as members of families (Salmon & Salmon, 1983; Albert & Bulcroft, 1988) and on the contribution of animals to human health (Wilson, 1997). Franklin allowed, that is, for a sense of the social not restricted to the purely human. That, rather than the apparent contradiction between existential security and ontological insecurity, is the real point of contrast between his and Inglehart's theories.

It allows us to draw different hypotheses from the two accounts. If our extension of Inglehart's postmaterialism to the issue of human-animal relations is justified, support for the moral equivalence of humans and animals should be higher among the young, the more affluent, and the better educated - where postmaterial value orientations should be concentrated. On Franklin's (1999) argument, however, that support should be more broadly diffused. Because concentration is easier to measure than diffuseness, we focus on Inglehart in our test. In the next section, we describe the data and method we used.

## **Data And Method**

We drew our data from the responses to two statements in the 1993 International Social Science Programme Survey: "Animals should have the same moral rights that human beings do," and "It is right to use animals for medical testing if it might save human lives" (Zentralarchiv, 1995). These questions are well suited to our purposes, even though we are making *post hoc* and opportunistic use of them. On our reading of Inglehart, agreement with the first should yield a strong result for postmaterialism, while agreement with the second would be more consistent with the instrumental rationality of materialism. Trends in responses to the two questions should then provide a degree of internal checking.

We have restricted our analysis to 6 of the 21 countries included in the survey. Since Inglehart has found that postmaterial effects are strongest in richer

countries, we selected the United States, West Germany, and Japan. For contrast, we added Bulgaria, from the former Eastern Bloc, and the Philippines, as a developing country. Finally, because an Australian study has shown that the data generally support Inglehart's thesis (Bean, 1998) and because Aslin and Norton (1995) have linked Australians' attitudes to animals with post-materialism, we have included Australia.

The two statements in the survey, which were Likert-type questions with five responses from *Strongly Agree to Strongly Disagree*, gave us our dependent variables. Our independent variables were postmaterial value orientations, age, education, and sex. We derived postmaterial value-orientations from Inglehart's (1977) 4-item scale.<sup>3</sup> We operationalized age as 10-year groupings and education as tertiary degree or some tertiary education versus no tertiary education. We also included sex, as a control. Given the consistent finding that women support animal rights more than do men (Pifer, Shimizu, & Pifer, 1994; Aslin, 1996; Hills, 1993), a counter-finding here would call our analysis into question. Because income data were not collected in the Japanese or Philippine surveys, we were not able to conduct a full test of the effects of affluence as such - as would be ideal in any test of Inglehart's work.

After rescaling responses to the dependent variables,<sup>4</sup> we analyzed them with Multiple Classification Analyses (MCA), a technique that Inglehart (1990) has used. This entails the calculation of mean scores for the dependent variables based on values of the independent variables. MCA produces beta coefficients, which are standardized estimates showing the relative contribution of each of the independent variables. Larger beta coefficients indicate stronger effects. We present *p* values (based on F-tests) to indicate the probability that the means for each independent variable are equal in the population; *p* values of 0.05 or less suggest we can be reasonably confident that the mean scores differ in a given country. Finally, multiple R-squared statistics show the amount of variance in the dependent variable that is explained by all independent variables combined.

## **Analyses**

The full results of the analyses are in Tables 1 and 2. Since both tables show the expected differences between men and women - with the exception of

Japan on the issue of moral equivalence - the results have a certain face validity. The internal check, however, introduces a preliminary caution. Although the results for Japan and West Germany show the expected gradients between materialists and postmaterialists on both questions, the means do not show the expected degree of mutual exclusivity between the two sets of responses. The questions then might not be measuring exactly what we supposed they would. Even so, the results do not show the expected support for Inglehart.

**Table 1: Animals should have the same moral rights as humans  
(Multiple Classification Analysis)**

	Australia	Bulgaria	Japan	Philippines	United States	West Germany
<i>Means</i>						
<b>Grand Mean</b>	42	60	78	55	44	56
<b>Values</b>						
Material	43	61	73	55	45	51
Mixed	42	59	78	54	43	57
Postmaterial	45	56	80	54	44	58
	.291	.767	.075	.828	.665	.038
<b>P</b>						
<b>Age</b>						
15-24	43	66	76	55	58	56
25-34	48	63	78	56	47	59
35-44	42	60	79	55	44	59
45-54	40	59	79	57	39	53
55-64	41	64	77	50	39	52
65-74	41	50	75	48	36	52
75+	48	52	80	54	42	69
	.008	.009	.805	.102	.000	.050
<b>P</b>						
<b>Education</b>						
Non-Tertiary	44	60	78	55	44	57
Tertiary	37	61	76	57	37	50
	.001	.704	.501	.786	.013	.095
<b>P</b>						
<b>Sex</b>						
Men	40	58	80	54	38	52
Women	45	62	76	55	48	60
<i>p</i>	.000	.163	.025	.276	.000	.000

Table (cont.)

	Australia	Bulgaria	Japan	Philippines	United States	West Germany
<b>Betas</b>						
<i>Values</i>	.04	.02	.07	.02	.02	.09
<i>Age</i>	.11	.14	.05	.10	.20	.12
<i>Education</i>	.09	.01	.02	.01	.07	.06
<i>Sex</i>	.10	.05	.07	.03	.16	.13
Multiple R	.033	.021	.012	.011	.075	.045
squared n	(1393)	(932)	(1069)	(1176)	(1234)	(893)

Notes: Dependent variable 'Animals should have the same moral rights as human beings do' (0 = Strongly Disagree to 100 = Strongly Agree). Multiple Classification Analyses were used to estimate the impact of values, age, education and sex on the dependent variable. Beta coefficients show the relative impact of each independent variable on the dependent variable.

**Table 2: OK to use animals for medical testing if it saves human lives  
(Multiple Classification Analysis)**

	Australia	Bulgaria	Japan	Philippines	United States	West Germany
Means	60	87	50	64	64	58
<b>Grand Mean</b>						
<b>Values</b>						
Material	59	85	57	66	64	65
Mixed	61	90	49	63	64	57
Postmaterial	57	85	46	62	62	53
	.038	.007	.002	.100	.709	.001
<b>P</b>						
<b>Age</b>						
15-24	58	82	37	65	57	59
25-34	56	85	47	63	58	56
35-44	60	85	47	64	62	56
45-54	59	83	50	63	59	60
55-64	60	90	54	66	69	56
65-74	65	93	60	64	66	63
75+	60	89	56	61	73	55
	.046	.000	.000	.695	.000	.418

Table (cont.)

	Australia	Bulgaria	Japan	Philippines	United States	West Germany
<b>P</b>						
<b>Education</b>						
Non-Tertiary	59	87	49	64	63	57
Tertiary	63	87	54	74	71	63
	.043	.971	.130	.173	.004	.154
<b>P</b>						
<b>Sex</b>						
Men	64	88	52	65	70	61
Women	56	86	48	63	59	55
<i>p</i>	.000	.075	.020	.052	.000	.009
<b>Betas</b>						
Values	.07	.10	.11	.06	.02	.13
Age	.10	.16	.18	.06	.18	.08
Education	.06	.00	.05	.04	.08	.04
Sex	.15	.06	.07	.06	.18	.09
Multiple R	.038	.035	.056	.013	.074	.033
squared n	(1390)	(960)	(1062)	(1177)	(1189)	(891)

Notes: Dependent variable 'It is right to use animals for medical testing if it might save human lives' (0 = Strongly Disagree to 100 = Strongly Agree). Multiple Classification Analyses were used to estimate the impact of values, age, education and sex on the dependent variable. Beta coefficients show the relative impact of each independent variable on the dependent variable.

Table 1 shows mean scores and measures of association for the first dependent variable ("Animals should have the same moral rights that human beings do") with larger mean scores indicating more agreement with the statement. Value-orientations have very little impact on the dependent variable in Australia, Bulgaria, the Philippines, and the United States. Inglehart's schema would not be expected to be applicable in Bulgaria and the Philippines, but it is striking that the differences between materialists and postmaterialists are slight in the affluent Australia and the United States. The effect is somewhat stronger in Japan and in West Germany, where it is significant, but the beta coefficients show that values are less important in West Germany than age

or sex and no more important than sex in Japan. The pattern in age is just as striking. It is all but uniformly U-shaped rather than having the linear trend expected under Inglehart's model. In Australia, Japan, and West Germany, where postmaterial effects should be strong, support for animals' moral rights is highest among the oldest cohorts. In the other three countries, there is an upturn in support. Although the beta coefficients show that age is a relatively strong predictor in most countries, its effects do not follow Inglehart's pattern. Finally, in all but the less affluent Bulgaria and the Philippines, tertiary education tends to lower support for the moral rights of animals rather than to raise it, as would be expected from Inglehart's thesis.<sup>5</sup>

Table 2 shows the results for the second dependent variable, "It is right to use animals for medical testing if it might save human lives." Values is a good predictor for Bulgaria, Japan, and West Germany - where it has either the strongest or second strongest impact - but is weak for Australia, the Philippines, and the United States. Age again has a relatively strong effect in all six countries. In all but the United States, however, the oldest cohort goes against the roughly linear trend. The effect of education also runs directly counter to expectations.

Finally, the multiple R-squared statistics show that only a small amount of the variance in both dependent variables is explained by values, age, education, and sex combined. In Table 1, the results range from 1.1% for the Philippines to 7.5% for the United States and, in Table 2, from 1.3% to 7.4% for the same countries. This moderates further the already scant support for Inglehart's thesis. Indicators that, in his terms, are usually important in predicting environmental attitudes and behavior do not appear useful for modeling support for animal rights. If only negatively, our results are more consistent with Franklin's argument for the diffuseness of responses to human-animal relations.

## **Discussion**

Although we have given Inglehart every advantage by including the affluent countries where his postmaterial effects should be strongest and by choosing data, variables, and a method - all of which have been used to support him - we still found little backing for his theory and more trends counter to

it. Support for the extension of animal rights is substantially established in all six countries - startlingly so. In all, however, that support is spread among all age groups and among those with materialist as well as postmaterialist orientations. Rather than the expected concentration of support from tertiary educated people, we found the opposite. With more than 90% of variance left unexplained in Tables 1 and 2, Inglehart's allowance for the cultural contingencies, which are certainly evident here, carries a lot of weight. Because his thesis is well supported on other issues - if the link we drew from it to animal rights is granted - there must be something specific to this issue that is discrepant with the theory.

We argue that this is given by the framing of postmaterialism, in that the crossing of species-boundaries in the assumption of moral equivalence is at odds with its anthropocentric focus. Since Franklin's case for diffuseness better fits our results, we develop that point by returning to the difference between his and Inglehart's versions of postmodernization.

We originally contrasted the two theories by noting the different emphases in Inglehart's existential security and Franklin's ontological insecurity, and we now observe that these opposite responses to security imply different *a priori* assumptions over human-animal relations. Inglehart takes an anthropocentric stance. In effect, he claimed a distinct human nature, deriving his axiom of "scarcity" from Maslow's "hierarchy of needs," in which full humaneness is said to result from the transcendence of physiological, or animal, needs.

To repeat, Inglehart's postmaterialist thesis argues that new values emerge as a result of material security. Although these values drive the acceptance of lifestyle variations, the extension of rights to others, and the need for environmentalism, they still are human-centered.

Where postmaterialism is, by definition, anthropocentric, Franklin left that issue open by blurring the boundary between humans and nonhumans. As we have seen from his use of ontological insecurity in postmodernity, companion animals and humans are drawn together into increasingly close emotional bonds and arranged in new hybrid familial or domestic social relations. The churning nature of postmodern labor markets has disturbed normative

patterns of conjugal, familial, neighborhood, and community life. Challenges to former patterns of gender and interpersonal relations have created gaps and absences in our emotional and domestic lives that are now filled by new and valuable relations with companion animals.

Misanthropy describes the commonly held view among environmentalists that humans as a species have become out of control, malevolent, and ecologically imperialistic; or that they are, in Einarsson's (1993) summary of the debate, "a foreign negative element, or even . . . a cancer on the environment" (p. 82). As Franklin (1999) notes, it is "explicitly tied to a perceived crisis of morality and disorder in late modernity" (p. 197) and thus to the same sense of disrupted predictability suggested in ontological insecurity. Consistent with what we found in our analyses, it tends to be associated with less, rather than more, education (Cartmill, 1993).

Given the pervasiveness of misanthropy, allowance must be made for it in theories of human-animal relations. That, in turn, requires a shift from an anthropocentric privilege to a zoocentric inclusiveness. Analysts who apply Inglehart's postmaterialism to human-animal relations repeat the question-begging noted earlier. When the distinctiveness of humans is at issue, a theory in which the human is privileged from the start cannot be adequate.

To conclude, we stress that our comparison of Inglehart's and Franklin's theories and our test of Inglehart are indicative rather than definitive. Inglehart's postmaterialism is too well supported on other issues to be discredited here, and we have not subjected Franklin's approach to rigorous test. Such testing might include quantitative comparison of human-animal relations in communities that have experienced socio-economic change through migration or loss of labor markets with those in communities that have had more experience with social continuity and tranquility. Similarly, since relationships with nonhumans should now be included in the sociology of the family, it would be instructive to compare those relationships in different types of households. Although quantitative study along these lines would be revealing, it also would need to be supplemented with comparative ethnographic investigation - where the *ethnos* under study was not restricted from the start to humans. We also have left difficulties unresolved. The distinction between anthropocentrism and misanthropic zoocentrism, for example, remains prob-

lematic. As the discrepant figures in our internal check suggest, people find ways of reconciling orientations that initially seem mutually exclusive.

All that requires further study. For the moment, we hold that the points of difference we have raised and shown here indicate the issues that need to be addressed in a broad sociology of human-animal relations. Any number of theories and methods might be brought to the study of how the social conditions of postmodernity affect the practical settlement of apparently contradictory demands in humans' relations with nonhuman others. But if these are anthropocentric from the start or if nature and culture are treated in them as categorically distinct, they will not be adequate to the complexity of human-animal relations under postmodernity.

## Notes

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<sup>2</sup> Our use of the phrase 'hybridity of nature-culture' follows that of writers in science and technology studies (Latour, 1991). It refers to the claim that the natural world and the human world are not separate but intertwined, mixed-up and implicated together in historical processes and cultural artifacts. It is not possible therefore to speak of human cultures as categorically separate and separable from the natural world (animals and other natural objects) in the way that is customary in both natural and social science.

<sup>3</sup> The Postmaterialist question asks: "Looking at the list below, which one thing do you think should be [country's] highest priority, the most important thing it should do:

1. Maintain order in the nation.
2. Give people more say in government decisions.
3. Fight rising prices.
4. Protect freedom of speech.

And which do you think should be [country's] next highest priority, the second most important thing it should do?"

Postmaterialists are those who choose any combination of responses 2 and 4, while those choosing any combination of responses 1 and 3 are Materialists. All other responses are assigned to the Mixed category.

<sup>4</sup> The five Likert type attitudinal responses were rescored (0 = Strongly Disagree; 25 = Disagree; 50 = Neutral; 75 = Agree; 100 = Strongly Agree). Data for the countries

in these analyses were collected in Australia between December 1993 and October 1994 (n = 1779), in Bulgaria in March 1994 (n = 1183), West Germany in July 1993 (n = 1140), Japan from November to December 1992 (n = 1305), the Philippines in December 1993 (n = 1200) and the USA from February to April 1993 (n = 1157).

- <sup>5</sup> This pattern for education is consistent with such analyses of income as were possible. Controlling for other independent variables, we found higher income earners more likely than those on lower incomes to *disagree* that animals have the same moral rights as humans in Australia, the United States, and West Germany. We also found that higher income earners were more likely than lower income earners to *agree* that animals should be used for medical testing in these three countries. In both instances income and the dependent variables were associated in a linear fashion. The Bulgarian data showed no clear relationship between income and attitudes toward animal rights, or the medical testing of animals.

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