

Environmentalism and Postmaterialist Values in China

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## Abstract

Postmaterialist values, those that emphasize higher-order human needs, have become widely accepted as the force behind environmentalism in the West. Little research has been dedicated to studying the importance of these values outside of the developed world as experience with pollution has been the assumed cause. To expand the understanding of ecological concern in China, this study seeks to test the values-based theory of environmentalism. Using survey data taken from the World Values Survey, this study found no evidence of a relationship between postmaterialist values and environmentalism in China. Evidence was found to suggest that widespread environmentalism expressed there may not be the result of objective environmental conditions but instead the result of other cultural factors not shared by Western societies. In doing so, this study addresses a gap in the understanding of ecological concern in China and suggests topics for future scholarship. This research also highlights the potential importance of cultural values in studying environmentalism in developing nations.

## Introduction

In recent years, the topic of environmental concern has grown as an area of inquiry, beginning with the rise of environmentalism in the West during the later decades of the twentieth-century. Though early scholarship treated environmental concern as a luxury good only available to the developed world, postmaterialist values would eventually emerge as the conventional explanatory variable. When environmentalism began to appear as a political force in developing nations, it was described as a materialist response to devastating ecological destruction and considered a companion to the values-based theory. Accordingly, values less industrialized nations generally have not been considered and little research has been dedicated to the subject.

China, despite its rising power and status as an advanced developing nation, is included as a place in which environmentalism is not well understood. As China is the World's most populous nation and has the second largest economy, environmental attitudes there may have profound effects on global efforts to address challenges such as climate change and deforestation. Sophisticated knowledge of the nature of ecological concern is also necessary when studying the political ramifications of environmental problems, likely a topic of future study as the nation continues to develop and the current regime seeks new sources of legitimacy. A better understanding of environmentalism in China may also prove valuable in studies of other industrializing countries as they reach more advanced levels of development.

To contribute to the limited research on environmental attitudes in China, this study seeks to examine the role of values, specifically postmaterialism, in shaping concern. Postmaterialist individuals place great importance on the higher needs of Maslow's hierarchy. Included among these concerns are morality, autonomy, expression, aesthetics, and quality of life. Postmaterialists, as a result of continued abundance, take for granted base human economic needs such as health, safety, and sustenance. Environmentalism can be connected with postmaterialism through the significance placed on the aesthetics of the natural world and on the broader effects of human activity. Postmaterialists value the environment beyond simple economic utility and see it as deserving of protection in spite of short-term costs. It must be noted that this type of concern does not require experiences with pollution and includes issues that have little or no direct affect on individuals' lives. As an advanced industrialized country and one that has experienced three decades of continual development, postmaterialist values have likely taken hold in China at least to the point that their effect on environmentalism can be studied.

The aforementioned objective conditions framework, the dominant paradigm used in descriptions of developing nations, features a very different type of environmentalism. In this case, such attitudes are a materialist response to experience with pollution that is so severe it threatens human health and lives. Here, environmentalism is intensely focused on local issues that must be significant enough to warrant the potential economic costs of regulation.

### Literature Review

Environmental concern first emerged as a political force in the nations of Western Europe and North America in the mid-twentieth century. Accordingly, environmentalism was initially considered a luxury good, only available to affluent societies that had already undergone the often pollution-intensive process of creating an industrial society.

Dunlap, Gallup, and Gallup (1993) examine this relationship by analyzing the results of the global Health of the Planet Survey. This study compared national-level data on environmental attitudes and gross national product. While some differences were seen in comparing affluent to developing nations, namely the level of support for higher prices to pay for regulation, environmental attitudes were found to be largely consistent across the developing-developed gap. Hence, this analysis suggested that environmentalism was not only the provenance of postindustrial societies and that affluence was not a proper way to examine such values.

In a later study of global polling data, Franzen (2003) also examined the relationship between affluence and environmental concern. Noting that the assertion that economic prosperity is required for ecological concern was, as in the above scholarship, the subject of considerable debate, the author sought to contribute by comparing changes in environmental concern to changes in affluence over time using national-level data. Firstly, Franzen found that

environmentalism was only weakly correlated with affluence. Additionally, economic growth was found here to have an extremely weak relationship with increases in ecological concern at the fringes of significance. Though affluent countries were shown here to have a high level of concern for the environment, the growth of their prosperity was not found to be a useful predictor of such attitudes. Therefore, another feature of industrialized nations must be relevant in such analyses.

As simple economic wealth failed to provide adequate power in explaining environmentalism, an alternative theoretical framework was proposed. In the seminal Inglehart (1995), postmaterialist values were targeted as the driving force behind the emergence of environmentalism. Though this set of cultural values are related to continued abundance, Inglehart's approach is more abstract and ultimately has gained widespread acceptance.

By subjective values, Inglehart refers specifically to postmaterialism. Postmaterialism is linked with favorable opinions of environmental protection as this regulation often hinders economic growth and productivity but is strongly linked with aesthetics and quality of life. Using the World Values Survey, this study demonstrated that respondents espousing postmaterialist beliefs were more likely to favor efforts to protect the environment, even at the cost of economic growth. This pattern held true for both types of economies, but was much weaker in developing nations. Postmaterialism was also demonstrated to be concentrated in developed nations and to have emerged around the same time that environmentalism became widespread. Inglehart takes care to note that these industrialized nations often lack the severe environmental degradation seen in the developing world but still express substantial levels of concern. Accordingly, respondents in the developed world were more likely to express negative sentiments on the global environment but have positive views of their local one.

Inglehart also writes that environmental conditions are able to explain the emergence of environmentalism in largely materialist societies. As postindustrial societies transitioned to their current state, pollution-intensive industries were moved to the developing world in great numbers. As such, these countries have experienced high levels of ecological damage. Citizens of these heavily polluted nations, generally in the industrializing world, were found in this analysis to express greater levels of concern for the environment. In a reversal of an aforementioned relationship, these respondents were more likely to have a negative view of their local environment but have little fear over the state of the global one. A comparison of these two factors was inconclusive due to the limited availability of environmental data. In general, it did appear that both cultural and objective factors have roughly equal effects on the development of environmentalist attitudes but are rarely, if at all, important in the same society simultaneously. This important addition, however, addresses the main criticism of the postmaterialist theory of environmentalism by establishing how it can result from objective ecological conditions.

Building upon the cultural framework laid out in Inglehart, Lee and Norris (2000) looked at postmaterialism in Eastern Europe as most in-depth analyses had hitherto been focused on North America and Western Europe. This study used the World Values Study to compare patterns that have been demonstrated in the West with those in the region. In general, the authors found that the same demographic relationships with environmentalism that had been observed in the West held true in Eastern Europe across national lines. These demographic factors, namely education, wealth, and youth, can be connected to postmaterialist values, especially in the transitioning societies of the former Eastern Bloc. Again, postmaterialism was found to be strongly correlated with environmental concern. These results provide evidence to support the

existence of a correlation between postmaterialist values and ecological concern in an advanced developing nation like China.

Cultural factors were also explored in Sarigöllü (2009). This study compared environmental attitudes between the capitals of developing Turkey and postindustrial Canada. Residents of more polluted Istanbul were found to express a greater level of concern for the state of the environment than residents of Montreal based on original survey data. This result affirms the importance of objective conditions. Strongly postmaterialist Montreal, however, was found to have a largely consistent level of environmentalism while in Istanbul such attitudes varied widely. The educated and wealthy respondents, generally expressing greater levels of postmaterialism, in Turkey were more likely to express concerns over the state of the environment. This study provides further support for the possible significance of postmaterialist in advanced developing nations, among the other cultural factors considered.

In Pierre (1997), this values-based framework is critiqued using national-level survey data. The author demonstrates that wealthy nations, such as Japan, may demonstrate a greater level of concern for the state of the environment than other developed countries despite having fewer postmaterialists in its population. Accordingly, Pierre writes that other cultural factors, such as traditionalism and religion, can have important implications for the study of these attitudes. Care is taken to support the use of postmaterialism as an explanatory variable for environmentalism. Unique aspects of national culture, however, should be considered if they have the potential to work with or against the widely-supported link between postmaterialism and environmentalism.

A recurring theme in the literature on global environmental attitudes is the relative lack of in-depth and individual-level research done on developing nations. Instead, early scholarship

focused only on Western nations or a larger cohort in a comparative framework. More recent research, as in Lee and Norris (2000), has begun to focus on emerging economies. Despite recently surpassing Japan as the world's second-largest economy and being the most populous nation on earth, China remains a relatively new territory for environmentalism research.

Chung-en Liu and Leiserowitz (2009) present findings from one of the first publically-available nation-wide surveys on environmental attitudes to be conducted in China from 2007. In general, the survey found widespread support for the protection of the environment, with respondents expressing a preference for such efforts over unfettered economic development. Those surveyed also expressed optimism on the potential for improvement in the local environment over the coming year and a greater level of concern for these provincial conditions over global ones such as climate change. Surprisingly, respondents generally reported contentment with the quality of their local environment despite living in some of the world's most polluted cities. The positive perceptions of the immediate environment suggest that the objective conditions theory alone cannot explain ecological concern in China, even with its localized focus.

Cao, Chen, and Liu (2009) provide a deeper analysis of environmental attitudes in China, focusing on specific demographic factors. This analysis found that an overwhelming majority of respondents agreed that their nation was undergoing "severe environmental degradation" and that these conditions had negative implications for their health. Only around half respondents stated that protecting the environment was more important than economic growth despite this fact. Stronger environmental attitudes were associated with higher education levels, white collar professions, and both high and low incomes. Limited geographic data also suggested stronger concern in areas of China expected to be more polluted. While this fact combined with the



ambivalence of regulation vis-à-vis growth and the belief that pollution has health effects implies the strength of the objective conditions framework, the high levels of concern expressed by wealthy, well-educated, and professional Chinese suggests that values may also be of consequence. It is these very people that would be expected to be the most postmaterialist in Chinese society.

The next step in the development of a comprehensive understanding of environmental concern in China is to investigate the postmaterialist values theory that has become a widely accepted standard in the field. Once this gap in the literature has been filled, the base for further research on environmentalism, such as examining its salience as a political issue, will have been firmly established. As China is an advanced developing economy, an in-depth look at cultural factors of environmentalism may also provide insight as to the applicability of values-based theories in other economies as they industrialize.

Looking at the previous scholarship, it is clear that it is valid to look for a relationship between these two variables. In addition to being the conventional explanation, Chung-en Liu and Leiserowitz (2009) have shown widespread concern for the environment in China and Cao, Chen, and Liu (2009) have demonstrated that there is a high level of environmentalism expressed by the individuals most likely to be postmaterialist. Therefore, the hypothesis to be tested in the study is that individuals expressing postmaterialist values will also report a greater level of concern for the state of the environment.

### Methodology

The data used in this analysis was taken from the most recent wave of the World Values Survey. For China, this data dates to 2007. Additional data used for comparative purposes was taken from the World Values Survey as well for the nations of Germany (2006) and Japan (2005).

The former was used to establish a baseline as a secure, highly-developed, and prosperous Western nation. The latter was included to provide another baseline, as a highly-developed nation that also shares a similar cultural tradition to China.

Postmaterialism was measured with an index calculated by the World Values Survey (see Appendix A). It is based on the respondents' answers to six questions about the desired goals of contemporary society. The six questions were divided over three sets of societal aims, with respondents directed to select two. These sets included postmaterialist responses about protecting and expanding free speech, progressing towards a more humane and personal society, and increasing citizen input in important government decisions. These response sets also included standard materialist responses such as maintaining order, preventing inflation, and ensuring a strong national military. The index score for respondents was then based on how many postmaterialist responses they chose. The highest score individuals can receive is five (postmaterialist) while the lowest is zero (materialist).

Environmentalism was measured with an index based on the respondents' answers to three questions about environmental protection (see Appendix B). This set included the willingness to pay higher prices for the purpose ecological protection, support for higher taxes to do the same, and the belief that such actions not cost citizens anything. For each question in the survey, respondents were able to state their level of agreement from "strongly agree" to "strongly disagree." The first two questions, expressing "positive" concern for the environment were reversed coded so that agreement would increase the individual's index score. The composite variable was built by adding the scores for each question. The lowest score possible for respondents is three (least concern for environment) while the highest is twelve (highest concern).

Demographic variables were included in this analysis as well. These factors have been shown in previous scholarship to be of some consequence in determining environmentalism in China and/or other regions. Education level and income were broken down into ten point indices by the World Values Survey, with educational attainment and high incomes associated with higher values respectively. A profession dummy variable was also created, with white collar professions being assigned a value of one. All cases were weighted using the computed variable provided by the World Values Survey.

To examine the relationship between postmaterialism and environmentalism, a multivariate regression analysis was performed. This statistical technique was selected due to the large ranges present in the two additive indices and the ability to control for the effects of variables demonstrated to be pertinent in prior research. With environmental concern as the dependent variable, postmaterialism, respondent age, education level, household income, and profession were selected as the independent variables. All statistical analysis was completed using the IBM SPSS Statistics 19 software package.

### Results and Analysis

Table 1 shows the mean values for the two variables in question.

<b>Table 1: Environmentalism and Postmaterialism (Mean)</b>			
Nation	China	Germany	Japan
Postmaterialist Index	1.30 (1.10)	2.66 (1.11)	2.11 (1.14)
Environmentalism Index	8.45 (1.59)	5.98 (2.20)	7.53 (2.00)
N	1026	1772	675

As the above data demonstrates, China as a developing nation has not yet experienced the same level of acceptance of postmaterialism that Japan and Germany have after attaining industrialized status. China does, however, express a level of concern for the environment that is higher than in Japan or in Germany. While such a result would appear to call into question the

entire theoretical framework for this study, it is important to note that the target relationships exist not in this aggregate national level data but instead at the individual level.

<b>Table 2: Association of Independent Variables with Environmental Concern</b>			
Nation	China	Germany	Japan
Postmaterialism	.008 (.046)	.405 (.050)***	.166 (.068)*
Income	.135 (.028)***	.203 (.032)***	.134 (.028)***
Education Level	.019 (.023)	.227 (.028)***	.106 (.051)*
White Collar	.207 (.130)	.292 (.125)**	.179 (.169)
Age	.023 (.076)	-.033 (.079)	.366 (.111)**
Intercept	7.87 (.261)***	2.79 (.285)***	4.92 (.505)***
Standard Error	1.577	1.986	1.910
R <sup>2</sup>	.035	.171	.076
N	1026	1772	675

\* p<.05; \*\* p<.01; \*\*\* p<.001;  $y = \beta_0 + \beta_1(\text{Postmaterialism}) + \beta_2(\text{Income}) + \beta_3(\text{Education}) + \beta_4(\text{White Collar}) + \beta_5(\text{Age})$ ;

As shown in Table 2, postmaterialism at the individual level lacks explanatory power for environmentalism in China as it has no significant affect on environmentalism. Accordingly, it can be said that environmental concern, clearly espoused by the Chinese people as seen in Table 1, is quite evenly diffused across the cultural boundaries created by postmaterialist values. As expected, postmaterialism as an independent variable in this model was significantly related to environmental concern in the other two countries included. This was particularly true for Germany, with postmaterialism having the greatest effect on environmentalism and the model overall having a rather robust R<sup>2</sup> value of 0.17. The German results serve to indicate that the model applied above was well designed as it adequately explained environmentalism in a nation where environmentalism is largely understood. It is apparent that this values-based explanation of environmentalism, strongly expressed in previous literature on the developed world, fails in China.

As postmaterialist values fail to affect environmental concern significantly, the next logical explanation for environmentalism in China is the objective conditions theory. As severe ecological degradation can clearly become a devastating health hazard, not to mention an

economic one, environmentalism can thus be the result of very materialist concerns of personal safety and not that of cultural values. By all accounts, China is among the more polluted nations on Earth, the product of years of rapid economic growth and the relocation of heavily polluting industries and processes to create the postindustrial economies of the West. If it is widespread environmental damage that is causing the high level of concern expressed in China, then environmentalism would be expected to be observed with little regard to values-based boundaries. The above results do show such a pattern, with high levels of ecological concern that cannot be sufficiently explained by the regression model that was applicable to Germany and Japan.

There is no readily available data to objectively measure local environmental conditions and compare them to environmental attitudes in China. The World Values Survey did, however, include several questions asking respondents about both local and global environmental issues. Since it is in fact the perception of environmental conditions that drives materialist-based concern, these survey questions are an excellent proxy through which to examine the objective conditions theory.

If objective conditions are the causal factor behind environmentalism in China, local ecological issues would be expected to be viewed in a negative light by respondents. Problems such as unsafe drinking water and poor air quality are intimately related to human health and are highly localized in scope. On the contrary, more abstract environmental issues such as climate change and biodiversity loss would likely be much less important to the materialist environmentalist as they have little or least extremely complex effects on individuals and their well-being. Individuals that placed great significance on these issues likely are influenced by

higher-order concerns than basic health and safety and hence may express high levels of environmentalism despite having a positive perception of their local environment.

The World Values Survey wave this data was taken from asked respondents whether they believed poor water, air, and sanitation, biodiversity loss, ocean pollution, and global warming are significant problems (see Appendix C). The six issues can be separated into two groups by virtue of being, with regard to individuals, local and concrete (the former three) or abstract and global in nature (the latter three). To provide insight on the strength of the objective conditions framework in explaining ecological concern, a second set of regression analyses was performed. A local and abstract environmental issues index was calculated for each respondent by reverse coding and adding together survey answers to the aforementioned questions. Each index had a range from three to twelve, with higher values associated with the respondent rating the presented issues as more serious problems. The indices were then used as independent variables in place of postmaterialism in the above statistical model.

<b>Table 3: Association of Local and Abstract Conditions with Environmental Concern in China</b>		
	Local Issues	Abstract Issues
Index	.005 (.017)	.106 (.027)***
Income	.107 (.025)***	.159 (.028)***
Education Level	.035 (.020)	.007 (.023)
White Collar	.104 (.122)	.014 (.127)
Age	.040 (.070)	.141 (.075)
Intercept	7.85 (.267)***	6.67 (.356)***
Standard Error	1.537	1.454
R <sup>2</sup>	.026	.067
N	1408	1006

\* p<.05; \*\* p<.01; \*\*\* p<.001;  $y = \beta_0 + \beta_1(\text{local}) + \beta_2(\text{Income}) + \beta_3(\text{Education}) + \beta_4(\text{White Collar}) + \beta_5(\text{Age})$ ;  
 $y = \beta_0 + \beta_1(\text{abstract}) + \beta_2(\text{Income}) + \beta_3(\text{Education}) + \beta_4(\text{White Collar}) + \beta_5(\text{Age})$ .

As Table 3 demonstrates, concern about local environmental problems is not significantly related to environmentalism in China. Alternatively, expressed concern over abstract environmental problems is, to a high degree as well. This result serves to suggest that objective

conditions may not be the dominant narrative, as the high level of ecological concern is not related to negative perceptions of respondents' immediate environment. The explanatory strength of abstract concerns supports a values-based framework as efforts to address these issues likely involve economic costs that materialists would avoid without direct harm and in general are more a function of societal interaction with the natural world, divorced from the individual. While postmaterialism is an example of such a theory, its weakness as an independent variable suggests that other values are important.

The relevance of different cultural factors is also supported by statistical results for Japan. Though the data resembled that for Germany, the model overall was weaker here ( $R^2=0.76$ ), with postmaterialism being a more minor, albeit significant, variable in determining environmentalism. Hence, while Japan is comparable to Germany economically and in terms of objective conditions, ecological concern is somewhat different. Pierre (1997) argues Japan and its cultural traditions that are unique among postindustrial economies is an excellent example of a nation in which the postmaterialist values theory lacks strength. As an East Asian neighbor, and one that exerted great influence on the region for centuries, China has cultural traditions that are very similar to Japan, especially in comparison to the West. It follows then that relevant cultural factors beyond postmaterialism would be shared by the two nations. The likely importance of these other values implies that the objective conditions paradigm is not the overriding relationship behind environmental concern in China. Instead, subjective values outside of postmaterialism are supported as the possible explanation behind the dependent variable.

Pierre (1997) calls attention to the less individualistic nature of Eastern societies compared to Western traditions. Individualism, according to Pierre, leads to an anthropocentric worldview, one that sees the natural world as justly exploited for human needs and benefit. By

subscribing to this viewpoint, one would be expected to place economic needs over environmental protection and see no inherent importance in such efforts. Because Eastern societies place a greater value on the community, they are more likely to see the environment as part of larger society and as a provider of shared goods, thus deserving of protection (Pierre 1997). It follows that communitarian individuals would likely express support for environmental ideas even in the absence of personal experiences with severe pollution and be concerned with even abstract human effects on the natural world.

Confucian values, shared in at least some form by China's neighbors, also may be able to explain environmental concern. Despite the efforts to expunge these cultural traditions, Confucian values have remained a powerful cultural force in China. As discussed in Snyder (2006), Confucian thought is well suited towards an anthrocosmic viewpoint, in which humans act in concert with nature. A harmonious relationship with nature is an essential component of this belief system. The great importance placed on moral relationships in Confucianism would thus lead individuals to see an inherent value in the natural world and seek to interact with it in a sustainable and just way. Like communitarian beliefs, this outlook likely leads to individuals being concerned with impacts on the environment that are divorced from everyday life.

### Conclusions

With the inability of postmaterialism to explain the strong environmental concern expressed in the absence of postindustrial abundance in China, additional cultural values emerge as the possible impetus behind the strong level of ecological concern expressed in the World Values Survey. The ability to link philosophically Confucian belief systems and communitarian outlooks with environmentalism further supports this assertion. At the present time there is not sufficient data to allow for an empirical study of the effects of these Eastern values on



environmentalism in China. This analysis does affirm, however, that culture must be a topic of further research to expand the knowledge of ecological concern in China.

This study serves to highlight the shortcomings of the postmaterialist theory of environmental concern. Though the relationship has been well-documented in the Western world, it has been found to be less important to understanding environmentalism in East Asia. And although it is not unreasonable to predict that, as China continues to develop, such values may grow in stature, these findings suggest that postmaterialism may never be the driving force behind environmentalism there as it is in the West. Additionally, this study highlights the need to consider a broad range of cultural factors, many unique and not shared in the West, when analyzing such topics as environmentalism.

## Appendix A

Postmaterialism in this study was measured with an index variable calculated by the World Values Survey. Participants were directed to select two responses from three sets of four societal aims as the most important. These goals can be easily categorized as materialist or postmaterialist. Respondents that chose more postmaterialist goals as societal imperatives were given a higher value for this variable. The range of the index was zero (materialist) to six (postmaterialist). The three sets of aims are listed below.

First Group: a high level of economic growth; making sure this country has strong defenses, seeing that more people have a say; trying to make our cities and countryside more beautiful

Second Group: maintaining order in the nation; giving people more say in government decisions; fighting rising prices; protecting freedom of speech

Third Group: a stable economy; progress towards a more humane society; progress toward a society in which ideas count more than money; the fight against crime

## Appendix B

Environmentalism in this study was measured by calculating an index based on three World Values Survey questions. Participants were shown three statements on environmental protection and could respond that they strongly agreed, agreed, disagreed, or strongly disagreed. These statements are as follows:

*I would give part of my income if I were certain that the money would be used to prevent environmental pollution;*

*I would agree to an increase in taxes if the extra money were used to prevent environmental pollution;*

*The Government should reduce environmental pollution, but it should not cost me any money.*

For the first two statements, the “strongly agree” response was assigned a value of four and the subsequent responses assigned decreasing values. The responses for the final question were reverse-coded from the World Values Survey dataset to follow a similar pattern. For each respondent, the value for each question was summed, to give a maximum value of twelve and a minimum value of three for this environmental concern index.

## Appendix C

The perceptions of local and abstract conditions were measured by calculating two index variables based on six questions about different environmental issues (three for each set). For local conditions these issues were poor water quality, poor air quality, and poor sanitation and sewage. For abstract conditions, these issues were biodiversity loss, ocean pollution, and climate change. Respondents could answer that they felt the problem was very serious, somewhat serious, not very serious, or not serious. The responses were reverse-coded so that high levels of the indices were associated with rating the issues as being more serious. The minimum value for both variables was three and the maximum was twelve.

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