

Idealism versus Reality: An Empirical Test of Postmaterialism in China and Taiwan*

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Using data from the fifth wave of the World Values Survey, this study analyzes the origins of postmaterialism and how it might affect people's support for environmental protection on the two sides of the Taiwan Strait. Our empirical results show that the level of postmaterialism in China is no less than it is in Taiwan. Age and education are two essential predictors for postmaterialism at the level of individual analysis. Middle class intellectuals in China are more concerned about postmaterialist issues than their counterparts in Taiwan. In addition, we find that the Chinese demonstrate higher levels of support for environmental protection than the Taiwanese do, whereas Chinese postmaterialists are less likely to be concerned about the environment than Taiwanese postmaterialists. Therefore, we suggest a revised version of Inglehart's hypotheses

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to explain support for environmental protection. The paper underlines the effect of political institutions on shaping cultural values, in contrast to previous studies that give too much weight to economic development.

KEYWORDS: China; environmental protection; Ronald Inglehart; post-materialism; Taiwan.

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Fighting for glory is the action humans take only after they get fed.

(Chinese proverb)



In recent years, there has been a deluge of “without democracy” titles in China studies, giving the impression that the Chinese prefer to preserve their material interests under an authoritarian regime rather than to attempt to bring about large-scale political change. In her book *Capitalism without Democracy*, Kellee S. Tsai says, “Contrary to the expectations of modernization and structural theorists, economic growth has not created a prodemocratic capitalist class. Only a handful of intellectuals, dissidents, and foreigners have openly called for political reforms that would result in multiparty competition, competitive, direct elections at the national and local levels, and guarantees for political and civil liberties.”¹ In *Accountability without Democracy*, Lily Tsai argues that “informal institutions that are good at holding local officials accountable for public goods provision may relieve pressure on the state to make formal institutional reforms a high priority.”² However, the conclusions of both authors are based on a speculative assumption that Chinese citizens emphasize material demands rather than psychological satisfaction.

Do Chinese favor material security and neglect psychological satisfaction to a higher degree than people in other countries? How do their preferences affect political values and behaviors? Inglehart and his col-

¹Kellee S. Tsai, *Capitalism without Democracy: The Private Sector in Contemporary China* (Ithaca and London: Cornell University Press, 2007), 201.

²Lily Tsai, *Accountability without Democracy: Solidary Groups and Public Goods Provision in Rural China* (Cambridge: Cambridge University Press, 2007), 266.

leagues define postmaterialism as *a process through which physical- and sustenance-insecure societies are gradually transformed into societies with values of belonging and self-esteem, as well as aesthetic and intellectual satisfaction*. In other words, in traditional and developing societies, a large number of people, who might be termed materialists, are striving for their daily sustenance and therefore would be expected to give top priority to physiological and security needs. But under conditions of prosperity, considerable numbers of people in advanced industrial societies are more likely to prioritize spiritual satisfaction, self-esteem, and intellectual curiosity.³ Postmaterialist theory has been widely applied in various studies of political culture and political behavior.⁴ In this study, the concept of postmaterialism will be used to analyze people's choices between "idealism and reality."

The study employs data from the fifth wave (2005-2007) of the World Values Survey (WVS) to analyze the origins of postmaterialism and to unravel how it may affect people's support for environmental protection in China and Taiwan.⁵ Delving into this topic highlights the effects

³Ronald Inglehart, "The Silent Revolution in Europe: Intergenerational Change in Post-Industrial Societies," *American Political Science Review* 65, no. 4 (December 1971): 991-1017; Ronald Inglehart, *The Silent Revolution: Changing Values and Political Styles among Western Publics* (Princeton, N.J.: Princeton University Press, 1977); Ronald Inglehart, "Value Priorities and Socioeconomic Change," in *Political Action: Mass Participation in Five Western Democracies*, ed. Samuel H. Barnes and Max Kaase (Beverly Hills, Calif.: Sage, 1979), 305-42; Ronald Inglehart, *Culture Shift in Advanced Industrial Society* (Princeton, N.J.: Princeton University Press, 1990); Paul R. Abramson and Ronald Inglehart, *Values Change in Global Perspective* (Ann Arbor, Mich.: University of Michigan Press, 1995); Ronald Inglehart, *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies* (Princeton, N.J.: Princeton University Press, 1997); Ronald Inglehart, "Postmaterialist Values and the Shift from Survival to Self-expression Values," in *The Oxford Handbook of Political Behavior*, ed. Russell J. Dalton and Hans-Dieter Klingemann (Oxford: Oxford University Press, 2007), 223-39; Ronald Inglehart, "Changing Values among Western Publics from 1970 to 2006," *West European Politics* 31, nos. 1-2 (January-March 2008): 130-46.

⁴Paul R. Abramson, "Critiques and Counter-Critiques of the Postmaterialism Thesis: Thirty-four Years of Debate" (paper on eScholarship, Center for the Study of Democracy, the University of California, Irvine, April 2011), <http://escholarship.org/uc/item/3f72v9q4> (accessed February 1, 2012).

⁵World Values Survey Association, *World Values Survey, 1981-2008 Official Aggregate v.20090901*, Aggregate File Producer: ASEP/JDS, Madrid, <http://www.worldvaluessurvey.org>.

of political institutions on the two sides of the Taiwan Strait. China and Taiwan are considered to be most-similar cases for exploring Confucian culture and history; while they have different levels of economic development, their major disjuncture lies in their political systems.⁶

In this paper, we first review the theory of postmaterialism and highlight some deviant cases with possible explanations. Second, a model adapted from Inglehart's subjective values and objective problems hypotheses is proposed to explain people's support for environmental protection. Third, a brief survey of economic development, environmental health conditions, data, and variables is presented. Fourth, macro-level description and two multivariable regression models are used to identify the demographic origins of postmaterialism and its effect on support for environmental protection. Finally, the conclusion underlines empirical findings and their significance for current theories.

A Brief Survey of Postmaterialism and Beyond

Borrowing from Maslow's needs hierarchy, Inglehart uses two hypotheses to explain value changes in advanced industrial societies:

1. The Scarcity Hypothesis. An individual's priorities reflect the socioeconomic environment: one places the greatest subjective value on those things that are in relatively short supply.
2. The Socialization Hypothesis. The relationship between material conditions and value priorities is not one of immediate adjustment: to a large extent, one's basic values reflect the conditions that prevailed during one's pre-adult years and these values change mainly through intergenerational population replacement.⁷

The first hypothesis emphasizes the periodic stimulation of economic prosperity. In this regard, when the economy declines, more people prior-

⁶Tianjian Shi, "Cultural Values and Political Trust: A Comparison of the People's Republic of China and Taiwan," *Comparative Politics* 33, no. 4 (July 2001): 401-19.

⁷Inglehart, *Culture Shift*, 68.

itize material needs, but when prosperity increases, larger numbers place more value on nonmaterial issues. The second hypothesis emphasizes the consistent effect of past experiences and memories of people's formative years on contemporary values.

These two hypotheses are combined here to highlight the rise of postmaterialism. In the short term, levels of postmaterialism are expected to change with the ebb and flow of economic growth. In the long run, however, the emergence of a younger generation with higher incomes and better education is expected to lead to the rise of postmaterialism. Such a rise is evident not only in Western European countries and the United States, but also on other continents.⁸

More evidence to support the two hypotheses is presented in the literature. For instance, countries with high levels of economic development tend to have high proportions of postmaterialists, and countries experiencing rapid economic growth tend to show appreciable intergenerational differences.⁹ At the individual level, people who are younger, well-educated, middle class, and who have higher incomes are assumed to be more concerned with postmaterialist issues such as human rights and environmental protection.¹⁰

Many different measures are used to gauge postmaterialism in various surveys. In 1970, a survey sponsored by the European Community Information Service used a set of four goals to test the existence of postmaterialism in six European countries: "to maintain order in the nation," "to give people more say in the decisions of the government," "to fight rising prices," and "to protect freedom of speech." The first and third

⁸Abramson and Inglehart, *Values Change in Global Perspective*; Inglehart, *Modernization and Postmodernization*, 108-59; Inglehart, "Postmaterialist Values"; Inglehart, "Changing Values among Western Publics."

⁹Paul R. Abramson, and Ronald Inglehart, "Education, Security, and Postmaterialism: A Comment on Duch and Taylor's 'Postmaterialism and the Economic Condition'," *American Journal of Political Science* 38, no. 3 (August 1994): 797-814; Inglehart, *Modernization and Postmodernization*, 131; Ronald Inglehart and Paul R. Abramson, "Economic Security and Value Change," *American Political Science Review* 88, no. 2 (August 1994): 336-54.

¹⁰Inglehart, *The Silent Revolution*, 21-98; Inglehart, *Culture Shift*, 162-76.

items are broadly materialist while the second and fourth reflect a postmaterialist value orientation.¹¹ In the 1973 European Community Survey and the 1990-91 WVS, eight questions were added to construct a twelve-item battery that is more valid and less sensitive to short-term economic inflation than the four-choice index (see appendix 1). Respondents were asked to select from three groups of four items. The more “postmaterialist” items respondents selected, the more they were likely to be labeled as postmaterialists. Among the twelve items, six were materialist, including sustenance and safety needs. The remaining six were postmaterialist, indicating a need for esteem, intellectual curiosity, and a desire for aesthetic satisfaction.¹² However, “try to make our cities and countryside more beautiful” was deleted from the battery because empirical results revealed it to be difficult to categorize as either materialist or postmaterialist.¹³

As Inglehart says, since postmaterialists have more psychic energy to deal with political affairs and are less worried about physical deprivation, they are more critical of elite-dominated political systems and more likely to support unconventional movements than materialists. These new social movements include environmental protection, feminism, anti-nuclear movements, and peace campaigns.¹⁴

Despite the fact that the concept of postmaterialism is widely cited in studies of political culture and values, more scholars have questioned whether it oversimplifies real situations.¹⁵ Some scholars question the internal validity of the postmaterialist index.¹⁶ Some emphasize that

¹¹Inglehart, “The Silent Revolution in Europe.”

¹²Inglehart, *Culture Shift*; Abramson and Inglehart, *Values Change in Global Perspective*.

¹³Ronald Inglehart and Paul R. Abramson, “Measuring Postmaterialism,” *American Political Science Review* 93, no. 3 (September 1999): 665-77.

¹⁴Inglehart, *The Silent Revolution*; Ronald Inglehart, “Post-Materialism in an Environment of Insecurity,” *American Political Science Review* 75, no. 4 (December 1981): 880-900; Inglehart, *Culture Shift*.

¹⁵A list of critiques can be found in Abramson, “Critiques and Counter-Critiques of the Postmaterialism Thesis.”

¹⁶Ronald Inglehart and Scott C. Flanagan, “Value Change in Industrial Society,” *American Political Science Review* 81, no. 4 (December 1987): 1303-19; Randall MacIntosh, “Global Attitude Measurement: An Assessment of the World Values Survey Postmaterialism

people's values are more likely to change with unemployment than with price inflation, and they argue that there is no evidence for a long-term shift away from materialism toward postmaterialism.¹⁷ Some analysts suggest that postmaterialism/materialism may not be a valid indicator of an individual's social and political attitudes.¹⁸ Others reject the way in which the socialization hypothesis suggests the consistent effect of early experiences.¹⁹

Among these debates, Duch and Taylor ask why countries in Eastern Europe and the former Soviet Union exhibited relatively high levels of postmaterialism in the 1990s, despite their history of poor economic performance.²⁰ Drawing on their empirical studies, these scholars claim that the well-established education system of the socialist era and rapid economic growth after democratization accounted for the rise of postmaterialist values in Eastern Europe and the former Soviet Union. They

Scale," *American Sociological Review* 63, no. 3 (June 1998): 452-64; Darren W. Davis, Kathleen M. Dowley, and Brian D. Silver, "Postmaterialism in World Societies: Is It Really a Value Dimension?" *American Journal of Political Science* 43, no. 3 (July 1999): 935-62.

¹⁷Harold D. Clarke and Nitish Dutt, "Measuring Value Change in Western Industrialized Societies: The Impact of Unemployment," *American Political Science Review* 85, no. 3 (September 1991): 905-20; Harold D. Clarke, Nitish Dutt, and Jonathan Rapkin, "Conversations in Context: The (Mis)Measurement of Value Change in Advanced Industrial Societies," *Political Behavior* 19, no. 1 (March 1997): 19-40; Harold D. Clarke et al., "The Effect of Economic Priorities on the Measurement of Value Change: New Experimental Evidence," *American Political Science Review* 93, no. 3 (September 1999): 637-47; Inglehart and Abramson, "Measuring Postmaterialism."

¹⁸Darren W. Davis and Christian Davenport, "Assessing the Validity of the Postmaterialism Index," *American Political Science Review* 93, no. 3 (September 1999): 649-64; Darren W. Davis, "Individual Level Examination of Postmaterialism in the U.S.: Political Tolerance, Racial Attitudes, Environmentalism, and Participatory Norms," *Political Research Quarterly* 53, no. 3 (September 2000): 455-75; Inglehart and Abramson, "Measuring Postmaterialism."

¹⁹Raymond M. Duch and Michael A. Taylor, "Postmaterialism and the Economic Condition," *American Journal of Political Science* 37, no. 3 (August 1993): 747-77; Raymond M. Duch and Michael A. Taylor, "A Reply to Abramson and Inglehart's 'Education, Security, and Postmaterialism'," *American Journal of Political Science* 38, no. 3 (August 1994): 815-24.

²⁰Duch and Taylor, "Postmaterialism and the Economic Condition"; James L. Gibson and Raymond M. Duch, "Postmaterialism and the Emerging Soviet Democracy," *Political Research Quarterly* 47, no. 1 (March 1994): 5-39.

therefore conclude that “education and economic conditions at the time of the survey are much more important explanations for variations in the postmaterialist measure.”²¹ According to these authors, economic security is not related to postmaterialism at the country level, and they challenge the validity of the socialization hypothesis.

Abramson and Inglehart respond to Duch and Taylor’s questions with three main points. First, it is a subjective sense of economic security, rather than objective economic conditions, that breeds postmaterialist values. Second, they concur that education is critical in measuring levels of post-materialist values, and that a well-established education system spread an ideology of stoicism that encouraged the denunciation of the capitalist spirit in Communist countries. Third, they argue that education should be associated with parental income during respondents’ formative years.²²

Far from suggesting a linear association between economic development and political values, these debates imply that political institutions may contribute to changes in values, although *how* they contribute remains equivocal. Some studies indicate that people feel satisfied with social welfare and have a high subjective sense of security under a socialist system, so older cohorts and the better-educated may exhibit higher levels of postmaterialism because they are instilled with a stoical spirit.²³ Others argue that authoritarian institutions might suppress self-expression and nourish public support for the government. For example, Wright suggests that belief in the Chinese Communist Party among private entrepreneurs stems from the improvement in their material conditions brought about by the party’s economic reforms, as well as their economic dependence on the ruling elite.²⁴ Therefore, the institutional effects of authoritarian

²¹Duch and Taylor, “Postmaterialism and the Economic Condition,” 747.

²²Inglehart and Abramson, “Economic Security and Value Change.”

²³Ioannis Kyvelidis, “Measuring Post-materialism in Post-Socialist Societies,” *European Integration Online Papers* 5, no. 2 (March 2001), <http://eiop.or.at/eiop/pdf/2001-002.pdf> (accessed February 1, 2012).

²⁴Teresa Wright, *Accepting Authoritarianism: State-Society Relations in China’s Reform Era* (Stanford: Stanford University Press, 2010).

regimes are worthy of further exploration.

With its particularly low level of postmaterialism, China is often cited as too extreme a case to verify the theory of modernization.²⁵ Nevertheless, a recent study shows that in 1995, China had a higher proportion of postmaterialists than did the newly industrialized economies of East Asia such as Taiwan or South Korea.²⁶ Given that China's real GDP lagged far behind that of Taiwan and South Korea in the 1990s, it would seem that Inglehart's hypotheses about economic development and postmaterialism do not hold water. Aware that few studies have tried to delve into the origins of and trends in value change in dissimilar political institutions, we will compare the distribution and demographic origins of postmaterialism in China and Taiwan using new data from 2005 to 2007.

Following the theory of postmaterialism, we hypothesize that the Taiwanese are more willing to embrace postmaterialism than the Chinese because of the different levels of economic development on the two sides of the Taiwan Strait. Furthermore, the younger generation, the well-educated, the middle class, and people with higher incomes are assumed to be more likely to prioritize postmaterialist issues, both in China and in Taiwan.

The Relationship between Postmaterialism and Environmental Protection

Some scholars are skeptical about postmaterialism as a valid predictor of other political values and behaviors. Davis and Davenport's research demonstrates that the postmaterialism/materialism classification is related to only two among twenty-three political and social issues, namely, human rights and environmental protection.²⁷ Davis tests the relationship between postmaterialism and other political values at the individual level in the United States. His analysis reveals that postmaterialism is as-

²⁵Abramson and Inglehart, *Values Change in Global Perspective*, 123-37.

²⁶Inglehart, "Changing Values among Western Publics," 138.

²⁷Davis and Davenport, "Assessing the Validity of the Postmaterialism Index."

sociated with egalitarianism, political ideology, partisanship, and political efficacy, whereas there is no obvious relationship between postmaterialism and environmentalism.²⁸

Among these issues, the association of environmental protection and postmaterialism needs further discussion for three theoretical reasons. First, environmental protection is theoretically designated as an element of postmaterialism, but empirical studies show that environmentalism is difficult to classify as an element of either materialism or postmaterialism.²⁹ Therefore, it seems that postmaterialism and environmental protection represent different concepts, and their association is worthy of further exploration and elaboration. Second, as Inglehart says, postmaterialism theory still fails to explain the high levels of concern about the environment among people in developing countries. Inglehart proposes two possible explanations for the origins of this support for environmental protection, whereas scholars of global environmentalism argue that the connection between postmaterialism and environmentalism is spurious.³⁰ Third, in authoritarian China, many political issues remain unresolved, whereas in democratic Taiwan, some problems, such as lack of political engagement and social inequality, are not so severe. In these circumstances, do Chinese postmaterialists give the problem of environmental degradation, a relatively new political issue, the same priority as their counterparts in Taiwan? Or, being embedded in distinct institutional settings, do postmaterialists in China and Taiwan treat environmental protection as meriting different degrees of attention? We will elucidate these questions with reference to empirical data.

Inglehart proposes two possible explanations for the origins of support for environmental protection. His *subjective values* hypothesis

²⁸Davis, "Individual Level Examination of Postmaterialism in the U.S."

²⁹Abramson and Inglehart, *Values Change in Global Perspective*, 101-16; Inglehart, *Modernization and Postmodernization*, 108-30; Inglehart and Abramson, "Measuring Postmaterialism."

³⁰Ronald Inglehart, "Public Support for Environmental Protection: Objective Problem and Subjective Values in 43 Societies," *Political Science and Politics* 28, no. 1 (March 1995): 57-72.

features the association between postmaterialism and environmentalism. Having attained a degree of spiritual satisfaction, postmaterialists are more likely to be concerned about the nature of their surroundings. A large number of postmaterialists in advanced industrial societies give weight to environmental issues and support the struggle against environmental pollution. The *objective problems* hypothesis argues that materialists do care about environmental protection when they suffer serious pollution near to home. This follows the logic of stimulus and response, and emphasizes people's concern with material interests. This situation mostly occurs in developing countries where environmental problems are grave. These two hypotheses are definitive in explaining high levels of support for environmental protection in certain countries.³¹

Brechin and Kempton introduce a competing concept—global environmentalism. They believe the rise of public environmental concern is a global phenomenon generated by multiple factors, rather than a single factor spawned by postmaterialism.³² Dunlap and Mertig agree that postmaterialist values theory is inadequate for explaining environmental concern. Employing the WVS, they find that national wealth has a stronger impact on environmental concern than postmaterialist values, and three among seven measures of environmental concern are negatively associated with national wealth and postmaterialism. They conclude that, “the fact that local environmental degradation tends to be worse in poorer nations accounts for the fact that their citizens—despite holding primarily materialist value orientations—are often more concerned about environ-

³¹Ibid. See also Quentin Kidd and Aie-Rie Lee, “Postmaterialist Values and the Environment: A Critique and Reappraisal,” *Social Science Quarterly* 78, no. 1 (March 1997): 1-15; Paul R. Abramson, “Postmaterialism and Environmentalism: A Comment on an Analysis and a Reappraisal,” *Social Science Quarterly* 78, no. 1 (March 1997): 21-23.

³²Steven R. Brechin and Willett Kempton, “Global Environmentalism: A Challenge to the Postmaterialism Thesis?” *Social Science Quarterly* 75, no. 2 (June 1994): 245-69; Steven R. Brechin and Willett Kempton, “Beyond Postmaterialist Values: National versus Individual Explanations of Global Environmentalism,” *Social Science Quarterly* 78, no. 1 (March 1997): 16-20; Steven R. Brechin, “Objective Problems, Subjective Values, and Global Environmentalism: Evaluating the Postmaterialist Argument and Challenging a New Explanation,” *Social Science Quarterly* 80, no. 4 (December 1999): 793-809.

mental quality than are their counterparts in wealthy nations.”³³

Recent studies used multivariable models to present a variety of opinions on the association between postmaterialism and attitudes toward the environment. Kemmelmeier et al. find no connection between postmaterialism and environmentalism, either in individual- or aggregate-level analyses.³⁴ Nevertheless, Gelissen is able to prove Inglehart’s subjective values hypothesis using multilevel analyses. In his study, individual-level variables, including postmaterialism, education, age, and environmental involvement all have an effect on environmental concern. Country-level variables—GDP, GDP growth, and postmaterialist value orientation—are also related to people’s support for environmental protection in fifty countries.³⁵

In contrast to previous studies, we suggest that Inglehart’s objective problems hypothesis should be revised to include more precise measurements of environmental pollution at the local level. Country-level environmental pollution indices cannot measure local environmental contamination accurately, and a detailed description of the acuity of people’s environmental perception is imperative.³⁶ For this reason, we will add local environmental perception to our multivariable model of support for environmental protection.

Information use should be another critical explanatory factor in assessing levels of environmental concern, specifically the effect of cognitive mobilization. As Dalton says, the well-informed and better-educated should possess more skills and resources to deal with political affairs than

³³Riley E. Dunlap and Angela G. Mertig, “Global Environmental Concern: An Anomaly for Postmaterialism,” *Social Science Quarterly* 78, no. 1 (March 1997): 27; Riley E. Dunlap and Angela G. Mertig, “Global Concern for the Environment: Is Affluence a Prerequisite?” *Journal of Social Issues* 51, no. 4 (Winter 1995): 121-37.

³⁴Markus Kemmelmeier, Grzegorz Krol, and Young Hun Kim, “Values, Economics and Proenvironmental Attitudes in 22 Societies,” *Cross-Cultural Research* 36, no. 3 (August 2002): 256-85.

³⁵John Gelissen, “Explaining Popular Support for Environmental Protection: A Multilevel Analysis of 50 Nations,” *Environment and Behavior* 39, no. 3 (May 2007): 392-415.

³⁶Dunlap and Mertig, “Global Environmental Concern,” 27; Gelissen, “Explaining Popular Support for Environmental Protection.”

the less-educated, and therefore the former have more opportunities to become engaged and psychologically involved in politics.³⁷ This is particularly important in authoritarian regimes where the spread of information is severely restricted by the state. We believe that perceiving serious pollution in a community may not be incentive enough to make residents feel obligated to tackle environmental problems, whereas greater dissemination of information may bolster their desire to conserve their surroundings and devote themselves to environmental protection.

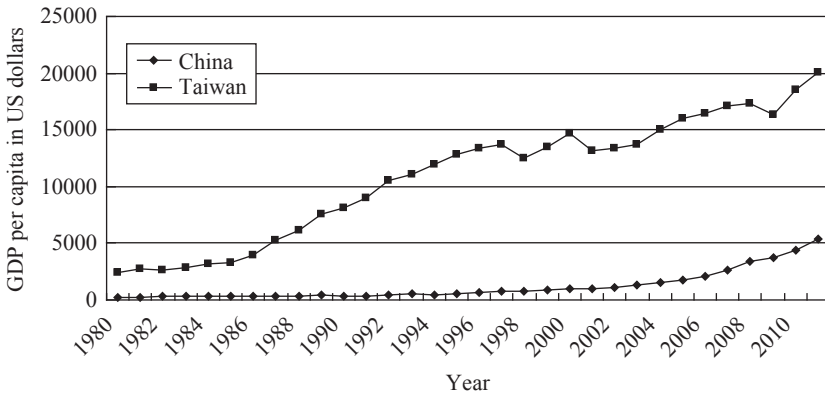
In sum, two hypotheses of environmentalism will be tested in our analysis: first, the *subjective values hypothesis*—that people with postmaterialist values tend to support environmental protection. Postmaterialists in democratic regimes are more likely to work to eliminate problems of environmental contamination. Second, a *revised objective problems hypothesis*—that residents are willing to fight environmental pollution because they have plentiful information resources and realize how serious a threat it is. This situation mostly occurs in authoritarian countries with severe environmental problems. The first hypothesis is exactly the same as Inglehart's, whereas the second hypothesis replaces the macro-level environmental pollution indices with information and local environmental perception to delineate objective environmental problems.

Economic Development and Environmental Health in China and Taiwan

Figure 1 shows the evolution of economic development in China and Taiwan as reflected in GDP per capita from 1980 to 2011. Average income in Taiwan in 1980 was US\$2,363, eleven times that of China (US\$205). Taiwan's per capita GDP was twenty-three times that of China in 1990, but after that, China's economy grew at an astonishing speed, with the average income climbing to over US\$1,000 in 2001. The annual growth rate of GDP in China has never fallen below 7 percent since 1991.

³⁷Russell J. Dalton, "Cognitive Mobilization and Partisan Dealignment in Advanced Industrial Democracies," *Journal of Politics* 46, no. 1 (February 1984): 264-84.

Figure 1
Income levels in China and Taiwan (1980-2011)



Source: World Economic Outlook Database, IMF.

Although the economic development gap between the two sides of the Strait has rapidly narrowed, in 2011, per capita income in China (US\$5,414) was still far lower than in Taiwan (US\$20,101) (see figure 1). According to Inglehart and Welzel's classification of five economic groups, Taiwan is a postindustrial democracy while China is a low-income society.³⁸ In addition, the International Monetary Fund (IMF) categorizes Taiwan as one of the "newly industrialized Asian economies" while China still belongs to "developing Asia," even though it surpassed Japan as the world's second-largest economy in 2010.³⁹

The problem of environmental pollution in Taiwan is not as serious as it is in China. The Pilot 2006 Environmental Performance Index—a composite index of current national environmental protection results released by Yale and Columbia universities—gave Taiwan 79.1 points out of 100, ranking it twenty-fourth out of 133 countries, while China had 56.2

³⁸Ronald Inglehart and Christian Welzel, *Modernization, Cultural Change and Democracy: The Human Development Sequence* (New York: Cambridge University Press, 2005), 108.

³⁹International Monetary Fund (IMF), *World Economic Outlook*, April 2012 edition, <http://www.imf.org/external/pubs/ft/weo/2012/01/weodata/index.aspx> (accessed July 23, 2012).

points and was ranked ninety-fourth. In its list of country performance by quintile, Taiwan is in the first quintile while China is placed in the fourth. More specifically, Taiwan received a higher score (47.4) than China (22.3) for air quality.⁴⁰

Data and Variables

We use the fifth wave WVS to establish the demographic characteristics of postmaterialists and to examine the association between postmaterialism and environmental protection. The Chinese survey was conducted by the Research Center for Contemporary China at Peking University in 2007 with 2,015 respondents. The survey in Taiwan, which had 1,227 respondents, was carried out by the Center for Survey Research at Academia Sinica in 2006.

There are three problems that need to be addressed before we employ the fifth WVS database. First, we recognize that concept equivalence and measurement equivalence are critical to the comparability of survey responses. Even though the WVS questionnaire was originally designed in English and translated into Chinese, the wording of the two sets of questionnaires differs slightly for Chinese and Taiwanese respondents. For example, on questions of subjective class identity and education the wording is notably different for China and Taiwan. These variables require restructuring, and we have done this as described below.

Second, the initiators of the WVS in China did two things in an effort to eliminate survey errors. Chinese respondents were sampled through stratified, multi-stage “probability proportional to size” (PPS), and the Global Positioning System (GPS) and Geographical Information System (GIS) Assisted Area Sampling were used to include considerable numbers of internal migrants who could not be traced through household

⁴⁰The Pilot 2006 Environmental Performance Index evaluated environmental vitality and ecosystem vitality performance by means of sixteen indicators, including urban particulates, indoor air pollution, and drinking water. See Daniel C. Esty et al., *Pilot 2006 Environmental Performance Index* (New Haven, Conn.: Yale Center for Environmental Law & Policy, 2006), http://sedac.ciesin.columbia.edu/repository/epi/data/2006EPI_Report_Full.pdf (accessed February 1, 2012).

lists. Even so, a sample of only 2,015 cannot represent the huge Chinese population of about 1.3 billion.

Third, a number of Chinese respondents answered “don’t know” or refused to answer questions. The problem of missing data may slightly reduce the validity of our research. Nevertheless, Ren’s study demonstrates that higher proportions of Chinese are willing to answer values-related questions, including on postmaterialism and environmental protection, than are willing to answer politics-related questions dealing with issues such as democracy and political confidence.⁴¹

Some may also argue that respondents try to conceal their true opinions or refuse to respond due to intimidation by officials. However, Shi and his colleague exclude the possibility of political fear, demonstrating that Chinese people express authentic opinions in survey data.⁴² Furthermore, an individual-level analysis reveals that females, the less-educated, and older respondents are more likely to fail to answer questions. Ren thus concludes that political apathy and lack of education, rather than fear of political retribution, are the main reasons why people give “don’t know” answers.⁴³ In this regard, we have confidence in the authenticity of responses, but the missing data are still a problem.

We have used a twelve-item (instead of a four-item) index to measure postmaterialism. The validity of this method of measurement has been widely demonstrated in forty countries.⁴⁴ As Inglehart and Abramson assert, “The reason the twelve-item index is more powerful than the original (four-item index) is that together the three sets of goals tap an underlying dimension and increase measurement validity. Again, this is the basic purpose of multi-item indicators and the significant improvement in

⁴¹Liyang Ren, “Surveying Public Opinion in Transitional China: an Examination of Survey Response” (Ph.D. dissertation, University of Pittsburgh, 2009), 81-83.

⁴²Xueyi Chen and Tianjian Shi, “Media Effects on Political Confidence and Trust in the People’s Republic of China in the Post-Tiananmen Period,” *East Asia* 19, no. 3 (Fall 2011): 95-96; Shi, “Cultural Values and Political Trust,” 405, 407.

⁴³Ren, “Surveying Public Opinion,” 84-93.

⁴⁴Abramson and Inglehart, *Values Change in Global Perspective*, 97-122.

accuracy of prediction provides powerful evidence of validity.”⁴⁵

There are three groups of four items, and within each group two items tap postmaterialism and two signal materialism. The items emphasizing materialist priorities are: “maintain order in the nation,” “fight rising prices,” “maintain a high rate of economic growth,” “make sure that this country has strong defense forces,” “maintain a stable economy,” and “fight crime.” The postmaterialist items are: “give people more say in the decisions of the government,” “protect freedom of speech,” “give people more say in how things are decided at work and in their community,” “move toward a friendlier, less-impersonal society,” “move toward a society where ideas count more than money,” and “try to make our cities and countryside more beautiful.” Respondents were asked to make their first and second choices from three groups of questions; a postmaterialist index counts the total number of respondents selecting postmaterialist items as first and second choices (see appendix 1). As mentioned above, “try to make our cities and countryside more beautiful” was deleted from the sum. Scores range from 0 to 5, where “0” signifies “materialist” and “5” signifies “postmaterialist.”⁴⁶

As to the association between demographic characteristics and postmaterialism, raw variables of family income and age are adopted. It is assumed that younger people and people with higher family incomes are more likely to embrace postmaterialism. In addition, males are coded 1 and females 0.

Questions concerning educational attainment differ between China and Taiwan. Chinese respondents are given six choices and Taiwanese thirteen. The main reason for the difference is that educational levels in Taiwan

⁴⁵Inglehart and Abramson, “Measuring Postmaterialism,” 672.

⁴⁶It should be noted that the WVS makes use of the ranking technique—instead of the rating method—to find out how respondents prioritize their postmaterialist/materialist goals. As Inglehart says, rankings are better than ratings for measuring the value of postmaterialism. In this manner, the four items in each group that are used to measure postmaterialist and materialist values are correlated, instead of independent. Please see Abramson and Inglehart, *Values Change in Global Perspective*, 119-212; Inglehart, *Modernization and Postmodernization*, 114-16.

have been further divided into complete and incomplete types. We have recoded the variable of educational attainment into three educational levels: college education and above, secondary school, and primary school. In the regression model, college education and above, and secondary school, are both coded 1. Primary school is coded 0 as the baseline group.

The questionnaires for China and Taiwan offer different sets of selections for class identity. Chinese respondents may choose between high, middle-high, middle, middle-low, and low class levels, while Taiwanese respondents select from high, middle-high, middle-low, labor, and low classes. When collating their rankings, we recode the variable of subjective class identity into three levels: low, middle, and high. Class identity should depend on subjective consciousness, not an objective socioeconomic variable. There are two schools of thought where the origins of class identity are concerned. The first school focuses on family conditions and parents' socioeconomic status during the pre-adult period,⁴⁷ while the second emphasizes the impact of an individual's current occupation.⁴⁸ We treat class identity as a function of parents' socioeconomic status during the formative period and an individual's occupation in adulthood.

Two questions are selected to show support for environmental protection:

1. "If I really believed that the money I spent would be used to prevent pollution, I would be willing to contribute some of my income to fund these efforts."
2. "If a tax hike were used to fight pollution, I would agree to pay more tax."

To test two hypotheses of environmental protection, Inglehart integrates four questions to construct an environmental protection index.⁴⁹

⁴⁷Inglehart, *Culture Shift in Advanced Industrial Society*, 104-29, 162-76; Inglehart and Abramson, "Measuring Postmaterialism," 672-73.

⁴⁸Mary R. Jackman, "The Subjective Meaning of Social Class Identification in the United States," *Public Opinion Quarterly* 43, no. 4 (Winter 1979): 443-62.

⁴⁹Inglehart, "Public Support for Environmental Protection."

In the 2005-2007 WVS questionnaires, three of these questions are retained.⁵⁰ However, a reliability test indicates that the question, “reducing pollution is the government’s problem; I shouldn’t have to pay for it” should not be combined into the index.⁵¹ Therefore, two questions are integrated into a four-point index of support for environmental protection. The score range is 1 to 4, where “1” means “no support at all” and “4” means “a great deal of support.”

As to people’s perceptions of local environmental pollution, we select the following question:

“Many communities are facing environmental problems. In terms of your own community, are the following problems very serious, somewhat serious, not very serious, or not serious at all?”

Three kinds of environmental pollution are indicated: poor water quality, poor air quality, and poor sewerage and sanitation. Accordingly, a four-level scale of local environmental perception is constructed where 1 indicates “not serious at all” and 4 indicates “very serious.”

We use the following question to measure frequency of information use:

“People learn about important issues in the country and the world in different ways. During the last week, which of the following have you utilized?”

Respondents were asked if they used any of seven information resources in the previous week: daily newspapers, news broadcasts on radio or TV, printed magazines, in-depth reports on TV or radio, books, Internet or email, and talk with friends or colleagues. Frequency of usage is

⁵⁰The question “Protecting the environment and fighting pollution is less urgent than often suggested” is no longer used.

⁵¹Dalton also indicates the same result. Please see Russell J. Dalton, *Citizen Politics* (Washington, D.C.: CQ Press, 2006), 112-14.

counted on a scale of information use: “0” indicates “never” used these resources, and “7” indicates used them “all.”

Finally, China is assigned a score of “1” and Taiwan a score of “0” to reflect the distinctive institutional effects of the two political systems. As we mentioned before, China and Taiwan can be addressed as most-similar cases for exploring Confucian culture and history; with the exception of their levels of economic development, their major disjuncture exists in their political systems—authoritarianism versus democracy. Since we have controlled for family income, the coding of China/Taiwan can be addressed as a variable of political institution. The variable China/Taiwan will be put into a merged model using combined survey data from both.⁵²

Empirical Results

A number of scholars question whether a single postmaterialist dimension does actually exist. Therefore, we conduct a factor analysis to confirm the existence of a materialist/postmaterialist dimension in Chinese and Taiwanese value systems. The methodology derives from Inglehart’s work since three sets of ranked preference questions are used to measure levels of postmaterialism in the fifth WVS. Twelve items of materialism and postmaterialism are recoded as separate variables, with codes ranging from “3” to “1.” When a given item is ranked as the most important, it is coded “3,” the next most important is coded “2,” and if the item is ranked as unimportant, it is coded “1.” Then, a first principal component analysis is performed to test the validity of combining the items into a dimension.⁵³

It should be noted that this methodological artifact is likely to give rise to the problem of “ipsativity.” That is, according to Abramson and Inglehart, “once the first choice is made, there are only three remaining possibilities, which tend to generate negative correlations among the

⁵²Shi has adopted the same method in his comparative study of China and Taiwan. See: Shi, “Cultural Values and Political Trust.”

⁵³Inglehart, *Modernization and Postmodernization*, 101; Inglehart and Abramson, “Measuring Postmaterialism.”

three remaining items.”⁵⁴ Specifically, each item in a group of four items would have a negative correlation of about -0.33 with each of the other items. Therefore, the strength of the factor loadings would be systematically reduced in the first principal component. For this reason, Inglehart and his colleague claim that the dimension of postmaterialism still retains its validity even though factor loadings of those survey items are often lower than the conventional cutoff values.⁵⁵

The materialism/postmaterialism dimension is primarily verified in table 1, even if the problem of “ipsativity” exists. Mean loadings among twelve postmaterialist/materialist items are 0.392 in China and 0.420 in Taiwan, close to the mean loading (0.40) that Bean and Papadakis obtain.⁵⁶ In the case of China, the mean loading value of twelve items (0.392) performs better than the value (0.38) of these items in the 1990-1991 WVS.⁵⁷ Moreover, all the items we use to compile the postmaterialist index have loading values above 0.30. Therefore, we have confidence in the validity of a postmaterialist/materialist dimension.

Specifically, eleven of the twelve items reflect the conventional wisdom—six with postmaterialist polarity and five with materialist polarity. The only deviant is “strong defense forces.” Specifically, in the case of Taiwan the value structure is exactly the same as the theory indicates. In China, however, people are more likely to emphasize “strong defense forces” as being similar to postmaterialist values such as “less-impersonal society,” “more say on the job,” and “more say in government.” After the dimension’s validity is confirmed, we can use five items of postmaterialism to compile the postmaterialist index, including “more say on the job,”

⁵⁴Paul R. Abramson and Ronald Inglehart, “Comment: Formative Security, Education, and Postmaterialism: A Response to Davis,” *Public Opinion Quarterly* 60 (Fall 1996): 451.

⁵⁵Inglehart, *Modernization and Postmodernization*, 108-22; Inglehart and Abramson, “Measuring Postmaterialism”; Clive Bean and Elim Papadakis, “Polarized Priorities or Flexible Alternatives? Dimensionality in Inglehart’s Materialism-Postmaterialism Scale,” *International Journal of Public Opinion Research* 6, no. 3 (Fall 1994): 264-88.

⁵⁶Bean and Papadakis, “Polarized Priorities or Flexible Alternatives”; Inglehart, *Modernization and Postmodernization*, 117-22.

⁵⁷Abramson and Inglehart, *Values Change in Global Perspective*, 110.

“more say in government,” “freedom of speech,” “less-impersonal society,” and “ideas count.” We should reiterate that “try to make our cities and countryside more beautiful” is excluded from the index.

These findings matter in several ways. First, the value system is not stagnant, it changes with the environment. Using 1990-1991 WVS data, previous research basically verified the materialism and postmaterialism typology in the Chinese value system, whereas a paradoxical item of “economic growth” fell into the postmaterialist cluster. Inglehart and Abramson pointed out that the deviation might be concerned with a desire among Chinese to release the economy from state control.⁵⁸ After about thirty years of economic reform, we find that “economic growth” once again falls within the materialist polarity, probably because the Chinese economy has attained astonishing GDP growth rates, generally more than 8 percent every year after 2000.

Second, it is striking to find that Chinese respondents have valued “strong defense forces” as a kind of postmaterialist belief. The success of patriotic education and Communist ideology may be one explanation for this outcome. Ordinary citizens are continually educated about the miseries of Chinese history. Many Chinese thus favor maintaining a strong defense force to resist foreign invasion as a nonmaterialist goal after China has achieved basic economic success.

Third, the only item concerning environmental protection—“more-beautiful cities”—is close to neutral polarity (loading= 0.084) in the case of China (see table 1). Respondents have difficulty identifying environmental protection as a postmaterialist or materialist issue. Inglehart argues that people in less-urbanized countries may not embrace anti-industrial attitudes as much as those in developed countries do because the former have not experienced the damage of industrialization.⁵⁹ Moreover, some believe that economic development can help preserve the natural

⁵⁸Inglehart, *Culture Shift in Advanced Industrial Society*, 130-61; Abramson and Inglehart, *Values Change in Global Perspective*, 97-122; Inglehart, *Modernization and Postmodernization*, 108-30.

⁵⁹Ronald Inglehart, *The Silent Revolution*, 39-53.

Table 1

The Materialist/Postmaterialist Dimension in China and Taiwan (Loadings on First Principal Component in Factor Analysis)

	China	Taiwan
More Say on the Job	0.522	0.354
More-beautiful Cities	0.084	0.539
More Say in Government	0.573	0.353
Freedom of Speech	0.397	0.336
Less-impersonal Society	0.588	0.610
Ideas Count More than Money	0.309	0.486
Economic Growth	-0.593	-0.552
Strong Defense Forces*	0.136	-0.260
Maintain Order	-0.382	-0.162
Fight Rising Prices	-0.396	-0.401
Maintain Stable Economy	-0.548	-0.595
Fight against Crime	-0.177	-0.387
Eigenvalues	2.213	2.314
Variance explained (%)	18.441	19.286

Notes: 1. According to Inglehart's typology, items with postmaterialist polarity are in italics; items with materialist polarity are in boldface type. 2. * "Strong Defense Forces" belongs to paradoxical polarities in China.

environment. Hence, we should exclude "more-beautiful cities" from the construction of a postmaterialism index, as previous studies did. This can also eliminate the possibility of tautology when we try to test the association between postmaterialism and environmentalism.

After affirming the validity of the postmaterialist dimension, we continue to compare levels of postmaterialism in China and Taiwan. The data in table 2 reveal a surprising result: the level of postmaterialism in China is close to that in Taiwan. On a six-point index with scores ranging from a low of 0 to a high of 5, China scores 1.30, compared to Taiwan's score of 1.22; nevertheless, a t-test reveals the variation is not statistically significant.

This finding contradicts the general perception that a smaller proportion of the Chinese population is postmaterialist, as China's economy is less developed than Taiwan's, as figure 1 reveals. However, per capita

Table 2
Levels of Postmaterialism in China and Taiwan

	N	Mean	(S. D.)	<i>t</i> -test
China	1,398	1.30	(1.10)	<i>t</i> value = 1.953
Taiwan	1,218	1.22	(1.02)	<i>p</i> = 0.051

Note: The score is 0 to 5, where “0” indicates “materialism” and “5” indicates “post-materialism.”

income might not be a good indicator of the evolution of postmaterialism, and other factors should be taken into consideration such as economic growth and political institutions.⁶⁰ Otherwise, it is worth noting that both China and Taiwan display much lower levels of postmaterialism than the average mean (1.99) of the five-wave WVS. Considering that a similar trend appears in South Korea (1.89), we believe that people in East Asia share an emphasis on material security.

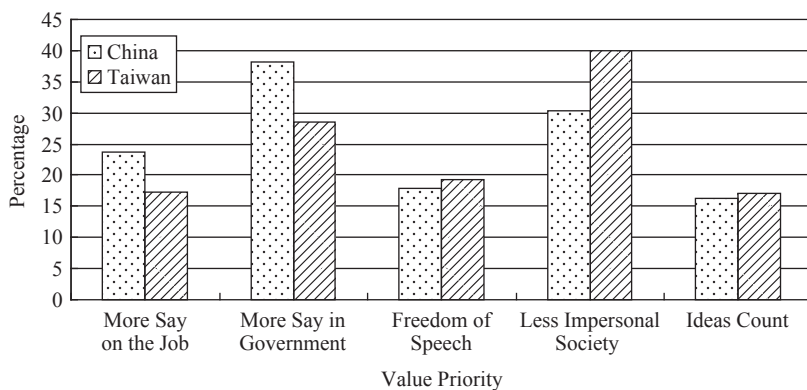
After examining answers to individual questions, we confirm that the empirical results reflect institutional variations in these two areas. As figure 2 shows, higher-order issues of concern to Taiwanese include: “protect freedom of speech,” “move toward a friendlier, less-impersonal society,” and “move toward a society where ideas count more than money.” The Chinese express particular interest in two items: “more say on the job and in the community” and “more say in government.”

This result reveals that the effect of economic development on personal values has been mediated by regime type. On the one hand, the economic upheavals that occurred at the beginning of the twenty-first century may have undermined feelings of physical security in Taiwan, but Taiwanese still have higher scores compared to Chinese for individual freedom, intellectual ideas, and collective belonging.⁶¹ On the other hand, stable GDP growth rates above 7 percent since the 1990s have given the

⁶⁰Inglehart, “Changing Values among Western Publics from 1970 to 2006,” 132-33.

⁶¹During 2000 to 2007, the lowest GDP growth rate in Taiwan was -1.65% in 2001, and the highest was 6.19 in 2004. See International Monetary Fund, *World Economic Outlook*.

Figure 2
Distributions of Value Priorities



Note: First-order and second-order choices are combined.

Chinese a sense of material security. Perhaps more important, however, are restrictions on autonomous civic engagement in China which make the Chinese more eager for self-expression and political involvement under authoritarianism.

The empirical results echo previous studies indicating that two cultural matrices shaped by distinct political systems exist on either side of the Taiwan Strait. Traditional culture underscored by an authoritarian government still dominates the Chinese value system. Political order and a hierarchical relationship between the population and the elite are particularly emphasized.⁶² Leaders are expected to be imbued with “morality” and to deliver good governance to the people. The public may exercise their rights of political participation as permitted by the government, but citizens are reluctant to behave in ways that might endanger social stability. In Taiwan, people embrace a liberal-democratic ethos shaped by democracy, featuring political tolerance and human rights. Since democracy

⁶²Hsin-Chi Kuan and Siu-Kai Lau, “Traditional Orientations and Political Participation in Three Chinese Societies,” *Journal of Contemporary China* 11, no. 31 (May 2002): 297-318.

offers various channels for the public to make its voice heard, Taiwanese may not feel particularly shortchanged in terms of political participation.⁶³

In this regard, the Chinese prefer to convey their opinions to leaders by highlighting “more say on the job and in the community” and “more say in government,” but beyond those, they may not strive for human rights and other postmaterialist values. For their part, Taiwanese may embrace such postmaterialist beliefs as “freedom of speech,” “less-impersonal society,” and “ideas count more than money,” but they may not pay much attention to political participation, which has been basically secured by democracy.

We further carry out a multivariate analysis to test the association between personal characteristics and postmaterialism. The three multiple regression models—one for China, one for Taiwan, and a model merging the survey data of the two societies—are presented in table 3. In China, younger people, the better-educated, and people who perceive themselves as middle class are more likely to embrace postmaterialism. In Taiwan, this orientation is more likely to occur among males, younger people, and people with a college education and above. In the merged model, gender, age, and education are three explanatory variables of individual values on both sides of the Strait. Furthermore, Chinese who have a college education and above, and who perceive themselves as middle class, are more likely to embrace postmaterialism than those who have similar attributes in Taiwan.

Age and education are thus confirmed as critical explanations for variations in the postmaterialist measure of China and Taiwan. Education is the most powerful factor contributing to the rise of postmaterialism, meaning that desire for spiritual satisfaction is more prevalent among people who are highly educated. Younger respondents are more likely to emphasize postmaterialism because they tend to enjoy economic prosperity and a stable society. Furthermore, gender has an effect on postmaterialism in the

⁶³Tianjian Shi and Jie Lu, “The Shadow of Confucianism,” *Journal of Democracy* 21, no. 4 (October 2010): 126; Shi, “Cultural Values and Political Trust.”

Table 3
Multiple Regression Analysis Model of Postmaterialist Values

	China		Taiwan		Merged Model	
	Coefficient	(S.E.)	Coefficient	(S.E.)	Coefficient	(S.E.)
Gender (Female = 0)						
Male	0.022	(0.064)	0.160	(0.058)**	0.089	(0.043)*
Age	-0.009	(0.003)***	-0.011	(0.002)***	-0.010	(0.002)***
Education (Primary school = 0)						
Secondary school	0.223	(0.071)**	0.121	(0.091)	0.190	(0.055)**
College education and above	0.651	(0.122)***	0.255	(0.106)*	0.342	(0.083)***
Family Income	-0.004	(0.020)	0.005	(0.019)	0.000	(0.014)
Class Identity (Low class = 0)						
Middle class	0.164	(0.073)*	-0.029	(0.073)	-0.060	(0.071)
High class	-0.143	(0.146)	0.065	(0.089)	-0.004	(0.076)
China					0.039	(0.061)
College education and above* China					0.271	(0.123)*
Middle class* China					0.239	(0.091)**
Constant	1.491	(0.151)***	1.446	(0.166)***	1.428	(0.119)***
Model Information						
N	1147		1209		2356	
Adj. R^2	0.059		0.062		0.061	
S.E.E.	1.063		0.984		1.023	

Note: ***: $p < 0.001$, **: $p < 0.01$, *: $p < 0.05$.

model for Taiwan and the merged model, whereas it is not influential in the model for China. Family income makes no difference to political values either in China or Taiwan because high income does not necessarily make people feel more secure. To sum up, these results reveal that demographic variables of the socialization hypothesis are more-powerful indicators than those of the scarcity hypothesis for individual-level analyses.

More important, institutions on both sides of the Strait, interacting with education and class perception, exhibit a distinct effect on postmaterialism. Compared to highly educated Taiwanese, Chinese with a college education or above show higher levels of postmaterialism. Moreover, Chinese who perceive themselves as middle class are more likely to embrace postmaterialism than middle-class Taiwanese. These findings seem to contradict general perceptions that authoritarian institutions suppress the rise of critical citizens; instead, the findings reveal that intellectuals and members of the middle class in China are eager to pursue something beyond material needs.

We can explain the effects of institutions by looking at Taiwan's experience during the authoritarian era. In his well-known article, Tun-Jen Cheng argues that a body of "critical citizens" composed of middle-class intellectuals emerged in Taiwan during the prosperous 1960s and 1970s. These middle class intellectuals were often disappointed by the limited scope of political reform in that era, and therefore sought more opportunities for political participation. By cooperating with the opposition and recruiting more citizens to their cause, they finally made possible the democratic transition of 1986.⁶⁴

Accordingly, we believe that middle class intellectuals in China may exhibit higher levels of postmaterialism than their counterparts in Taiwan on account of the structural deficiencies of authoritarian institutions. These intellectuals yearn to make their opinions known and have their interests recognized through the limited channels of political communica-

⁶⁴Tun-Jen Cheng, "Democratizing the Quasi-Leninist Regime in Taiwan," *World Politics* 41, no. 4 (July 1989): 471-99.

Table 4
Descriptive Statistics of Environmental Concern

	China			Taiwan			<i>t</i> -test
	N	Mean	(S.D.)	N	Mean	(S.D.)	
Support for Environmental Protection	1759	2.93	(0.62)	1225	2.81	(0.56)	<i>t</i> value = 5.16 <i>p</i> < 0.001
Local Environmental Perception	1965	2.26	(0.93)	1227	2.26	(0.76)	<i>t</i> value = 0.21 <i>p</i> = 0.836

Note: Support for environmental protection is a four-point scale where 1 indicates “no support at all” and 4 indicates “a great deal of support.” The scores for local environmental perception are 1 to 4, where 1 indicates “not serious at all” and 4 indicates “very serious.”

tion. In contrast, members of the middle class and the better-educated in Taiwan do not have such an urgent need to achieve postmaterialist goals. For this reason, we expect the Chinese government’s basis of legitimacy to gradually move away from economic achievement toward popular spiritual satisfaction. Postmaterialists are emerging and they may play a definitive role in determining the future of China.

Concerning the origins of support for environmental protection, table 4 indicates that Chinese citizens exhibit higher levels of support for environmental activities, although their perceptions of the problem of local environmental pollution are no stronger than those of Taiwanese. This result seems to contradict the hypothesized association between local environmental perceptions and support for environmental protection. Specifically, there are two questions that should be asked: First, given the extreme problem of environmental pollution in China, why do Chinese citizens not have stronger perceptions of environmental damage than do Taiwanese citizens? Second, why do the Chinese show higher levels of concern about environmental protection than the Taiwanese?

On the first issue, we point out that people may not perceive changes to their surroundings day-by-day and may lack the ability to evaluate levels of pollution, especially when they have lived in the same area for a long time. Therefore, as mentioned before, Inglehart’s connection between macro-level environmental pollution and public concern is oversimplified, and accurate variables should be proposed to evaluate people’s

sense of their surroundings. We assume that people will only realize the seriousness of the environmental threats they are facing when they have enough information and if massive crises occur.

For the second question, Brechin and Kempton suggest various types of behaviors concerned with environmental protection that are related to levels of national wealth—for example, citizens of advanced industrial countries are more likely to pay out of pocket for environmental protection, whereas people from poor economies prefer to take direct action.⁶⁵ Strikingly, our results reveal that Chinese citizens demonstrate higher levels of financial support for environmental activities than do Taiwanese. We think that this is because mass movements and civic organizations are tightly constrained in an authoritarian regime. Citizens may prefer to support public policies or pay taxes instead of taking action that may get them in trouble.⁶⁶ In a democratic country with a thriving civil society, however, people can take various kinds of action to support environmental protection; financial support is just one of them.

Multiple regression models of people's support for environmental protection are presented in table 5, controlling for demographic variables. In the case of China, the interaction of local environmental perception and information use is conducive to support for environmental protection. Only people who simultaneously receive information and perceive high levels of local environmental pollution demonstrate appreciably strong support for environmental protection. In the case of Taiwan, postmaterialism is an imperative explanatory variable for environmentalism. For the merged model, postmaterialism and the interaction between local environmental perception and information use are two crucial factors. Meanwhile, the effect of political institution is substantiated by the finding that Chinese postmaterialists are less likely to devote themselves to environmentalism than Taiwanese postmaterialists.

⁶⁵Brechin and Kempton, "Global Environmentalism."

⁶⁶Koon-Kwai Wong, "The Environmental Awareness of University Students in Beijing, China," *Journal of Contemporary China* 12, no. 36 (August 2003): 519-36.

Table 5
Multiple Regression Analysis Model of Environmental Protection

	China		Taiwan		Merged Model	
	Coefficient	(S.E.)	Coefficient	(S.E.)	Coefficient	(S.E.)
Gender (Female = 0)						
Male	0.006	(0.036)	0.071	(0.031)*	0.047	(0.023)*
Age	0.002	(0.001)	0.000	(0.001)	0.000	(0.001)
Education (Primary school = 0)						
Secondary school	-0.066	(0.042)	0.082	(0.050)	-0.017	(0.031)**
College education and above	0.033	(0.074)	0.187	(0.060)**	0.107	(0.043)*
Family Income	0.022	(0.011)*	0.058	(0.010)***	0.039	(0.007)***
Class Identity (Low class = 0)						
Middle class	0.089	(0.041)*	0.117	(0.038)**	0.097	(0.028)**
High class	0.263	(0.081)**	0.073	(0.047)	0.129	(0.040)**
Postmaterialism	0.013	(0.017)	0.049	(0.015)**	0.056	(0.016)***
Local Environmental Perception	-0.060	(0.036)	-0.031	(0.040)	-0.043	(0.026)
Media Use	-0.015	(0.027)	-0.010	(0.025)	-0.011	(0.018)
Media Use* Local Environmental Perception	0.024	(0.010)*	0.016	(0.010)	0.019	(0.007)**
China					0.296	(0.037)***
Postmaterialism* China					-0.054	(0.022)*
Constant	2.804	(0.127)***	2.260	(0.123)***	2.419	(0.089)***
Model Information						
N	1101		1208		2309	
Adj. R^2	0.052		0.145		0.106	
S.E.E.	0.578		0.517		0.549	

Note: ***: $p < 0.001$, **: $p < 0.01$, *: $p < 0.05$.

Accordingly, as we assumed, local environmental perception and information alone cannot inspire support for environmental protection. Postmaterialism and the interaction between local environmental perception and information use are both crucial for environmental protection. Meanwhile, two formulations appear under different institutional settings: in democratic Taiwan, people decide whether to support environmentalism based on personal values, whereas in authoritarian China, external factors such as information and local environmental perception jointly affect concern for the environment. Furthermore, Chinese postmaterialists are less likely to support environmentalism than Taiwanese postmaterialists. These findings verify the subjective values hypothesis in the case of Taiwan and the revised objective problems hypothesis for China.

We believe that the difference lies in divergent institutional environments. In a democratic and open society, citizens have recourse to a plethora of resources to support their concern for environmental protection, including personal experience and affiliation with civil organizations. Therefore, individual characteristics such as aspiration and capability determine whether the individual makes a financial contribution. Besides, since their political rights are basically secure in a democracy, Taiwanese postmaterialists can focus on new issues such as environmental protection. On the other hand, in an authoritarian and closed system, both information resources and local perceptions of environmental pollution play critical roles in mobilizing people's concern for the environment. Without these external impetuses, issues such as environmental pollution are less likely to attract the attention of Chinese postmaterialists.

Conclusion

This study employs the 2005-2007 WVS to analyze the origins of postmaterialism in China and Taiwan and to examine how it may affect people's support for environmental protection. Referring to debates on the validity of postmaterialist values, our factor analysis has primarily validated the presence of a postmaterialist dimension in East Asian belief

systems. The only paradox in this is support for “strong defense forces” in the case of China, a value with postmaterialist polarity.

Although China’s economic development lagged far behind that of Taiwan at the time the survey was conducted, one striking result of our study is that the level of postmaterialism in China is similar to that of Taiwan. For example, the Chinese express interest in such issues as “more say on the job and in the community” and “more say in government.” On the other hand, Taiwanese tend to be more concerned about “protecting freedom of speech,” “moving toward a friendlier, less-impersonal society,” and “moving toward a society where ideas count more than money.” This means that while rapid economic growth has given the Chinese a sense of material security to a certain degree, the main origin of postmaterialism is desire among citizens for self-expression and political engagement. Meanwhile, economic problems may have undermined feelings of physical security among the Taiwanese but they still have more faith in human rights, collective belonging, and intellectual ideas than the Chinese do. Two cultural matrices shaped by distinct political systems have appeared on either side of the Taiwan Strait.

Individual-level analyses demonstrate that age and education are the two best predictors of whether people prioritize postmaterialist issues in China and Taiwan. Chinese who are highly educated and who perceive themselves as middle class are more likely to embrace postmaterialist values than their counterparts in Taiwan. Above all, in contrast to previous studies, we find that a stratum of middle class intellectuals with a postmaterialist value orientation has started to emerge in China.

To underline the effects of postmaterialism, we further examine the relationship between it and support for environmental protection. While the Chinese show a higher degree of support for environmental protection, their perceptions of local environmental pollution are not appreciably sharper than those of the Taiwanese. Postmaterialism and the interaction between local environmental perception and information use are two crucial explanations for support for environmental protection. Moreover, Chinese postmaterialists are less likely to be supporters of environmentalism than Taiwanese postmaterialists, and this is due to differences in their

political institutions. We believe empirical evidence verifies a revised version of Inglehart's hypotheses: postmaterialists in Taiwan are willing to support environmental protection based on their *subjective values*, while the Chinese population is willing to make material sacrifices for environmentalism when they have ample *information* and perceive serious *environmental problems*.

Our findings can contribute to postmaterialist theory in six ways. First, the materialist/postmaterialist dimension is primarily validated for the East Asian value system. The only paradoxical item is "strong defense forces" which has postmaterialist polarity in the case of China. Second, according to the hypothesis, Taiwanese should be more willing to embrace postmaterialist values than the Chinese on account of Taiwan's higher level of economic development. However, our empirical study disproves this hypothesis and indicates that the level of postmaterialism in China is close to that of Taiwan. This may be because of their different political systems. Third, the empirical findings indicate that age and education are the two best predictors of individual postmaterialist orientation in both China and Taiwan. This means that the *socialization* hypothesis is more convincing than the *scarcity* hypothesis. Fourth, given the structural deficiencies of authoritarian institutions, middle-class intellectuals in China are more likely to emphasize postmaterialist issues than their counterparts in Taiwan. Fifth, we have verified the *subjective values* hypothesis in Taiwan, in that people with postmaterialist values tend to support environmental protection. Meanwhile, Taiwanese postmaterialists are more likely to support environmentalism than Chinese postmaterialists. Lastly, we confirm the *revised objective problems* hypothesis in China, according to which residents should be willing to fight environmental pollution when they have ample information and perceive serious environmental problems. The revised version includes a more precise definition of local environmental problems. Overall, in contrast to previous studies that overstate economic factors as indicators of personal values, this paper underlines the effect of political institutions in shaping cultural values.

Appendix 1

(PM = Postmaterialism; M = Materialism)

V69. People sometimes talk about what the aims of this country should be for the next ten years. On this card are listed some of the goals to which different people would give top priority. Would you please say which one of these you, yourself, consider the most important? (Code one answer only under “first choice”):

V70. And which would be the next most important? (Code one answer only under “second choice”)

A high level of economic growth (M)

Making sure this country has strong defense forces (M)

Seeing that people have more say about how things are done at their jobs and in their communities (PM)

Trying to make our cities and countryside more beautiful (PM)

V71. If you had to choose, which one of the things on this card would you say is the most important? (Code one answer only under “first choice”):

V72. And which would be the next most important? (Code one answer only under “second choice”):

Maintaining order in the nation (M)

Giving people more say in important government decisions (PM)

Fighting rising prices (M)

Protecting freedom of speech (PM)

V73. Here is another list. In your opinion, which one of these is the most important? (Code one answer only under “first choice”):

V74. And what would be the next most important? (Code one answer only under “second choice”):

A stable economy (M)

Progress toward a less impersonal and more humane society (PM)

Progress toward a society in which ideas count more than money (PM)

The fight against crime (M)

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