Racial/Ethnic Group Attitudes Toward Environmental Protection in California: Is “Environmentalism” Still a White Phenomenon?

MATTHEW WHITTAKER, UNIVERSITY OF IOWA
GARY M SEGURA, UNIVERSITY OF WASHINGTON
SHAUN BOWLER, UNIVERSITY OF CALIFORNIA, RIVERSIDE

One view of minority opinion on environmental issues suggests that minority voters are focused on less esoteric concerns such as education, jobs, and crime. An alternative argument is that minorities, many of whom live proximate to the sources of pollution and environmental degradation, are actually more concerned. Focusing here on Latinos, we argue that minority concern about environmental issues is endogenous to the nature of the issue and has changed over time. Specifically, we suggest that increasing environmental awareness among minorities has led Latinos to become more sensitive to environmental issues than their white counterparts over time, but that this difference is manifest only on issues of proximate concern to Latinos and not on more abstract environmental principles. Pooling Field Polls in California across a 21-year span, we model support for various pro-environment positions among Latino, African-American, and non-Hispanic white respondents. We find considerable empirical support for the dynamics of growing minority environmental concern among Latinos, but only weak evidence for a similar trend among African-Americans.

In 1991, with the help of grassroots organizations and national environmental organizations, the tiny, predominantly Latino town of Kettleman City, California, successfully challenged the placement of another hazardous waste incinerator in their community. The judge in the case found the townspeople had been unfairly excluded from participating in the decision-making process in the absence of a Spanish translation of the proceedings. Critics charged environmental racism; the low-income community’s language and cultural barrier made them an easy target for a big chemical company that made a habit of locating their plants in poor, minority neighborhoods (Kay, 1992).

Environmental protection became a top priority in the second half of the 1980s for social justice grassroots groups like those that helped in the Kettleman City fight, such as the Mothers of East Los Angeles and Concerned Citizens of South Central Los Angeles. Only a decade earlier, representatives of various African-American organizations were calling on their constituents to ignore calls for environmental protection, fearing environmental protection was a diversion that interfered with their civil rights agenda. This began to change with the growing realization that some of the worst pollution problems in the country, and many of the most polluting industries, were disproportionately located in poor or minority neighborhoods (United Church of Christ 1987; Labor/Community Strategy Center 1991). From these roots, the current environmental justice movement was born, and these civil rights groups saw that social and environmental protection could co-exist. What is less clear is how well the current message of environmental awareness, that pollution is no longer merely a ‘white issue,’ has reached non-white citizens.

Two theories have been used to explain racial and ethnic differences in attitudes towards environmental protection. Drawing on Maslow (1970), the hierarchy of needs theory suggested that poor or minority populations had more pressing day to day needs, and that concerns over extras like environmental protection were secondary. White or wealthy citizens were predicted to be more likely to take up the environmental cause. By contrast, environmental deprivation theory posited that concern is related primarily to exposure, that the more polluted the neighborhood, the more concerned the residents of that neighborhood (Lowe and Pinhey 1982; Tremblay and Dunlap 1978; Van Liere and Dunlap 1980). White or wealthy citizens, living in less polluted surroundings, would instead be concerned with distant or larger scale issues that could impact their lives down the road. Given that primarily poor and minority populations occupy many of the most environmentally impacted neighborhoods, these two theories have some contradictory predictions.

To address this question regarding the importance of environmental protection issues to minority populations, we pooled responses across twenty-one years of Field Polls taken in the state of California, spanning 1980 to 2000. Specifically, data were extracted concerning respondent opinions about various environmental problems. We suggest that analyses of these data will reveal that concern for the environment is not merely a ‘white’ phenomenon and that greater local awareness and activism has translated over time into a more environmentally aware and concerned minority population. However, we suspect that minority

NOTE: An earlier version of this article was presented as a paper at the Annual Meeting of the Western Political Science Association, Denver, March 27-30, 2003. It was the recipient of the 2004 Charles Redd Award for Best Paper on the Politics of the American West.

concern will be focused on the types of environmental problems that could be found at the community level and be less evident on other environmental issues.

**Literature Review**

Social science research has provided some predictive theories and a number of less theoretical hypotheses for understanding environmental concern in terms of demographics. Drawing on the pioneering work of Maslow (1970), the *hierarchy of needs* theory has informed a large part of the discussion over the development of the argument of post-materialism that has long provided a standard theoretical lens through which to understand issue positions on environmental matters especially overseas (Inglehart 1977; see Dalton 2002 for review). To be sure, the post-materialist perspective is not without its critics, some of them quite trenchant (see e.g. Clarke and Dutt 1991; Clarke et al 1999). Nevertheless, this line of theoretical reasoning has been both widely influential and also contains quite strong predictions concerning the likely attitudes, or more accurately, the likely non-attitudes, of minorities towards environmental issues. Given what we know about the sociodemographics of minority populations in terms of wealth and education, this line of reasoning suggests that minority populations should be among those least supportive of environmental concerns. Members of poor or minority populations have many pressing day to day basic material needs to be met and therefore less time and money available to devote to “luxuries,” such as esoteric concerns over environmental protection. The theory predicts that the poorer segments of the population would be less concerned than the richer elements of society about environmental protection, and, by extension, that non-whites would also be less concerned than whites about environmental protection.

The application of the theory to environmental politics in the late 1970s and early 1980s culminated in a series of works that sought to correlate a person's concern for protecting the environment with their racial identity or income level. Hershey and Hill's (1977-78) widely cited analysis of student opinion found a “concern gap” between white and African-American survey respondents. Whites were found to be significantly more concerned about protecting the environment than were African-Americans, even after controlling for a variety of socioeconomic factors. The concern gap was corroborated by other studies taking place in the late 1970s and early 1980s that applied the hierarchy of needs theory to questions about the environment (Douglas and Wildavsky 1983; Taylor 1982).  

By contrast, later work by Dunlap and Jones (1987), and Mohai (1990) used the results from a 1980 national survey (Fischer, et al. 1980) to study the opinions of African-Americans and whites on a range of environmental problems. They found little or no difference between the two groups on most issues. Work by Jones and Carter (1994) and Jones (1998) focused on a single trend variable, over a period of two decades, and found fluctuations in the level of concern for the environment between African-Americans and whites over the 1970s and 1980s. These fluctuations were not consistent across time and did not offer much support for a concern gap, since at times whites were significantly more concerned than African-Americans, while at other times, African-Americans were more concerned than whites. African-Americans generally placed a slightly higher level of importance than whites on improving the social environment, but the authors argued this was not indicative of a lack of concern for the physical environment among African-Americans. Newell and Green (1997) examined concern by interacting racial identity with income and education. While poor African-Americans were less environmentally concerned than their poor white counterparts, as income and education increased, the differences between these two groups disappeared. A later analysis, using the 1993 General Social Survey's environment module, revealed poor respondents and African-American respondents were actually more likely to be pro-environment (Uyeki and Holland, 2000).

Van Liere and Dunlap (1980) found ambiguous associations between income and environmental concern in their review of the relevant literature from the 1970s. They further proposed that any study regarding concern for environmental protection should break down the subject matter into the different types of environmental issues (e.g. air pollution, nuclear waste, etc.), rather than treat environmental protection as an umbrella category. Following this approach, Mohai and Bryant (1998) found differences between African-Americans and whites on issue-specific environmental concerns. The authors examined a Detroit area survey from 1990 and found African-Americans expressed significantly more concern for pollution and other neighborhood environmental issues, while whites expressed more concern for global level environmental problems, and on other environmental issues, little difference was detected. There was little evidence to suggest a general concern gap, but rather that the concern expressed by African-Americans and whites was focused on different environmental issues. Mohai (2003) compared this 1990 survey with a 2002 survey in the Detroit area. Once again, African-American concern remained on par with, or

---

1 Further research focused on the presence of an “action gap.” This work suggested that even those poor or minority groups expressing concern about protecting the environment were less able or less willing to translate concern into social or political activity than their white counterparts (e.g. Mohai 1985, 1990; Taylor 1989; see also Parker and McDonough 1999 for a contrast with a theory of subculture). Related work examining the attitudes of immigrants to the United States found that immigrants were also much less likely than native-born residents to act politically on their environmental concerns (Pfeffer and Stycos, 2002), despite otherwise engaging in environmentally friendly behavior (Hunter 2000; Pfeffer and Stycos, 2002).  

2 Also see Vaughn and Nordstrom (1991) for a review of other literature from the 1980s.
stronger than, concern expressed by their white counterparts on most environmental issues addressed by the poll.

Other research casts additional doubt on the strength of the hierarchy of needs approach. Jones and Dunlap (1992) examined the National Opinion Research Center’s (NORC) General Social Survey (GSS) data spanning from 1973 to 1990 and found race and income to be poor predictors of concern. Instead, important predictors of concern were found to be age, political ideology, and education, among others. Jones (2002) examined the NORC GSS data spanning from 1973 to 1993 and analyzed support for funding environmental protection during both good and bad economic times. Contrary to the expectations of the hierarchy of needs, African-American support for this funding held fairly constant during times of recession, when hierarchy of needs would predict that people would focus more on basic day-to-day survival needs such as food and shelter. Where there was evidence of a decline in support, it was part of a general decline in support across racial groups.

The principal alternative to the hierarchy of needs approach is environmental deprivation theory. Day to day survival concerns may lend themselves to a hierarchy of needs which disregard environmental protection, but what happens when a dirty environment becomes a survival concern in itself? This is the crux of the theory proposing that the more someone is exposed to pollution, or the greater level of pollution someone is exposed to, the greater concern they will show for protecting the environment (Lowe and Pinhey 1982; Tremblay and Dunlap 1978; Van Liere and Dunlap 1980). A rival theory, relative deprivation theory, suggested instead that people living in polluted environments have grown used to their situation; outcry would arise only from people living in cleaner environments who became exposed to the dirty side (Morrison, et al. 1972).

Tests of these rival theories have produced mixed results. Early studies supported the relative deprivation theory (Hershey and Hill 1977-78; Crenson 1971). Lowe and Pinhey (1982) offered a unique test, pitting environmental deprivation theory against relative deprivation theory. Their results instead found support for environmental deprivation theory; a polluted environment concerned those living within it, whether or not they had lived in a less polluted environment at another time. Mohai and Bryant (1998) looked at the predictions of environmental deprivation theory alongside their examination of racial differences in attitudes towards environmental protection. Some of the correlation between race and environmental concern washed out in the analysis when the income level and pollution exposure of a neighborhood were controlled for. This result is understandable if minorities heavily populated these poor, polluted neighborhoods. An examination of the home neighborhoods of the respondents to the 2002 Detroit survey provided corroborating evidence (Mohai 2003).

Much work has been done linking concern for the environment to a variety of other demographics besides race and income, though the findings did not always paint a clear picture of how selected demographics were linked with environmental concern. Gender, age, education, religious affiliation, and the party and ideological self-identification of the survey respondent have been popular test subjects for analyzing environmental concern. The correlations between gender, age, and education, and concern for the environment were somewhat inconclusive. Where differences existed, males were less concerned about environmental problems than were females (Mohai and Bryant 1998), though other research found little supporting evidence (Jones and Dunlap 1992; Van Liere and Dunlap 1980; Uyeki and Holland 2000) or skipped a control for gender entirely (e.g. Mohai 1990; Jones 1998; Jones and Carter 1994; Taylor 1989). In general, younger age groups are more pro-environment (Kanagy, Humphrey, and Firebaugh 1994; Jones and Dunlap 1992; Van Liere and Dunlap 1980; but see Mohai and Bryant 1998). The correlation between level of education and concern for the environment is decidedly mixed. While high education has been demonstrated to correlate with pro-environment attitudes (Kanagy, Humphrey, and Firebaugh 1994; Jones and Dunlap 1992; Newell and Green 1997; Van Liere and Dunlap 1980), so has lower education (Mohai and Bryant 1998; Uyeki and Holland 2000), while Guth, et al. (1995) found little correlation between education and environmental concern.

A respondent’s party or ideological affiliation and their religious affiliation were highly correlated with their concerns for environmental protection. In general, Judeo-Christians were less concerned about environmental protection than non-Judeo-Christians, with some variance by denomination (Hand and Van Liere, 1984). The more fundamentalist or orthodox branches of various religions were less supportive of environmental protection than less fundamentalist branches (Guth, et al. 1995). Politically, a liberal or Democrat self-identification was consistently correlated with support for environmental protection (Kanagy, Humphrey, and Firebaugh 1994; Jones and Dunlap, 1992; Mohai and Bryant 1998; Van Liere and Dunlap 1980).

Our research tackles several existing gaps in the literature. Earlier work has predominantly focused on either a single survey question asked over a period of time, or a group of questions asked in only one poll. As Mohai and Bryant (1998) demonstrated, “concern for the environment” is an issue that is too complicated to be adequately addressed with a single survey question. At the same time, a broader base of questions asked in only a single poll gives a snapshot in time without offering the depth of understanding provided by a time series. Our research uses survey questions dealing with several different types of environmental problems. Each question was asked repeatedly over a period of several years, allowing us to trace the changes in opinion over time.

Survey research examining the opinions of minority populations has been criticized for using opinion surveys in which minorities make up only a small number of respondents.
(Taylor, 1989). In addition, virtually all of the existing research has ignored Hispanics entirely, focusing exclusively on African-Americans as the minority population of interest. However, different minority groups cannot and should not be treated as having a homogenous experience (Segura and Bowler 2005). It is for precisely this reason that pooling cross-sections of California is so useful to asking our questions. The resulting data set includes significant populations of both African-Americans and Latinos, along with a large sample of non-Hispanic whites, in a state with a long history of environmental debate.

**ARGUMENT**

Recent work such as Mohai and Bryant (1998) has employed a method in which the broad umbrella topic of environmental protection was broken down into parts for analysis. Protecting the environment means different things to different people; exploring opinion on several issues involving environmental protection allows this variance to be captured.

Consistent with this approach, we analyzed the California Field Poll responses to six different questions asked over a period of two decades. These questions covered both broadly based and issue specific aspects of environmental protection, allowing any differences on specific issues to be revealed. Three questions were general, asking the respondent whether or not they considered themselves an environmentalist, how concerned they were for protecting the environment, and what they thought about present spending on environmental protection. One question asked about oil drilling on California’s tidelands; a specific issue, but not a local issue for most people beyond the tidelands themselves. The remaining two questions focused on the respondent's concerns about air and water pollution and toxic wastes, issues that definitely have local impact.

Since each question was asked of respondents multiple times over the course of two decades, we were able to identify trends in public opinion that would otherwise have escaped our attention with a single survey response approach. This allowed us a check against bias in any one particular poll, such as might be caused by a recent significant event like an oil spill or a controversy over a toxic waste facility, while giving us a baseline for comparing early poll data to more recent polls.

Hierarchy of needs theory and environmental deprivation theory suggest two contradictory patterns of outcomes to our poll questions concerning the environment. Maslow's (1970) hierarchy of needs theory predicts low interest on the part of poor and minority respondents. White or wealthy citizens, those the theory would argue are more able to afford the time and money for quality of life issues, should express a greater level of concern for the environment than minority or poor citizens. At the same time we should expect our African-American, Hispanic, or poor respondents to be less in favor of spending on environmental protection than the white or wealthy respondents.

By contrast, environmental deprivation research suggested that concern for the environment would follow from exposure to pollution (Lowe and Pinhey 1982; Tremblay and Dunlap 1978; Van Liere and Dunlap 1980). For people living in a heavily polluted area, the environment is not just an esoteric concern, but rather one of personal health and survival. The environmental justice movement argues that it is precisely poor and minority members of many communities that are most often exposed to pollution for example by living close to industrial zones (United Church of Christ 1987; Labor/Community Strategy Center 1991). Since exposure primarily takes place at home or at work, it makes sense that concerns over local environmental problems such as pollution and waste would take precedence over less concrete or far away problems. Typically, with affluence comes the ability to move away from environmental problems to cleaner, safer suburbs or, simply, less developed areas of the region. As post-materialism suggests, with wealth may come the luxury of being able to worry about the environment. But wealth also may mean that individuals can simply move away from environmental problems. One possible amendment to this argument concerns the, typically very wealthy, coastal communities. Issues that impact coastal scenery, such as drilling on the state’s tidelands may well affect richer (whiter) citizens more than minorities and so on this one issue we may well see an effect more in line with post-materialist expectations, although with very different attitudinal mechanisms at work.

In addition, once the issue of civil rights was connected with environmental protection, ‘exposure to pollution’ became a racial issue; one capable of influencing opinion in a pattern similar to that suggested by environmental deprivation theory, even if one’s own personal exposure was slight. The theory predicted a significant difference between the level of concern expressed by African-Americans and Hispanics versus those expressed by white respondents. The two minority groups would be significantly more concerned than whites about issues affecting communities, such as pollution and waste, less so regarding other environmental issues not as close to home, such as drilling in the tidelands. The theory would also predict a desire to either maintain or increase spending on environmental protection.

We expect environmental deprivation theory to predict better the results of our analyses of California Field Poll survey respondents. Along the same lines as Mohai and Bryant’s (1998) findings, we expect that Hispanics and African-Americans would show an increased concern over time, and a greater concern than white respondents, for issues of environmental protection that affect their communities. At the same time, we expected that Hispanics and African-Americans would demonstrate equivalent or less concern than whites for more esoteric environmental issues.

---

4 By contrast, Arp and Kenny (1996) argue more generally that while specific local concerns depend on the extent to the level, or threat, of pollution from nearby industry, more general concerns for the environment did not.
and non-local environmental problems. We argue that the merging of environmental protection with preexisting concerns for civil rights has focused minority interest on local environmental issues. We expect some evidence of this increased concern for the environment in the 1980s as the environmental justice movement began to take shape, and stronger evidence of this trend in the 1990s with the movement’s continued struggles against local polluters.

**Data and Analysis**

In order to test our contention that minorities are increasingly sensitive to proximate environmental concerns, we pool California Field Polls over a 21-year period from 1980 through 2000. These data provided polled opinion on several types of environmental issues, from specific problems that could surface in communities, to more esoteric or distant environmental issues. This variation allowed us to examine whether different types of environmental issues were more or less of a concern to different segments of the population. The polls also provided demographic information to control for other possible mitigating factors such as socioeconomic status, levels of education, age, gender, and so forth. Each survey polled anywhere from several hundred to a couple thousand residents, with a mix of white and minority populations.\(^3\) Poll numbers, survey dates, and sample frames, along with the numbers of white, African-American, and Hispanic respondents, are reported in Appendix A.

As we have already indicated, pooling these polls over such a long time period allows us to address shortcomings in the previous research in this field in three important ways. First, the length of time included allows us to assess whether extant findings are bound to a specific time period and to capture changing dynamics in minority environmental opinion. Second, the sheer number of respondents achieved through pooling allows us to have generally representative racial and ethnic sub-samples, something that is often problematic in the use of a single survey. California’s sizeable Hispanic population bolstered the diversity in our sample; in a majority of the polls, over 10 percent of each poll’s respondents identified themselves as Hispanic, with numbers in excess of 20 percent in almost one-third of the polls used. Our study aims to fill in some of the methodological gaps in previous research and redress the question of whether or not concern for the environment is limited to whites, as well as to what extent different racial or ethnic groups demonstrate concern for different types of environmental issues. Finally, by combining a large number of polls, we are able to make comparative assessments across multiple measures of environmental opinion. We have argued that some issues captured in poll questions are likely to be more esoteric and less proximate than others to the lives of minority voters. By using multiple surveys with identically worded questions for several different measures, we can better assess the true underlying nature of minority environmental concern and whether and how that has changed over time.

In the time period selected, six unique environmental questions appear in multiple polls. Accordingly, we will model respondent preferences on all six of these dependent variables. Question wording and response values for all six dependent variables are reported in Table 1.

Three of these we believe should clearly reflect the dynamics of environmental deprivation in action, i.e., demonstrate increasing minority sensitivity; they are Pollution Concern, Protect Environment, and Toxic Waste. The first captures the respondents’ general self-reported level of concern about water and air pollution, the second their sentiment about the importance of protecting the environment, and the last their specific level of concern about toxic wastes and chemicals. In all three instances, we believe, respondents will respond to the question in a manner consistent with both their proximity to sources of environmental degradation and the level of environmental awareness. That is, we expect increasing levels of environmental awareness among minority respondents across the time period in question. These trends are evident in Figure 1.

Figure 1 reports the average of the share of respondents, by race and ethnicity, offering the most pro-environment response on these three questions. The overall trends across all respondents are relatively flat through the 1980s. Differentiation between Latino and white respondents grows over time through the 1990s. A similar pattern for African-American respondents vis-à-vis white respondents is evident, with the exception of the last poll.

By contrast, we believe that opinions on one of the questions, the one concerning oil drilling off of the California coast, will closely reflect the hierarchy of needs argument. Coastal drilling is a general environmental concern but one that is hardly proximate to the interests and needs of most of California’s African-American and Latino populations. The socioeconomic status of those few Californians who live very near the coast is uniformly high, thus broad opinions on this issue is likely to emerge from a more principled or general concern for environmental issues. In addition, unlike the mention of pollution or toxicity, the issue of drilling becomes an environmental concern only after an individual makes the cognitive connection between the activity and the cleanliness of the coast ecosystem, a more demanding task. As a result, we would not expect to see growing concern among minority Californians vis-à-vis whites reflected in our models of responses to this question.

Figure 2 portrays trends in response to this item, again broken down by race and ethnicity. Concern over coastal drilling appears to grow among all groups over the time-span of the data, but significant differentiation of patterns is not evident. Changes in self-reported opposition to drilling appear to be similar across groups and, in most cases, Latino opposition is modestly lower than among non-Hispanic whites.

\(^3\) More information on how Field conducts its polls can be found on the Institute’s web site at http://field.com/
<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Poll Question Wording</th>
<th>Scale</th>
<th>Number of Polls Used</th>
</tr>
</thead>
</table>
| Pollution Concern      | 1 would like you to tell me whether you are extremely concerned, somewhat concerned, not too concerned, or not at all concerned about air and water pollution. | 3 = Extremely concerned  
2 = Somewhat concerned  
1 = Not too concerned  
0 = Not at all concerned | 8                    |
| Environmental Protection Concern | 1 would like you to tell me whether you are extremely concerned, somewhat concerned, not too concerned, or not at all concerned about protecting the state's environment. | 3 = Extremely concerned  
2 = Somewhat concerned  
1 = Not too concerned  
0 = Not at all concerned | 9                    |
| Toxic Waste Concern    | 1 would like you to tell me whether you are extremely concerned, somewhat concerned, not too concerned, or not at all concerned about toxic waste. | 3 = Extremely concerned  
2 = Somewhat concerned  
1 = Not too concerned  
0 = Not at all concerned | 8                    |
| Spending on Environment | Should the amount of state tax money for environmental regulations be increased, held at the current level, or cut back? | 1 = Increase spending  
0 = Hold at current level  
-1 = Cut spending | 8                    |
| Self-ID Environmentalist | Some people consider themselves environmentalists, while others do not. Would you say the term “environmentalist” applies to you definitely, only somewhat, or not at all? | 2 = Definitely  
1 = Only somewhat  
0 = Not at all | 8                    |
| Oppose Offshore Drilling | Oil companies should be allowed to drill more oil and gas wells in state tidelands along the California seacoast. Do you agree or disagree? | 1 = Disagree (forbid drilling)  
0 = Agree (allow drilling) | 8                    |

The last two dependent variables, Environmental Spending and Self-ID Environmentalist are potentially problematic for assessing the environmental concern of minority residents. While we might imagine that minority residents who live close to the source of environmental problems might favor increased spending on this matter, it begs the question of whether spending on the environment is substituted for spending on other concerns, like education or crime reduction. As a consequence, while the interpretation of minority support for increased environmental spending is fairly straightforward, interpretation of minority opposition to increased environmental spending is problematic. An additional complication, one likely to be important among non-Hispanic whites, is the ideological dimension of the entire question of government spending. As a consequence, interpretation of white opposition to environmental spending is problematic as well, and our expectations regarding the model of responses to this question are uncertain.

We would argue that referring to oneself as an “environmentalist” is an even more abstract or esoteric measure of environmental concern than is opposition to coastal drilling. In addition, labels and terms of identification will be additionally problematic for Latino respondents, many of whom do not speak English or for whom English is not the first or primary language. As a consequence, our expectations regarding trend and minority concerns may not be evident in models of responses to this question.

In examining trends of opinion over time, Latinos appear to be modestly more supportive of environmental spending. The distinction between Latinos and non-Hispanic whites does not appear to change much over time; a greater percentage of Latino respondents than white respondents favored increased environmental spending in each of the polls asking this question, from 1980 through 1995. By contrast, Latinos appeared to be less likely than whites to self-identify as “environmentalists” up through 1994, but slightly more likely than whites in the last three observations, from 1998 through 2000. The overall pattern in the two groups, however, remains similar. In both instances, opinion among African-Americans is considerably more volatile, particularly with respect to the self-identification question. Black support for environmental spending, however, exceeds white support for all polls except the last.

---

6 Among Latinos respondents who were offered a choice, 32.21 percent chose to answer the poll in Spanish.

7 The Field polls did not address this question in the same manner in later polls, through 2000.
While the examination of trends provides us with a feel for racial and ethnic differences in a bivariate manner, it is less convincing than establishing such trends and differences as being statistically significant with appropriate experimental control. In order to do this, we estimate non-linear step-function models of each of these six dependent variables. In all but one instance, we use ordered logit, which is the appropriate functional form for ordered data with limited possible values of the dependent variable. In one instance (Oppose Drilling), we use logit since the dependent variable is dichotomous. The coding of the dependent variables is presented in Table 1.

Since we are primarily interested in racial and ethnic differences, we code for whether a respondent is a self-identified Latino or African-American. Each of these dummy variables is coded 1 when the respondent reports being a member of that demographic group, and 0 otherwise. If environmental deprivation is the dynamics at work, we would expect positive coefficients, whereas if a hierarchy of needs is at work, we would expect negative coefficients.

Of course, we have argued that environmental awareness and sensitivity, even on matters of proximate concern, may have become more prominent among minorities over the last twenty years. That is, the dynamics at work among these populations is not likely to be constant across time. As a consequence, differentiation of opinion by race and ethnicity should be dependent on time—that is, if Latinos or African-Americans are becoming more environmentally sensitive, significantly lower levels of environmental support in early years might disappear as minority and non-minority opinion converge while ethnically indistinct opinions in early years might diverge as time passes. To account for this, we include a variable called Year to track the change in opinion over time and interact this variable with both the Latino and African-American dummies. While we have no strong priors on what the coefficient on Year might look like, we do have clear expectations about the interactions. In instances where there was a significant trend among minority groups different from that among other groups, we should see significant coefficients on the interactive terms, with positive values indicative of increasing environmental concern among that particular minority group, ceteris paribus.

We look to the literature for guidance in the important controls. Specifically, we incorporate an array of variables previously identified as potentially important in order to estimate the effect of race and ethnicity on environmental opinion, net of these other potentially confounding effects. We use seven control variables to predict each measure of environmental opinion.

Party and Ideology have both been related to environmental concern. In each case, we use three point scales. For Party, 1 indicates Democrats, 0 Independents, and −1 Republicans. For Ideology, the coding is the same for liberals, moderates, and conservatives, respectively. In both instances, we would expect positive coefficients in all models, as Democrats and liberals are more generally associated with pro-environmental positions.

---

Footnotes:

8 The inclusion of Year is also useful to control for the possibility of autocorrelation in the error terms.

9 An alternative approach would be to employ split sample analyses, dividing the respondents by time period. In results not reported here, we replicated the following analyses using this approach, with results that are perfectly consistent with those we report here. Results are available from the authors.
Education and Home Ownership are used to control for socioeconomic differences. Education is a six-point categorical scale with higher values indicative of more formal education. Home Ownership is a dichotomous variable coded 1 for homeowners and 0 otherwise. Home Ownership is indicative of residential stability, stake in community quality of life, and, at least to some extent, income stability. The effect of these socioeconomic measures is confounded somewhat both by ideology and by likely proximity to environmental degradation. Our priors on these variables, then, are not strong.\(^\text{10}\)

Age and Gender are included as traditional demographic controls. Age is categorized as three dummy variables and one excluded category for older respondents.\(^\text{11}\) Environmental concern has traditionally been associated with youth and, consequently, we expect a negative coefficient on the three included variables. Gender is coded 1 if the respondent is female and 0 otherwise. Women have been found to be more concerned about environmental issues than their male counterparts, a finding consistent with our anecdotal information on environmental activism among Latinas. For this reason, we expect the coefficient on Gender to be positive throughout.

We also include another measure tapping the political context in which opinions are formed: state level Unemployment for each year. We anticipate that support for the environment will decrease during times of higher unemployment as more pressing economic concerns take over from environmental ones.\(^\text{12}\)

**Testing and Results**

We combined the racial/ethnic dummy variables, time, and interactions with the control variables into models predicting each of the six dependent variables taken from the Field data. Table 2 presents the ordered logit results for our six dependent variables. As can be seen, for Pollution Concern, Protect Environment, and Toxic Waste, the three dependent variables we believed would most likely demonstrate the environmental deprivation argument in action, we see evidence consistent with our hypothesis: Latinos are increas-

\(^\text{10}\) One obvious omission here is personal or household income. Unfortunately, Field coded for this using ranges rather than actual figures, introducing two problems. First, since we cannot know where the respondent is in a given range, the application of an inflation deflator, to standardize income across the time span, is impossibly imprecise. Second, and more importantly, Field coded this variable a total of 13 different ways across the polls, meaning the ranges and categories varied widely. There was no even remotely methodologically defensible way to collapse these categories and include the measure.

\(^\text{11}\) We prefer the categorical approach to age rather than a direct measure to account for the possibility of non-linearity across values of this variable.

\(^\text{12}\) In a separate analysis, we also include a measure for the relative rural nature of each county for each respondent. As California farm land is turned into massive gated communities and/or as the deleterious effect of widespread pesticide use becomes better known, rural areas may well be fertile grounds for environmental supporters. Here our definitions follow those of the state of California for counties having over 20 percent rural population. The coefficient on rural is consistently negative and in several instances significantly so, indicating that rural dwellers are less supportive of environmental concerns. The presence or absence of this variable, however, has no appreciable effect on the remainder of the findings, and since this variable is not available for all respondents (as it is not present in all polls), and its presence reduces the usable N, we have excluded it from the analyses presented here. Results using a definition based in the value of agricultural products produced broadly similar patterns.
TABLE 2
ORDERED LOGIT MODELS OF MULTIPLE MEASURES OF ENVIRONMENTAL SENSITIVITY IN CALIFORNIA, 1980-2000

<table>
<thead>
<tr>
<th></th>
<th>Pollution Concern</th>
<th>Protect Environment</th>
<th>Toxic Waste Concern</th>
<th>Spending on Environment</th>
<th>Self-ID Environmentalist</th>
<th>Oppose Off-shore Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latino</td>
<td>–0.727**</td>
<td>–0.433</td>
<td>–0.617*</td>
<td>0.380**</td>
<td>–0.350</td>
<td>–0.129</td>
</tr>
<tr>
<td></td>
<td>(2.24)</td>
<td>(0.92)</td>
<td>(1.74)</td>
<td>(2.23)</td>
<td>(1.42)</td>
<td>(0.66)</td>
</tr>
<tr>
<td>African-American</td>
<td>–0.619</td>
<td>0.774</td>
<td>0.509</td>
<td>0.444**</td>
<td>–0.202</td>
<td>–0.091</td>
</tr>
<tr>
<td></td>
<td>(1.32)</td>
<td>(1.07)</td>
<td>(1.07)</td>
<td>(2.08)</td>
<td>(0.65)</td>
<td>(0.39)</td>
</tr>
<tr>
<td>Year</td>
<td>–0.025***</td>
<td>–0.053***</td>
<td>–0.045***</td>
<td>0.030***</td>
<td>–0.035***</td>
<td>0.166***</td>
</tr>
<tr>
<td></td>
<td>(2.72)</td>
<td>(4.85)</td>
<td>(4.76)</td>
<td>(4.21)</td>
<td>(5.73)</td>
<td>(11.38)</td>
</tr>
<tr>
<td>Latino * Year</td>
<td>0.078***</td>
<td>0.054*</td>
<td>0.075**</td>
<td>–0.030</td>
<td>0.016</td>
<td>–0.060*</td>
</tr>
<tr>
<td></td>
<td>(3.16)</td>
<td>(1.76)</td>
<td>(2.82)</td>
<td>(1.54)</td>
<td>(0.93)</td>
<td>(1.85)</td>
</tr>
<tr>
<td>African-American * Year</td>
<td>0.083**</td>
<td>–0.039</td>
<td>0.050</td>
<td>–0.039</td>
<td>–0.026</td>
<td>–0.051</td>
</tr>
<tr>
<td></td>
<td>(2.12)</td>
<td>(0.82)</td>
<td>(1.30)</td>
<td>(1.27)</td>
<td>(1.12)</td>
<td>(1.18)</td>
</tr>
<tr>
<td>Party</td>
<td>0.278***</td>
<td>0.318***</td>
<td>0.296***</td>
<td>0.321***</td>
<td>0.280***</td>
<td>0.272***</td>
</tr>
<tr>
<td></td>
<td>(5.41)</td>
<td>(5.88)</td>
<td>(5.58)</td>
<td>(7.82)</td>
<td>(7.41)</td>
<td>(5.82)</td>
</tr>
<tr>
<td>Ideology</td>
<td>0.279***</td>
<td>0.401***</td>
<td>0.191***</td>
<td>0.377***</td>
<td>0.484***</td>
<td>0.376***</td>
</tr>
<tr>
<td></td>
<td>(4.81)</td>
<td>(6.49)</td>
<td>(3.22)</td>
<td>(8.89)</td>
<td>(10.61)</td>
<td>(8.02)</td>
</tr>
<tr>
<td>Age 18-29</td>
<td>0.083</td>
<td>0.166</td>
<td>–0.205</td>
<td>0.597***</td>
<td>–0.337***</td>
<td>0.943***</td>
</tr>
<tr>
<td></td>
<td>(0.60)</td>
<td>(1.16)</td>
<td>(1.47)</td>
<td>(5.57)</td>
<td>(3.28)</td>
<td>(7.70)</td>
</tr>
<tr>
<td>Age 30-49</td>
<td>–0.019</td>
<td>0.052</td>
<td>–0.061</td>
<td>0.172*</td>
<td>–0.123</td>
<td>0.637***</td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
<td>(0.44)</td>
<td>(0.52)</td>
<td>(1.78)</td>
<td>(1.48)</td>
<td>(5.74)</td>
</tr>
<tr>
<td>Age 50-64</td>
<td>–0.037</td>
<td>–0.207</td>
<td>–0.231*</td>
<td>–0.237**</td>
<td>0.145</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>(0.28)</td>
<td>(1.58)</td>
<td>(1.76)</td>
<td>(2.27)</td>
<td>(1.60)</td>
<td>(0.60)</td>
</tr>
<tr>
<td>Gender (1 = female)</td>
<td>0.282***</td>
<td>0.354***</td>
<td>0.257***</td>
<td>0.428***</td>
<td>0.132*</td>
<td>0.334***</td>
</tr>
<tr>
<td></td>
<td>(3.66)</td>
<td>(4.26)</td>
<td>(3.29)</td>
<td>(6.80)</td>
<td>(2.26)</td>
<td>(4.57)</td>
</tr>
<tr>
<td>Education</td>
<td>–0.082**</td>
<td>–0.030</td>
<td>–0.213***</td>
<td>0.040</td>
<td>0.119***</td>
<td>0.165***</td>
</tr>
<tr>
<td></td>
<td>(2.39)</td>
<td>(0.81)</td>
<td>(5.95)</td>
<td>(1.43)</td>
<td>(4.38)</td>
<td>(5.22)</td>
</tr>
<tr>
<td>Home Ownership</td>
<td>–0.123</td>
<td>–0.057</td>
<td>–0.053</td>
<td>–0.308***</td>
<td>–0.098</td>
<td>–0.139*</td>
</tr>
<tr>
<td></td>
<td>(1.40)</td>
<td>(0.62)</td>
<td>(0.59)</td>
<td>(4.46)</td>
<td>(1.44)</td>
<td>(1.73)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>–0.021</td>
<td>–0.032</td>
<td>–0.062**</td>
<td>–0.195***</td>
<td>–0.134***</td>
<td>–0.026</td>
</tr>
<tr>
<td>(Statewide)</td>
<td>(0.72)</td>
<td>(1.25)</td>
<td>(2.18)</td>
<td>(7.61)</td>
<td>(4.78)</td>
<td>(0.50)</td>
</tr>
<tr>
<td>Cut 1</td>
<td>–5.0</td>
<td>–5.09</td>
<td>–4.9</td>
<td>–2.4</td>
<td>–3.11</td>
<td>1.5</td>
</tr>
<tr>
<td>Cut 2</td>
<td>–3.5</td>
<td>–3.64</td>
<td>–3.55</td>
<td>–0.22</td>
<td>–0.06</td>
<td></td>
</tr>
<tr>
<td>Cut 3</td>
<td>–1.18</td>
<td>–1.2</td>
<td>–1.13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| \( \chi^2 \) (reduction in L-L) | 169 | 239 | 128 | 561 | 441 | 630
| Significance   | .000              | .000                 | .000                 | .000                    | .000                     |
| Observations   | 2926              | 2635                 | 2866                | 3831                    | 4790                     | 3730                      |

Absolute value of z statistics in parentheses

ingly sensitive to environmental issues. Specifically, while the coefficients on Latino are each negative, the interaction of Latino*Year in these three models is strongly positive. This suggests that while Latinos might have been somewhat less environmentally aware than non-Hispanic whites in earlier years, the trend on at least these three measures is positive.

By contrast, when we examine the results on the three additional measures—those that we find more problematic—we find very different results. Latinos appear to favor greater spending on the environment at higher levels than their fellow respondents, but there does not appear to be much of a time trend. As we indicated earlier, interpretation of findings for this measure might be difficult, owing to the complexity implicit in questions specifically referring to governmental spending. And on the other two measures, those which are more esoteric or distant measures of
Table 3
Predicted Probabilities for All Values of Six Models of Environmental Concern Among Californians by Racial and Ethnic Group, 1980-2000

<table>
<thead>
<tr>
<th></th>
<th>Latinos</th>
<th>Non-Hispanic Whites</th>
<th>African-Americans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year = 1</td>
<td>Year = 21</td>
<td>Year = 1</td>
</tr>
<tr>
<td>Pollution Concern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.02</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>1</td>
<td>.06</td>
<td>.02</td>
<td>.03</td>
</tr>
<tr>
<td>2</td>
<td>.40</td>
<td>.21</td>
<td>.29</td>
</tr>
<tr>
<td>3</td>
<td>.51</td>
<td>.75</td>
<td>.67</td>
</tr>
<tr>
<td>Protect Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.01</td>
<td>.01</td>
<td>.008</td>
</tr>
<tr>
<td>1</td>
<td>.03</td>
<td>.03</td>
<td>.03</td>
</tr>
<tr>
<td>2</td>
<td>.30</td>
<td>.30</td>
<td>.24</td>
</tr>
<tr>
<td>3</td>
<td>.64</td>
<td>.65</td>
<td>.72</td>
</tr>
<tr>
<td>Toxic Waste Concern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.01</td>
<td>.006</td>
<td>.007</td>
</tr>
<tr>
<td>1</td>
<td>.06</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>2</td>
<td>.33</td>
<td>.23</td>
<td>.24</td>
</tr>
<tr>
<td>3</td>
<td>.59</td>
<td>.73</td>
<td>.71</td>
</tr>
<tr>
<td>Spending on Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.16</td>
<td>.15</td>
<td>.21</td>
</tr>
<tr>
<td>1</td>
<td>.47</td>
<td>.47</td>
<td>.49</td>
</tr>
<tr>
<td>2</td>
<td>.37</td>
<td>.37</td>
<td>.29</td>
</tr>
<tr>
<td>Self-ID Environmentalist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.09</td>
<td>.13</td>
<td>.06</td>
</tr>
<tr>
<td>1</td>
<td>.59</td>
<td>.63</td>
<td>.54</td>
</tr>
<tr>
<td>2</td>
<td>.31</td>
<td>.23</td>
<td>.39</td>
</tr>
<tr>
<td>Oppose Drilling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>.63</td>
<td>.17</td>
<td>.58</td>
</tr>
<tr>
<td>1</td>
<td>.37</td>
<td>.83</td>
<td>.41</td>
</tr>
</tbody>
</table>

Environmental awareness, there appears to be little direct effect of ethnicity, and the interactive effect in the model of opposition to offshore drilling is negative and approaching significance, an indication that, while opposition to offshore drilling appears to have grown among all Californians over time, Latinos are beginning to lag behind non-Latinos in their level of opposition to this activity.

Results for African-Americans are less clear, and the patterns exhibited are distinct from those for Latinos. Coefficients on the dummy variable, estimating the direct effect are generally insignificant, suggesting less differentiation between African-Americans and whites, ceteris paribus. The one exception is spending, where, like Latinos, black respondents appeared to favor higher spending on the environment. An examination of the interactive terms suggests that trends among African-Americans are not generally as different from non-Hispanic whites as was the case among Latinos. Black concern over pollution appears to have grown significantly over the time span of the data, in a manner consistent with Latinos, but for the other dependent variables, the trends among African-Americans—captured in the relevant interactive term—never reach significance.

Interpreting coefficients from non-linear models, however, is difficult. To demonstrate better the phenomenal effect of these predictors on the likelihood of holding a pro-environment position, we turn to the predicted probabilities reported in Table 3. The probabilities reported in each cell are those predicted by the model for the specific values indicated on the key independent variables, holding all other predictors at their mean value. In this instance, we present the predicted probability of holding each value given the specific ethnic group of the respondent and the effect of time.13

Examination of the predicted probabilities illustrates the dynamics identified in the models. On the three dependent

---

13 Estimating predicted probabilities for Latinos and African-Americans, then, include the effect of both Year and the interactions Latino-Year and African-American-Year, respectively. For non-Hispanic whites, both interactive terms are held at 0, while for Latinos, the African-American interaction is held at 0, and vice versa.
variables capturing environmental sensitivity on matters of proximate concern. Latinos appear to have become consistently more environmentally sensitive than their white fellows, either by increasing their own reported concern about these matters or, as was the case for protecting the environment, holding steady while other groups’ concern declined. White support for the pro-environmental position declined for all three measures. And among African-Americans, the results were mixed, with behavior more similar to Latinos with regard to pollution and toxic waste, and consistent with whites on the issue of environmental protection.

As we expected, trends on the remaining three measures are far less distinct. Latino support for environmental spending remained fixed even while support among whites increased and among African-Americans declined. The difficulties of interpreting exactly what that means have already been discussed. All three groups, however, exhibited a marked decline in the likelihood of self-identifying as an environmentalist, while all three showed significant increases in their opposition to off-shore drilling (though to varying degrees, with the increase among Latinos being significantly more modest).

Returning to Table 2, we can assess the performance of the rest of the models. Among control variables, Party and Ideology are consistently associated with pro-environment opinions. Our expectations that liberals and Democrats remain more environmentally concerned are borne out. Gender is consistently positive and significant, indicating that women continue to be, on average, more environmentally concerned. Age effects are generally seen for younger voters who typically express more concern about environmental issues but are less likely to consider themselves environmentalists.14

The effect of socioeconomic status remains unclear. Home Ownership is frequently insignificant and almost negative, though it does reach conventional levels of significance in models of support for spending and opposition to off-shore drilling. While it is difficult to know for sure exactly what these relationships imply, they would seem to address a negative income effect, perhaps driven either by the tax implications of environmental spending or the relative distance of environmental problems from many homeowners. Education is positively associated with opposition to drilling and self-identification as an environmentalist but negatively associated with concern over toxic waste and pollution. These effects are very consistent with our arguments concerning social class, proximity, and esoteric measures of environmental concern. Again, we did not begin this study with strong priors on the impact of SES.

One curious but potentially important result has to do with our measure of Unemployment. The coefficient on unemployment is consistently negative, but only significant for half of the measures. Specifically, higher unemployment is negatively related to concern over Toxic Waste, support for Spending on the Environment, and self-identification as an environmentalist. This is the result we would expect from a hierarchy of needs approach, but it is not replicated in the other three models, where Unemployment is profoundly insignificant. The absence of a significant effect on both Pollution Concern and the desire to Protect the Environment is perfectly consistent with our earlier finding that environmental deprivation—not the post-materialist hierarchy—is at work in predicting these attitudes.

**Summary and Conclusion**

We began this effort wondering whether minorities were more or less environmentally concerned than whites and why extant research findings came to conflicting conclusions. We argued that to answer these questions properly, we needed to examine minority opinion across a variety of measures of environmental concern and across time. Earlier studies have relied upon a single cross-sectional survey, a single question across multiple surveys, or focused on a single metropolitan area to address issues of environmental concern. Measures of minority concern were limited to those of African-Americans—Hispanic opinion has been largely unexplored. Our research has expanded the coverage; focusing on three major demographic groups, we analyzed responses to six different survey questions about environmental concern over a two-decade period, with a sample from an area containing roughly one-eighth the population of the United States. What we found was telling.

First, the presumption that non-Hispanic whites are more environmentally aware and concerned than either Latinos or African-Americans appears, at the very least, over-stated and out-dated, and perhaps, simply wrong. On four of the six measures of environmental attitudes, whites are trending away from pro-environment positions. On a fifth—opposition to drilling—all three groups appear to be trending together. And even in the one instance where white support is increasing as minority support remains flat or declines—environmental spending—over the entire timespan of the data, both Latinos and African-Americans were more supportive than whites, ceteris paribus.

Second, there appears to be considerable support for the environmental deprivation argument but only modest support for the hierarchy of needs approach. These results suggest two points. First, minority opinions do not behave as a post-materialist view would suggest. Minority respondents, among the least well off and least well-educated members of the community, are more, and not less, concerned with environmental issues. Latinos and African-Americans both appear to be increasingly concerned about pollution and toxic chemicals. Latinos also offer more support for protecting the environment. On environmental matters that bear direct relation to the quality of life, minority respondents do demonstrate environmental sensitivity at levels greater than whites. This finding stands in stark contrast to expectations.

---

14 Indeed, one of the side findings of this study is the extent to which responses to a question on self-identification as an environmentalist elicits responses that are quite different from issue specific questions.
grounded in arguments of post-materialism and the hierarchy of needs.

On the more esoteric concerns of off-shore drilling and self-identification, it is the case that minority support for the pro-environment position is exceeded by that among non-Hispanic whites, a result bolstered by the negative effect of unemployment on self-identification. Nevertheless, this support for the hierarchy of needs approach is, at best, modest, as patterns of response on both issues are more alike than different across the three racial/ethnic groups.

Third, the across-the-board decline in the willingness to self-identify as an environmentalist, and the negative effects among the young adults suggest a serious and surprising problem for the environmental movement. The overall decline in the willingness of all respondents to consider themselves environmentalists suggests a decline in the level of positive affect attached to this term or, more menacingly, a growing negative connotation. And while the classic stereotype of environmentalists includes college-age and young adults imbued with idealism, these data report a marked decrease in the willingness of younger respondents to call themselves an environmentalist, opposite to the expectations of conventional wisdom.

While respondents may shy away from viewing themselves as environmentalists, it does not preclude them from voicing some concern over specific environmental issues. Concern for the environment is not solely the domain of the white and the rich, as it was cast in the 1970s and early 1980s, but for a variety of people from all walks of life. Minority concern for community environmental issues appears to have taken off over the last two decades, a conclusion we might have missed had we run merely a single analysis on a single cross-section. It is only with the examination of minority opinion, among different minority groups, on a variety of environmental issues across time that we can reasonably draw conclusions about the level and variation of environmental sensitivity among minorities. The next question for scholars interested in this line of inquiry is the extent to which increased minority concern has translated into mobilized political action, at the community level and beyond. Whether concern has translated into action is a key to understanding both minority participation in politics and how communities are confronting increasing problems of pollution in their neighborhoods.

REFERENCES


Received: April 7, 2004
Accepted for Publication: July 1, 2004

Received: April 7, 2004
Accepted for Publication: July 1, 2004

gmsegura@u.washington.edu
matthew-whittaker@uiowa.edu
shaunb@citrus.ucr.edu