

NYACK HIGH SCHOOL

Differing opinions of Climate Change among Urban and Rural residents in New York State

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Differing opinions of Climate Change among Urban and Rural residents in New York State

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Abstract: *Although there is a growing body of research examining public perceptions of global climate change, little work has focused on the role of place and proximity in shaping these perceptions. Also few studies have focused on the adolescent view point on these issues. This study attempts to remedy these gaps by looking at the role of proximity, specifically the urban rural divide found in many nation, specifically among youths.. This study specifically surveyed youths in New York State, both urban and rural residents and compared their responses on a series on survey's designed to measure one's "environmental friendliness." Statistical analysis methods were used to compare the data found to national results. These results indicated that an urban rural divide in regards to views on climate change is still very prominent in New York State. The difference is primarily that rural residents are generally much more opposed to environmental protection, favoring instead economic growth.*

Introduction

The precise implications of the scientific claims about climate change, and the extent to which climate change may pose dangers to various populations, has been intensely debated at many levels in relation to policy. How this 'danger' is interpreted will ultimately affect which actions are taken by policy makers. Scientific data has had little impact in deciding individuals and by extension their representatives' opinions on climate change (Brulle, 2012). Although there is widespread concern about climate change (Leiserowitz, 2007), it is of secondary importance in comparison to other issues in people's daily lives (Dunlap, 2012). Most individuals

relate to climate change through personal experience, knowledge, the balance of benefits and costs, and trust in other societal actors (Brulle, 2012). Another key factor determining one's perception of risk is age (Leiserowitz, 2007). These interpretations are subject to many independent factors however.

While previous studies have looked at the urban-rural divide (Shwom et. Al. 2008, Hamilton et. al. 2009, 2010) the vast majority have looked exclusively on the opinions of adults. The longevity and broad reach of climate change makes it necessary to understand the entire population's beliefs. These previous surveys have found that there is a substantial gap between urban and rural populations. (Lorenzoni, 2006, Leiserowitz, 2005) However, for the most part these studies have shown that this gap is steadily shrinking due to the impact of mass media, increased awareness of climate change, and the prominence of environmental issues on the global stage. The question that should be answered is if that gap has shrunk among the youth of the United States, the ones likely to be burdened with the effects of climate change, and who will decide the future policies to deal with the issues it may bring about.

Statement of Purpose

The purpose of this survey is to discern if there is a noticeable difference between urban and rural dwellers, specifically high school students. In this particular study geographic location is examined as a possible indicator of risk perception of climate change. Specifically this study focused on the differences between urban and rural population's perception of climate change. Few studies have focused on the opinions of school aged individuals; this study hopes to remediate that.

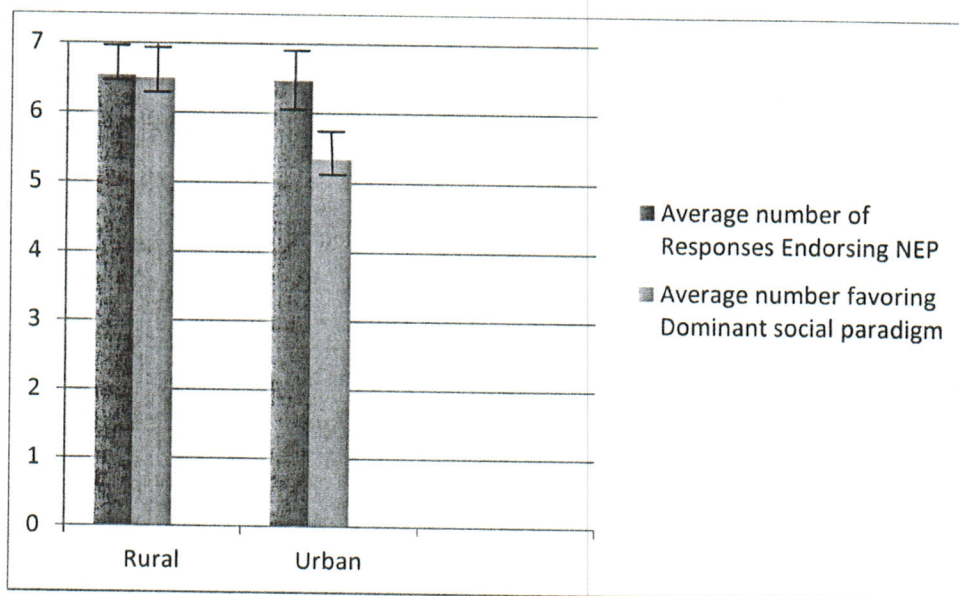
Methods

Several high schools in New York State and surrounding areas were selected to be contacted. The schools were chosen so that there would be a relatively equal number of respondents from both rural and urban areas. The designations “urban” and “rural” were determined using the population density for the county. Counties with less than 500 individuals per square mile were deemed rural. Counties with more than 1,000 per square mile were deemed urban. This data was gathered from the 2010 national census. The school districts chosen had within 5 points of the average on York State Regents exams as well. (Mean on the Algebra 1 exam of 2007 was 83) The school administrations were then contacted, and were asked to participate in our survey. The survey was distributed one of two ways; either via an online method known as “Survey Monkey,” or via a traditional paper method. The survey itself is modeled on two nationally distributed surveys. One is the N.E.P (New Environmental Paradigm) developed by Professor Riley Dunlap. It has been used extensively in previous surveys (Dunlap et. al. 2000, Wiidegren 1998) which allows there to be some standardization when conducting these surveys. . The revised N.E.P has 15 statements, called items. Eight of the items, if agreed to by a respondent, are meant to reflect endorsement of the new paradigm, while agreement with the other seven items represents endorsement of the Dominant Social Paradigm (DSP). Favoring the DSP usually indicates a predilection toward supporting economic growth, and being unaware/unresponsive to the environmental damages caused by this economic growth. Favoring the N.E.P typically indicates a more environmentally conscious mindset. Using a Likert scale respondents are asked to indicate their strength of agreement with each statement (5 = strongly agree, 4 = agree, 3 = unsure, 2 = disagree, 1 = strongly disagree). The second part of the survey

was a revised version of the Gallup poll on environmental issues. Questions that did not pertain to student, or would be otherwise difficult for them to answer were removed. The results from both rural and urban were then analyzed and compared to both previous national surveys, and to each other. The results were also weighted according to race, ethnicity, socio-economic status gender in order for them to be representative of the youth population of New York State. These results were then compared to the 2011, and 2010 national Gallup surveys, as well as previous surveys that utilized the N.E.P. The student response were separated into the two groups, urban and rural, and compared with the greater population using a two tailed t-test. Their answers were analyzed and checked for statistical relevance using a standard p-test. In order to determine the extent to which students prioritized climate change they were asked to compare it along with other important issues. (foreign policy, crime, abortion etc.) This helped reduce the risk of students giving only sociably desirable answers. The survey focused primarily focused on global climate change as a whole, but also touched on regional issues as well. (pollution, fracking). These responses allowed us to form a cohesive picture of the public opinion of the Urban and Rural youth populations in New York State.

Results

Figure 1: N.E.P mean responses for Students



This table shows the average number of positive responses to both the N.E.P directed questions and the DSP directed questions. A positive response for either indicates support. It is demonstrated in figure 1 that while both had equal support of N.E.P ideals, the rural population indicated much more support of the DSP ideals.

Table 1: Detailed N.E.P responses

| Question | Mean (Student) | Mean (National) | Std Deviation (Student) | P Value |
|--|----------------|-----------------|-------------------------|---------|
| We are approaching the number of people the Earth can support. | 2.36 | 3.02 | .72 | .075 |
| Humans have the right to modify the environment to suit | 2.89 | 3.79 | 1.01 | .095 |

| | | | | |
|---|------|------|-----|------|
| their needs. | | | | |
| When humans interfere with Nature it often produces disastrous consequences. | 2.87 | 3.01 | .89 | .093 |
| Human's ingenuity will insure that we will NOT make the Earth unlivable. | 4.5 | 4.1 | 1.4 | .096 |
| Humans are severely abusing the environment. | 3.2 | 2.5 | 4.5 | .084 |
| The Earth has plenty of natural resources if we just learn how to develop them. | 4.5 | 3.5 | 2.4 | .059 |
| Plants and Animals have just as much as a right as Humans to exist. | 3.7 | 3.2 | .75 | .071 |

| | | | | |
|---|-----|-----|-----|------|
| The balance of nature is strong enough to cope with the impacts of modern industrial nations. | 3.4 | 2.7 | 2.1 | .093 |
| Despite our special abilities, humans are still subject to the laws of nature. | 1.0 | 2.3 | 3.3 | .072 |
| The so called "ecological crisis" facing human kind has been greatly exaggerated | 4.5 | 4.7 | .32 | .076 |
| The Earth is like a spaceship with limited space and resources. | 2.7 | 2.7 | .34 | .087 |
| Humans were meant to rule over the rest of nature | 4.7 | 4.6 | .38 | .089 |
| The balance of | 4.2 | 3.7 | .35 | .091 |

| | | | | |
|--|-----|-----|-----|--|
| nature is delicate and easily upset. | | | | |
| Humans eventually will learn enough about how nature works to be able to control it. | 4.8 | 4.7 | .18 | |
| N=528 | | | | |

The student response were separated into the two groups, urban and rural, and compared with the greater population using a two tailed t-test. Their answers were analyzed and checked for statistical relevance using a standard p-test. These results indicate that responses favoring the NEP were similar, the responses favoring significantly. This support of the DSP indicates a predil over environmental protection. However, it is important to level of variation within the student body. However, the ma over the NEP came from rural areas. This points to the conti of the gap discovered by Hamilton ET. Al.

Tables do not show a break-down of urban and rural results

The second part of the survey was the Gallup poll. The results from the entire group mirrored to a large extent the results from the national Gallup poll in 2011 on these issues. For the most part global warming scored relatively low on a list of environmental problems.

Table 2: Detailed Gallup Poll

| How much, on a 1-5 scale, do you personally worry about these problems? | Student Responses (Positive) | Student Responses (Negative) | National Responses (Positive) | National Responses (Negative) | P-Value |
|---|------------------------------|------------------------------|-------------------------------|-------------------------------|---------|
| | | | | | |

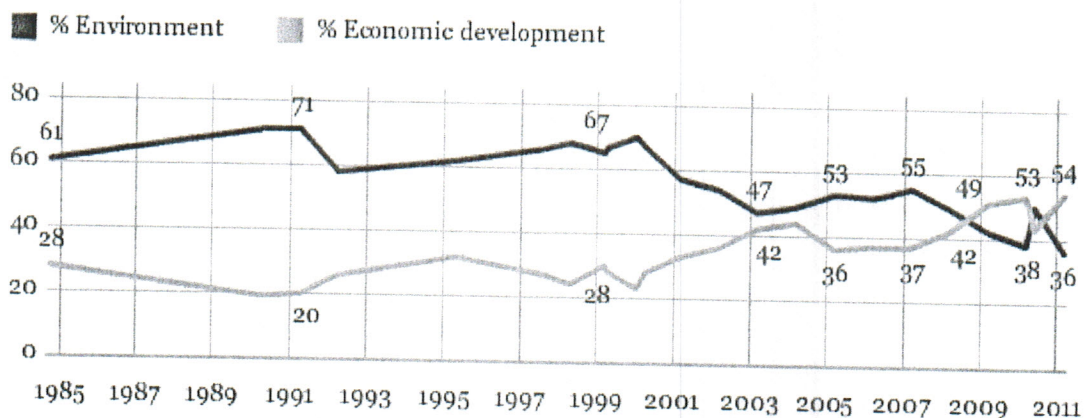
| | | | | | |
|---|-----|-----|-----|-----|------|
| Contamination of Soil by toxic waste | 83% | 16% | 79% | 20% | .098 |
| Pollution of rivers, lakes and reservoirs | 63% | 37% | 79% | 22% | .081 |
| Pollution of drinking water | 58% | 41% | 77% | 24% | .092 |
| Air pollution | 74% | 18% | 75% | 28% | .054 |
| Extinction of plants and animals | 89% | 3% | 72% | 36% | .087 |
| Loss of tropical rainforests | 83% | 2% | 64% | 35% | .063 |
| Urban Sprawl | 27% | 54% | 63% | 42% | .078 |
| Global Warming | 63% | 22% | 51% | 48% | .067 |

Most interesting was the question regarding the biggest issue facing America. Only 3% of students polled answered with an environmentally related. The respondents overwhelmingly chose the economy and jobs as the biggest issues facing America today. This mirrors the national trends over the past 2 years.

Figure 3: Environmental Opinion over Time

Higher Priority for Economic Development or Environmental Protection

With which one of these statements about the environment and the economy do you most agree -- [ROTATED: protection of the environment should be given priority, even at the risk of curbing economic growth (or) economic growth should be given priority, even if the environment suffers to some extent]?



| | |
|--------------|----|
| %Economic | 64 |
| %Environment | 26 |

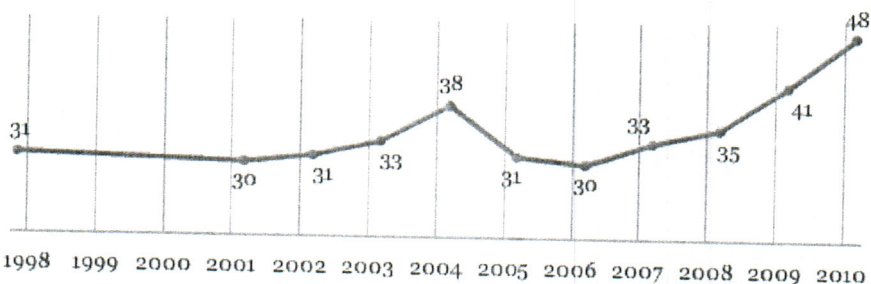
N=528 (Table 3: Student Responses to Gallup Poll)

Also, 52% of participants believed that the reports of global warming are “generally exaggerated.” This too mirrors national trends. Most students reported that they believed that the media exaggerated the effects of global warming. This belief was largely accompanied with the belief that most scientists do believe global warming is occurring, just that they over estimate its effects. Students do not doubt the presence of global warming, but rather the scale of its impact.

Figure 4: Seriousness of Climate Change

Thinking about what is said in the news, in your view is the seriousness of global warming -- [ROTATED: generally exaggerated, generally correct, or is it generally underestimated]?

■ % Generally exaggerated



GALLUP

| | |
|----------|-----|
| National | 48% |
| Student | 52% |

N=528 (Table 4: Seriousness of Climate Change (Student))

Discussion and Conclusion

Most importantly, while there was an urban rural divide, it was relatively minor, and overshadowed by national trends. By this I mean, while there were splits between the urban and rural residents on the NEP, they were relatively minor when compared to the Gallup poll. The splits in the N.E.P largely mirrored those seen on the Gallup poll. The questions on which there were major differences dealt mostly with prioritizing economic growth over environmental protection. The Gallup poll showed that in New York State, there seems to be a united view of climate change for the most part, with few outliers.

Climate change has been overshadowed by economic issues for most of the youth in New York State. While climate change is still moderately important to these youths, it has taken the backseat to issues they view are more prominent and important. This trend has been mirrored nationally as well, but New York students, especially urban residents tend to be more environmentally friendly than the average American. While this study has many weaknesses, i.e small sample size, small area of distribution, it still retains many strengths. This is the first study to look at youth's climate change opinion, and analyze that opinion based on their local population density.

It still remains to be seen however if this will hold true, as polls have shown rapid fluctuation of public opinion on these issues. Periodic surveys should be carried out on this issue in order to truly understand the nature of public opinion surrounding the issue of climate change. Climate change will be changed not by scientists, but by policy makers. And in order for those policy makers to act they must receive support from the people.

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