

# **The Effects of Proximity to the Charcoal Plant on Resident's Social Values**

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# Summary

A University of Wollongong study by Sociology students has revealed that 74 percent of residents in the region are opposed to the charcoal plant in the Shire and that the proximity to the site has an effect on people's overall social and political values. The closer they live, the more likely they are to be opposed to the plant.

The students presented their findings at the end of the semester after conducting 388 face-to-face interviews with local residents - 222 within a 15km radius of the site and 166 within a 60km radius, taking in Narooma and Ulladulla.

They were testing a sociology theory by professor Ronald Inglehart that people who were raised in the war years (older than 54) are more likely to have materialized values and therefore would be more likely to support the project on economic grounds, while those raised in the affluent postwar years (under 54) would be more likely to oppose the plant on environmental grounds.

In fact what the researchers had noticed was that many older people, whom they would expect to have materialist values, were against the plant and were being vocal in their opposition.

The researchers, Anne Richardson, Jennifer Moraga and Simone Everett, were supervised in their study by their tutor John Perlak at the Batemans Bay Access center, who confirmed the numbers surveyed were in excess of what was needed for a statistically valid result.

It appears that the people of the Eurobodalla, particularly those living in close proximity to the site, resent the intrusion of heavy industry and expected impact on their quality of life, which they prioritise over the promise of the economic benefits for the region, the findings state.

In the second stage of the study, researchers found that road safety and quality of life issues were of concern in addition to the environmental issues. They were surprised to find that the trucks were such a motivating issue.

*(summarised from the Bay Post 12 July 2002)*

## INTRODUCTION

Near Mogo, a small tourist village in the heart of the Eurobodalla region on the South coast of New South Wales, the proposal to build a charcoal manufacturing plant has evoked extraordinary political activity among residents of this normally peaceful area.

Many scholars of Social Movement Organisations (SMO's), eg. Offe (1985), Pakulski (1991), have identified the social characteristics of SMO activists and supporters. Through these endeavours the social characteristics of Environmental Social Movements (ESM's) activists and supporters can be determined. In contrast to the findings of most scholars of ESM's, the ranks of the members of 'Charcoalition' and other protestors against the charcoal plant proposal appeared to display an overrepresentation of older people.

From an Australian perspective, sociological understandings of ESM activity and the associated activists and supporters is best understood through the work of Papadakis (1993), Eckersley (1992) and Tranter (1996). In a broad sense, writers locate the socio-political characteristics of environmental movement supporters and activists in the post-materialist Left of a two dimensional model combining traditional Lipsettian Left/Right ideologies (Lipset, 1960, 1981) with Inglehartian materialist/post-materialist value preferences (Inglehart, 1981, 1990,). The social characteristics of ESM activists and supporters can be characterized by Tranters description of a typical Australian environmentalist:

She would be a tertiary-educated social and cultural or human services professional, hold postmaterialist value orientations and would have been interested in the arts and literature during adolescence. Such a supporter would not tend to identify with a religious denomination, although may believe that nature is sacred in its own right (Tranter, 1996: 77).

The choice of Inglehart's 'generational value change' model in this project is deliberate. The observation that 'older' activists and supporters are over-represented in local actions seems to be in conflict both with Inglehart's notion that 'war generation' individuals are more likely to hold materialist values and be in favour of economic activity and growth and with the work of McAllister and Studlar (1995) specifically related to values in Australia.

This study will shed some light on the residents' attitudes towards their environment, their lifestyle choices and their response to a perceived threat to their chosen environment. Through exploratory investigation and theory testing, it will seek to discover why this issue has raised such strong opposition especially from older residents. Aspects of the environmental consciousness of populations have been investigated from a number of perspectives. A leading theorist and political scientist at the University of Michigan, Professor Ronald Inglehart, has extensively studied individuals' values and traced patterns of change between different generations.

These intergenerational value changes, classified by Inglehart as 'materialist' and 'post-materialist' (1997: 241) are based on the Maslovian concept of lower and higher order needs, and are said to be tied to 'one's subjective sense of security' (Inglehart, 2000: 219). The values are developed during socialisation from the prevailing economic, political, cultural and social conditions and tend to persevere throughout one's life. A consistent evolution has been observed in peoples' priorities from one generation to the next, from the basic fulfilment of physical and economic needs towards higher order values such as 'quality of life, self-expression' and greater personal and political liberty (Brooks and Manza, 1998). Integral to post-materialist values in most industrialised countries is the prominence of environmental concern, which Inglehart sees as symbolic of the post-materialist worldview (Inglehart, 1997: 244).

Over the last three decades, Inglehart and a broadly based international network of social scientists have tracked socio-cultural and political changes 'in more than 65 societies on all six inhabited continents, containing almost 80 percent of the world's population' (ICPSR: 2000). Their World Values and European Values surveys (WVS, EWS), conducted in a number of 'waves' since 1981, have confirmed distinctly different values which characterise generational groups, such that those people older than 54 are more likely to express materialist values, and those younger to express post-materialist values. This pattern of value change is reflected in Australia through the Australian Electoral Survey (ELS) which is undertaken, Australia wide, approximately every three years by researchers at the ANU.

Results from the 1996 Australian Electoral Survey show that around 18 percent of the population were recorded as materialist or post-materialist and around 64 percent were recorded as having mixed values. Current trends would suggest that approximately 18 percent could be coded as materialist and 20 percent as post-materialist in 2002, although this has not been empirically tested.

In Australia the younger or post-materialist cohort is depicted as the post war 'baby boomers' who unlike their older counterparts, the materialists, have no experience of war or depression during their formative years, and are on average seven times more likely to be active in groups supporting 'environmental protection' (Inglehart, 1997: 242). According to Carmen Lawrence, respondents of the 1990 Australian Electoral Survey showed that despite pessimism '...about the likelihood of society resolving [environmental] problems, they were prepared to trade-off economic development for environmental protection' a trend which has endured throughout 1990s (htm).

The Eurobodalla region, a popular retirement area, has a median age eight years above the national figure, and more than half of its adult population is aged over 54 years (ABS 2001). As such local residents would be expected to hold at least, if not a greater degree of materialist values in comparison to the Australian figures. Moreover, the Eurobodalla population, with their increased focus on materialist values, would be more likely to be

either unconcerned by the environmental issues raised by the charcoal plant proposal, or be in favour of the factory for its potential economic benefits.

This investigation tests Inglehart's theory, using the standard values survey, and its relationship to support or opposition for the factory. Follow-up interviews will expand our understanding of the reasons why residents chose to support or oppose. This will enable us to make comparisons between World Values findings, Australian data and the values of a group of rural residents, challenged by a planned development on the N.S.W. south coast.

Our hypotheses are as follows:

- 1 The materialist cohort in the group aged >54 will be more likely to express support for the proposed facility, although in decreased numbers compared to the Australian data, while post-materialists aged <54 will be more likely to oppose it.
- 2 Values are related to propinquity to the proposed site. A linear relationship can be shown between values and proximity to the site and these will differ from the Australian data.
- 3 The reasons given for opposition, amongst the older respondents, will vary from the traditional 'green' issues typically related to Post-Material environmental concerns. We argue that the overrepresentation of older activists is related to a perceived threat to their 'quality of life', which is not clearly represented by either Materialist or post-Materialist values, but is more in keeping with a perceived violation of their rights to have a say in decisions which affect their quality of life. Hence an explanation for older respondents, who theoretically should hold Materialist values, but who nevertheless select Post-Materialist value choices especially the Inglehart item 'giving the people more say in important government decisions'.

## METHODOLOGY

This research project is undertaken in two distinct phases: The first phase utilizes approximately 400 short surveys (quantitative), which address questions one and two. The second phase elaborates on the reasons for support or opposition through interviews (qualitative).

Cluster sampling led to the selection of six specific areas/towns around the proposed charcoal factory site all at different geographical distances from the proposed site (four local sites within 15km of the proposed factory and two approximately 65km from the proposed site). The local sites surveyed were Moruya, Mogo, Broulee and Batemans Bay. The distant sites were Narooma and Ulladulla.

The survey obtained data regarding age, gender, postcode, the Inglehart battery and finally support or opposition for the charcoal factory. Participants were asked to rank from a list of four alternatives, the two top goals which they believe are the most important for Australia. The alternatives were:

- A. Maintaining order in the nation;
- B. Giving the people more say in important government decisions;
- C. Fighting rising prices; and
- D. Protecting freedom of speech.

These four alternatives form the basis of Inglehart's theory, with people who chose as most important items A & C or C & A reflecting materialist values. Those who choose as most important B & D or D & B would be displaying post-materialist values. Those exhibiting mixed values are identified by their selection of A & D, A & B or B & C (which ever order).

Subjects who completed the survey were asked if they would mind being contacted in the next week for a follow up interview. Those willing to participate had their name and telephone number recorded on a separate list. Twenty subjects were randomly selected for interviews which were conducted to elaborate on the 'issue concern' aspects of support or opposition to the proposed charcoal factory site. Respondents were asked for (a) the most important reason, and (b) the second most important reason why they supported or opposed the proposal. These reasons were recorded and clarified.

After the interviews had been transcribed the major reasons for opposition and support were recorded in pre-coded check boxes and ranked in order of frequency, prior to analysis.

## RESULTS: Phase One,

### Frequencies:

Table 1. Frequencies for all survey variables (shown as one table for brevity)

Survey Item	Frequency	Percent
Age 55 years and over	146	38 %
Age under 54 Years	243	62 %
Male	173	45 %
Female	216	55 %
Values - Materialist	42	11 %
Values – Post-Mat’list	112	29 %
Values - Mixed	235	60 %
Location - Inner	222	57 %
Location - Outer	167	43 %
Support	100	26 %
Opposition	289	74 %

More people from the younger age group than the older were surveyed, however the cell counts were considered sufficient for meaningful results to be obtained.

More females than males were surveyed, however the ratio is in keeping with the demographic distribution of sexes in the region.

The ‘Values’ frequency table showed a departure from the Inglehart values expected for the region, as the Australian national surveys predict a ratio of approximately 18% materialist / 20% post materialist / 62% mixed. Here we see within our entire sample group, 11% materialist / 29% post materialist and 60% mixed. Caution should be considered here because cell counts for the Materialist responses are low.

The responses from the inner and outer regions provide a good balance, allowing comparisons to be made with confidence.

The frequency of opposition and support for the charcoal factory revealed widespread opposition to the proposal over the entire sample.

**Cross-tabulations:**

**Table 2. Age \* Opposition/Support.**

	Oppose	Support	Total %
Age – Less than 54	79 %	21 %	100 %
Age – 55 years & over	66 %	34 %	100 %

This table shows the influence of age on support or opposition to the charcoal factory proposal. For the Eurobodalla region there is strong opposition to the charcoal factory from within both younger and older age groups, however, people under 54 years of age were 13 percentage points more likely to oppose the factory than those from the older group.

**Table 3. Gender \* Opposition/Support.**

	Oppose	Support	Total %
Female	80 %	20 %	100 %
Male	67 %	33 %	100 %

Females are 13 % points more likely to oppose the charcoal factory than males. This is consistent with the results of other research into the composition of environmental protest groups, which predicts the involvement of a greater number of women than men in environmental issues.

**Table 4. Values \* Opposition/Support.**

	Materialist	Post-Materialist	Mixed	Total %
Less than 54 years	7 %	33 %	60 %	100 %
55 years or older	16 %	23 %	61 %	100 %

Table 4 shows that within the younger group (under 54 years old), 7% were materialist, 33% post-materialist and 60% mixed. Within the older group (those over 54 years), 16% were materialist, 23% post-materialist and 61% mixed. The overall values were 11% materialist, 29% post-materialist and 60% mixed.

Analysis of the results shows that the number of post-materialists within the over 54 years category is much higher than predicted by Inglehart as average for that age group. Inglehart predicts that of those not of mixed values, a dominance of materialist values will be shown in people over 54 years old. Instead we found more older residents than expected were post materialist in their values



**Table 5. Inner/Outer Location \* Opposition/Support.**

	Oppose	Support	Total %
Inner (< 15km)	81 %	19 %	100 %
Outer (> 15km)	65 %	35 %	100 %

Within a 15km radius of the proposed charcoal factory site, 81% of people are in opposition to the development. In the outer locations 65% are opposed. The overall opposition was 74%, and support was 26%. The inference is that although opposition to the charcoal factory is strong everywhere, those who live close to the proposed site are approximately 16 percentage points more likely than those in the outer region to be in opposition.

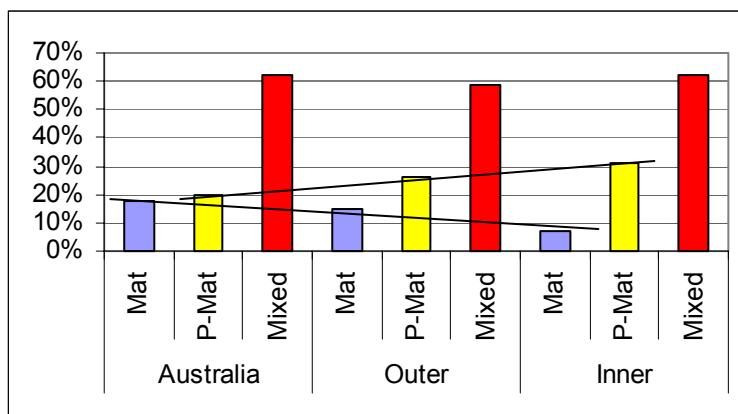
**Table 6. Values \* Opposition/Support.**

	Oppose	Support	Total %
Materialist	50 % (21)*	50 % (21)*	100 %
Post-Materialist	89 % (100)	11 % (12)*	100 %
Mixed	72 % (168)	28 % (67)	

\* Cell count sizes below 25 reduce the statistical inference power.

Within the materialist group, the ratio is 50:50 in support: opposition to the factory. However within the post materialist group, 89% are in opposition to the factory. The mixed values group is more closely representative of the average, showing 72% in opposition to the charcoal factory. Overall opposition is 74%.

These figures illustrate the strong opposition to the charcoal factory from both the mixed values group and the post materialists, with post materialists being 17% points more likely than mixed to show opposition to the factory. They also support the link between post materialist values and environmental activism, as in this instance post materialists are almost 9 out of 10 in opposition to the factory proposal.



**Figure 1. Graph showing materialist, post materialist and mixed value percentages across three regions.**

This graph clearly illustrates the linear effect of propinquity to the proposed charcoal factory site on values expressed. From this graph it can be seen that the increase in numbers expressing post-materialist values has come predominantly from the materialist values group. This strongly supports both aspects of the propinquity hypothesis concerning value predictions i.e. That a departure from Inglehart's theory will occur in a localised area centred on the Mogo village. These results demonstrate a departure from the Inglehart values, which were expressed in the outer zone, showing differences occurring in the area 15 km around Mogo village.

The figures generated by the first phase of the research demonstrated that age, sex, location and values all had an effect on whether people supported or opposed the charcoal factory, and on the values they expressed. The figures illustrated that women were more likely to be in opposition to the proposed charcoal factory, and that opposition was less likely to arise from the materialist group than the mixed or post-materialists. Propinquity to the site resulted in a higher level of opposition to the factory proposal, and resulted in a variation in the way people expressed their values when subjected to a standard Inglehart values survey. In order to explore the deeper reasons for these results, a secondary phase of research was initiated.

### **RESULTS, Phase Two:**

Further to the primary research, 19 individual respondents were surveyed in order to ascertain which issues impacted most on local concerns in the case that the proposed charcoal factory should precede. A model, 'E.L.S.E.' illustrated in table 6, was prepared to show and categorise the most prevalent issues raised, and indicate the level of importance they held for the respondents as either primary or secondary concern. The bracketed numbers indicate each mention as either a primary (1) or secondary (2) concern. Overall score for each issue is recorded in bold in the column next to it.

**Table 7. ELSE Model Showing Distribution of Issue Concerns Grouped into Four Themes,**

**(Numbers in brackets denote wither most important (1), or second most important (2) issue concern. Bold numbers represent overall issue rating).**

<b>ECONOMIC</b>		<b>LIFESTYLE</b>		<b>SAFETY</b>		<b>ENVIRON- MENT</b>	
Declining House Prices (2,2)	<b>4</b>	Indigenous Cultural Activities (1)	<b>1</b>	Road Safety (2,1,1,1,1,2,2,1,1)	<b>12</b>	Water Pollution (2,1)	<b>3</b>
Cost of Road Maintenance (2,1)	<b>3</b>	Bushwalking (1,1)	<b>2</b>			Truck Noise/Air Pollution (2,1,1,1)	<b>5</b>
Declining Tourism & Tourism Jobs (1,1,2,1,1)	<b>6</b>					Flora/Fauna Degradation (1,1,2,2,2,2,2,2,2)	<b>16</b>
Water Supply (1)	<b>1</b>					Factory Air Pollution (2,2)	<b>4</b>
Priority Score for Theme	<b>14</b>		<b>3</b>		<b>12</b>		<b>28</b>

Opposition to the charcoal factory is clustered around four major issue groups. These groups are based on four main themes: Economics, Lifestyle, Safety and Environment. Lifestyle and environmental problems can be considered more likely to be post-materialist concerns, whilst economic concerns are more closely linked to materialist values. The concern about road safety does not seem to be attributable to either materialist or post-materialist concerns, emerging as a quality of life issue.

Apart from the classic ‘green’ environmentalist concerns about flora and fauna, we can develop another main theme area. By combing the ‘truck related’ issues of road safety, road maintenance and truck based pollution this new second major theme area scores a rating of 20 points and Environmental concerns now becomes 23 points. Clearly, these two issue concerns, ‘green’ and ‘truck related’, rate much higher than any other issue concerns; the next major theme, declining tourism and tourism jobs, rates at only 6 points.

Comments made during interviews regarding environmental concerns include:

‘What they are doing to our land... its terrible (A local Aboriginal resident),

‘How could they destroy things [the trees and animals] that way’,

‘When I look at the trees and the bush and the blue mountains, then I know why I belong here’,

‘How can they cut down all our beautiful forests, all those trees just to burn them’

Many of those being interviewed commented that they came to live here because of the magnificent scenery of the area. Some comments were;

‘definitely the scenery is the most beautiful anywhere...’

‘My husband and I came here because it is so beautiful.’

Just as worrying to the local residents is the issue of increased truck movements on our roads, clearly shown as this subject was mentioned by three quarters of respondents at one or another level. The combined number of references to trucks as a source of concern is 15 and the priority score is 20, making it only slightly less an area of concern than the environment. Comments by respondents such as; ‘All the extra big trucks on the road... I am an old lady now and these things frighten me. I could get into an accident’, and ‘The trucks will make the roads unsafe. I drive to Canberra often and it is already dangerous’ reflect the genuine concern residents, particularly older residents have with this issue. Road maintenance, and the increased pressure extra heavy vehicle traffic might place on our roads was a worry for some residents also. One resident commented; ‘The roads are crumbling at the edges already, imagine what that will be like [with the predicted extra truck movements]’

Economic issues such as the devaluation of real estate prices in the area and the potential loss of the tourist dollar and jobs this represents, also impact on the landscape of opposition to the charcoal factory. These are factors expected to cause apprehension more for people with materialist values, yet despite the proportionally smaller number of people within this values group in the area, this issue group was mentioned by half of the people being interviewed.

Our research was initiated by an observation; that the groundswell of regional protest activity elicited by the charcoal factory proposal included greater numbers of older people than would be expected. Inglehart’s values based theory predicts that those over 54 years old will be more likely to exhibit materialist values and be supportive of a development with perceived economic benefits for the area. Inglehart also links post materialism to the support of environmental issues over economics.

We firstly conceptualised that a quality of life issue was overriding local residents’ expected values, causing a rise in post-material values within the older community members in response to a perceived threat to their lifestyle. Secondly, our concept was that the effect on values increased with propinquity to the proposed site of the charcoal factory.

We operationalised our concepts in the form of a survey to ascertain actual measures values and support or opposition to the factory. Secondly, in order to find out why the variation was occurring, we conducted a more qualitative research in the form of interviews asking respondents their primary and secondary reasons for opposition to the development.

This research has revealed that on average, three out of every four local residents are opposed to the factory, however when examined with relation to propinquity to the proposed factory site, there is much stronger opposition from residents within a fifteen kilometre radius. There has also been a departure from normal Inglehart values shown in propinquity to the contentious site, showing as an increase in people exhibiting post-materialist values, and a corresponding decrease in materialist values.

These findings support the propinquity hypothesis put forward in this research; that in this localised incident, Inglehart's values theory will prove an invalid indicator of public response to the charcoal factory proposal, and that the overriding of Inglehart's theory will occur in a localised area centred on the Mogo village. These results demonstrate a linear relationship between values/opposition and propinquity.

One explanation for this groundswell of protest might lie with the questions asked in the Inglehart survey. The local people may feel that their democratic rights having been violated. The choices 'b) More say in important government decisions' and 'd) Protecting freedom of speech' as the issues they feel the government should be most concerned about indicates the feeling of the residents of the area that their voice is meaningless to the government. The anger, confusion and disappointment local people feel about the state government's decision to go ahead with the development despite their clear opposition is reflected particularly in 'b)' of the Inglehart battery; 'More say in important government decisions'. Many people have chosen to live in this area believing it to be 'The Nature Coast', free of heavy industry and pollution. They feel the government has turned that into an empty slogan.

The propinquity effect shown in this research may be caused by a larger than average number of post-materialists living in the immediate area of Mogo, or may be the result of other factors not empirically examined in this project. It is important to remember that Post-material values are not necessarily the opposite of material, and are affected only when material requirements have been met. In this sense, 'post' may be thought of as 'beyond' or 'over'. Road safety, the broadest area of apprehension for those in opposition to the factory, is not a concern typically linked to either materialist or post materialist values. We feel it is a quality of life issue, affecting all residents despite their values tendencies.

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