Perceptions and Attitudes to Air Pollution in an Asbestos Mining Town 1)

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Abstract: The ever-increasing awareness of the population regarding environmental issues, and especially pollution, is a relatively recent phenomenon. Several authors have considered these relationships within a phenomenological framework. As a preliminary consideration, we have attempted in this study to isolate geographical sectors with variable exposure to air pollution. We have taken readings from seven stations for the period of January 1977 to December 1980; with the help of the difference of means test, we have singled out the significant variants. Based on these findings, we have used the gravity model to determine the strong, average, and weak sectors of exposure to total dust concentration in the air.

During the summer of 1980, we submitted a stratified sampling embracing 229 persons, compiled by a telephone questionnaire, with a view to assessing to what extent the population was concerned by pollution in the surrounding air, evaluating public opinion on alternate solutions to resolve this problem, and generally investigating whether the public conscience was sufficiently crystallized to embark upon local environmental protection measures. The Quebec mining town of Thetford Mines, an important centre for asbestos extraction, was used for this investigation.

The findings indicate that the population has a generally well-perceived notion of pollution even if water pollution was stressed more than air pollution. However, the perception of air pollution is dependent on distance from the mine and consequently, on exposure sectors to total dust concentration in the air. We assembled, into three groups, some 14 alternate means to attack pollution. The most exposed sector favoured indirect actions, while in other sectors direct measures were accentuated. Socioeconomic standing and especially education level help explain perceived differences between types of pollution, whereas sex and age are statistically significant for the choice of alternate means. Length of residence has very little influence. Generally, it does not seem that the respondents' opinion are clearly and coherently crystallized. This is understandable if we accept that the respondents appear to dissociate water from air pollution. There therefore exists a lack of apparent agreement between attitudes concerning means and attitudes concerning ends.

The ever-increasing awareness of the population regarding environmental issues, and specifically pollution, is a relatively recent phenomenon in many parts of the world. Swan (1972) has drawn up an exhaustive table of findings on public perception and attitudes to air pollution. We can classify these findings into two groups: findings concerning the evolution of opinions and beliefs as explanatory factors for the conduct of decision makers, and findings highlighting public opinion. For the first group, we refer to the works of Sewell (1971). For the second group, the research conducted by O'Riordan (1971), Wall (1973), and Sharma et al. (1975) is important. For both groups, the authors acknowledge that human behaviour in respect of and reaction to the environment may only be understood when examined by way of psychologic processes.

The phenomenological approach in geography has been the subject of a significant amount of writing and has been

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commented upon by, among others, Saarinen (1969) and Craik (1971). In the first instance, geographers, following the practice of psychologists, have endeavoured to define how perception of the environment arises. According to Bruner (1966), perception is inseparable from the action currently employed and from the individual who directs this action. Lowenthal (1971) emphasizes, on the basis of work on mind charts, that action is first of all based upon representation of the environment. In the second instance, geographers are interested in the evaluation of the environment. This is entirely connected to perceptive elaboration since evaluation cannot take place without identification; and inversely, structure evaluation modifies perception and mental representation. In reality, cognitive and normative processes continually interact. In other words, perception of the environment is not only a function of information contained in the environment, it is also a function of the individual and his relationship to the environment. Theoreticians of cognitive dissonance assert that the choice of sensory stimuli occurs in such a way that this solution corresponds to the overall vision of the individual. It can therefore be said that perception is stimulated not by the surroundings but by what an individual expects from the surroundings; the environment which the individual accepts becomes the product, not the cause of the perception.

Perception of the Environmental Risk

Perception of the environmental risk has been indirectly treated through investigations by geographers of natural catastrophics (Mitchell 1974). Research at the University of Chicago and the University of Toronto has attempted to explain the spontaneous trend of inhabitants to set up house at the same location after a catastrophe has occurred (floods, earthquakes or tornado). On quite another matter, Burton and Kates (1964) have tried to adduce conclusions on the subjectivity of the perception of the environment and specifically, cognitive conflicts between decision makers and residents. Barker (1974) has evaluated perceptive differences between students, on the basis of their education, with respect to air pollution. He has shown how these students differ in the selection of information and in the manner of using it.