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THE DOOMSDAY THEORY AND ITS IMPLICATIONS ON URBAN PLANNING.

(My name is R.S., from the I.S.I.G.)

I'd like to draw the attention of this distinguished audience to some possible sociological (or indeed philosophical) implications of the fact that the next year will be the "year of conservation".

I think that it is no mere coincidence that the conquest of the moon is followed by a world wide concern for the conservation of the earth. Technology is liable to bring the man on the moon and to make his old home quite impossible to live in. And I am referring not only to the obvious threat of devastation through the technology of war; this threat has long been socially perceived and a big social machinery has been set up in order to bring it under rational control. Rather I am referring to the more subtle threat of devastation through technology of peace. Industrial, technological, urban society is making the planet inhabitable because it wastes resources and pollutes the sources of biological life.

Of course, once the scientific, rational and technological society perceives the danger, it is quite capable to check it. Technology has the know-how that is needed to stop many forms of waste and pollution; but in the first place, it is doubtful whether a complete system of control can be worked out, and, what is more important, made to last forever; in the second place, a complete system of controls set upon man's activities in the environment means a complete control of the environment itself. This has many practical difficulties; it implies advances in the natural sciences far beyond their present state; it implies a thorough knowledge of the laws by which the ecological system works. But first of all it implies a bridging of the cultural gap between natural sciences and technological on one side, and human institutions and organization on the other. An effective control of the environment means a total, global control. But if this is the goal -and there is no

way of avoiding it, given a) the growth of technological possibilities, b) the growth of natural resources consumption rate c) the growing expectations as to the standards of living and d) and the population growth, it means that a global system of controls on the physical environment implies the setting up of global institutions; eventually, only a world government can carry out this job. Historically it is a very well known fact that centralized governments, like the ones in Egypt and Mesopotamia, were a response to the challenge of controlling the physical environment -then, mainly through irrigation. The huge task of controlling the whole ecological system of the earth demands a hugely complex centralized world organization.

Now these alone are no mean problems, for students of political sociology and organization science. But I'd like to draw your attention to a perhaps less obvious fact: given the need to adapt the natural environment to human needs, and given the need to control the unintentional effects of these activities, the result is bound to be an everincreasing complexity of the system of control. We are going to build an integrated system, in which the physical environment is internal to the social system, because it is shaped, created by it. It is going to be a wholly artificial system. Even national parks and reservations will be artificial, because their persistence will depend entirely upon the effectiveness of the technological and socio-cultural protective mechanism. Now, systems have properties which are a field of study in their own right. The natural ecological system is a homeostatic one, tending in any case merely to the elimination of tension and preservation of balance. Most artificial system on the contrary are endowed by man's will with specific ends. This makes a big difference: machines can easily break down, when a) the conditions under which they work go beyond their builder's previews and programmes; b) there occurs a human mistake in their conception and operation c) there occurs a mechanical failure.

There is no purpose-oriented mechanism, however advanced, that can

rule out completely the possibility of total break down.

If we look at the complex technological society- physical environment as an artificial system, as a huge machine, then we know with mathematical certainty that, because of the analytical proprieties of such system, some day the entire system will break down completely. This is something that Robert Kates, during the environmental planners symposiums at the University of North Carolina 1965-1966, called the Doomsday Theory, following from the hypothetical law of the Conservation of Variance; and is also related to Freud's observations on the death instincts: the growing complexity of biological system (organism) piles up a strain, a painful tension which discharges only with death-that is, the total break down of the system; whereas simple system, such as the amoebas, practically know no such experience.

So there is not only the huge present danger of total annihilation through human failures and mistakes in the war and defence subsystems; but there will be in the future a growing risk of annihilation through accidental breakdown of the subsystem controlling the physical environment. If they ever will succeed in avoiding the Sword of Damocles of war technology, men will go living under another one - the peace technology which controls the physical environment.

There seems to be no way out for this unpleasant situation but a total refusal to technology and a regression to the world of primates. Although hints of a growing willingness to go in this direction are by no means <sup>absent</sup> in our society - witness many youth movements. I think that there is a prevailing value judgement against it; which I happen to share. <sup>A</sup> Partial solution -that is, <sup>an</sup> attempts to push the inescapable Artificial Domsday so far that it loses ~~any~~ relevance so far as we are concerned, is a self restraint of Technological Man in the use of his abilities. This means a lessening of the assault on nature, a limitation of man's intervention aimed at the modification of nature. This can be done in two ways: a limitation in the standards of living, which would bring about a reduc-

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tion in the destruction of resources and the production of waste materials and would also reduce the need of general modification of the environment; or it can be done holding up the standard of living but limiting the population.

The latter will probably be the chosen course of action. In any case it should be clear that either we refuse technology totally -ascetically resisting even Gandhi's weakness for the sewing machine-or learn to use it rationally, setting up the social values and institutions in charge of its use in the comprehensive, global environmental planning.

I hope these remarks will help also those who are not particularly fond of wild animals, strange plants, free-flowing creeks and everything we call Nature -and many sociologists, all bent on the appalling problems of human society, have no such fondness- to understand the deep reasons underlying the conservationist movement and the reasons of the ever-growing social and political relevance of this value. It is no longer a characteristic of self-centered poets, and artists, or of exceptionally philosophical minds; nowadays the macroscopic devastations, on man's habitat as well as in the habitat of other biological species, have made many thoughtful persons aware of the functioning of the ecological system, and of the necessity to preserve it. But beyond this rational awareness there has always been, in the technological, urban, civilized man, a urge to be in contact with nature, to feel himself not over it, not against it but inside -in the womb as the Italians unwittingly say- of nature. The need of gardens, parks national reserves, outdoor recreation is one of the primary needs of our societies, and the establishing of such opportunities one of the major tasks of environmental planning; it is one of the biggest headache of urban planning. The dissatisfaction of living in a wholly artificial environment, severed from nature, emerges once the other primary needs are satisfied; it is probably connected with an unconscious feeling of insecurity, an obscure sense of death and doom connected with technology, a sense of meaningles-

ness of the individual existence outside the cosmic cycle of nature.

I would not bring these interpretations too far. There are many implications on several systems of actions that could be followed. Concerning urban planning, I would like to remember that the universal need for natural space, outdoor recreation, contact and interaction with nature leads to an extensive and spread-out type of city. This type of city has many problems; but they are mainly financial problems; financial and political decision makers must be put in a position to be willing to meet them, if the degree of social happiness is to be increased. There are many beautiful examples of well planned extensive cities (along, of course, with terrible ones). In order to satisfy the growing needs for a green environment, the preference for individual house-and-garden, for choice residential sections, people's needs as to residence should be taken into account, and with high priorities, as a locational factor for industries: that is, industries should move where their employees can enjoy pleasant residences (provided that they do not spoil this pleasantness). That is, the higher salaries and the shorter working hours make leisure time an ever stronger determinant in people's motivations and choices; and as most leisure time is spent within the family, around the house, the quality of this environment is of ever growing importance in people's choices- including the choice of the job. So the aptitude to become an attractive residential section is an asset for a place's possibility to draw industries-or a certain kind of industries. This is what Dieter Schröder, Edgar Salin and other German planners mean when they talk of residential attractiveness as a factor of industry location.

This is just one line of thought that follows from the rising needs of escaping from the patently artificial environment, and living in something which recalls nature. Of course, it is not real nature. It is a man-made "natural" environment. There is no way out of it, short of complete refusal of technology and reversal to the jungle. But it looks like nobody-not even the most serious flower's children-really want it. Any way, I don't

think that, even if universally desired, such a reversal would be feasible.-