
Future Alternatives
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FUTURE ALTERNATIVES

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In FUTURE SHOCK, Alvin Toffler uses terms that now seem very different, but at the time of this writing 1973-1975 were synonymous. They are Toffler's SUPER INDUSTRIALISM and the common usage today of POST INDUSTRIALISM.

At the time, Toffler meant that SUPER INDUSTRIALISM was the third wave of society. Corporations that made goods like cars would be sent overseas. The third wave society is based on knowledge and knowledge workers. One needed numerous skills and intelligence to survive. Today, that is generally POST INDUSTRIALISM.

The theory has held up but in a negative way for the United States. Two out of three jobs that are created in this country are service workers who make something near or around minimum wage. The other job is one that is well paid , but requires a great deal of education. That means usually concrete oriented thinking, math oriented, and technological in emphasis. At the time this is written, in terms of job creation, the job most likely to emerge is a clerk and the salary of $20,000 a year. Job advancement is limited.

We have used the two terms intermittently as was the practice of the early to mid 70's.

Further, FUTURE SHOCK is like CULTURE SHOCK. One is overwhelmed with the changes confronted and disoriented and depressed about the future. In CULTURE SHOCK , one is overwhelmed by a new culture and feels disoriented and depressed.

Our views are similar to Toffler's, and one can read our summary. Please take into account that this was finished 35 years ago. We are accountable for both what really happened and indicated in the book and our mistakes.

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ABSTRACT

The focus of the study deals with the socio-economic impact on the life styles to the year 2020. The importance of life styles is viewed in terms of how living patterns retard or encourage urban spread.

Chapter One deals with a discussion of the field of futurism and some assumptions made by the researchers.

Chapter Two deals with sociological implications of man to land relations.

Chapter Three deals with urban systems encompassing the sociological and human biological aspects of urban growth.

Chapter Four deals with political aspects of population spread and Chapter Five with the economic implications.

Chapter Six deals with specific, but highly visible considerations of housing, and the Seventh Chapter is concerned with transportation.

Chapter Eight summarizes the major elements of the study.

The findings include the following. The authors used three alternative futures. One future, and the basic one discussed, "Super Industrialism," predicts a future based on projections of current trends. Basically, this scenario envisions a highly technological society and a population which is moderately increased and widely distributed about a city. The "Post Industrial Society" is one in which

there is a large consumption of energy, dominance of the individual auto, and the preponderance of individual family housing patterns. The majority of new growth in the city is at its fringes.

A second future, "The Green Revolution," (or a planned community), envisions a system dramatically different than current trends. It is based upon a post-Keynesian government in which urban growth is controlled and central cities are revitalized with modern mass transit systems, new multi-dwelling housing and green belts. It also assumes a reduction of tensions among social classes and ethnic groups. Population increases would be reduced to zero level growth or less. Domestic expenditures at the federal level would take priority over defense and armament expenditures. Other characteristics include the preservation of small farm communities, introduction of new towns, and the promotion of satellite cities.

A third alternative was entitled "Restoration City." Under this concept a combination of promotion of the market system and the enhancement of nation and local public security systems prevail as there are major fluctuations in the market. Due to severe economic downturns, households double up as grandparents, parents, and children live under the same roof. Some type of mass transit system is necessary as increasingly large portions of the population are not able to obtain credit for suburban housing and auto purchases.

Traditional social, religious, and political values are implemented; large populations may occur. These added numbers may be used in expansion-oriented national policies as federal officials select to destabilize neighboring and foreign territories to encourage outmigration to these newly annexed areas and reduce population pressure. In terms of city growth, suburbs would flourish but outward pressure would be reduced by population impaction of numerous middle and lower income residents.

The authors did not make or assert preference about the future alternatives. Rather, they suggest that the "super industrial state" is the most probable.

Preface

Generations write each new chapter to the future. Here we have attempted to compile and synthesize forecasts of coming events.

Each chapter selects a discipline and searches the future in that discipline.

The first chapter describes the field of futurology and the remaining chapters review the future from the perspectives of sociology, demography, political science, and economics. Two special chapters are also included dealing with housing and transportation.

There is a brief summation in which certain conclusions are suggested, but any major conclusions are left to the reader.

The presentation is directed toward socio-political considerations. One of the major questions implicitly raised is whether or not the country will move forward with centralist tendencies or rather drift dramatically

to the right or left. Recognizing this, we have directed some attention to a U.S.A. that might experience major depression or military rule. Omitted however is reference to total, or near total, nuclear destruction. For, given this scenario, little planning or forecasting would be required.

We have also attempted to present, via footnotes and bibliography, as complete a reference source in these areas as probably exists today. We wish to thank Mrs. Beard of World Futures Society and Dr. John McHale of the Center for Integrative Studies at the University of New York (Binghamton) for their special assistance, and our typist Ms. Tricia Thennes. The authors, however, accept the responsibility for any errors, whether in judgment, omission, or suggestion.

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Chapter One

Futurology: A State of the Field

Futurology: A State of the Field

Daniel Bell, an American futurist, notes that: "the year 2000 has already arrived, for in the decisions we make now, in the way we design our environment, and thus sketch our lines of constraint, the future is committed"[1]. Though social and technical forecasting are filled with jargon that connotes contemporary quantification, empiricism, and future model building, the field is an ancient art. Bell's comment not only notes the importance of the future of forecasting but also indicates the validity of futurism as it has been used in the past. In social institutions the old can structure the new. Each generation makes commitments consciously or unconsciously that give rise to new behaviors and new physical structures. Early data on preliterate systems indicates that magic, science, and religion all competed in differing ways to project the future.[2]

Throughout history, prediction has come from all sectors of the population, from visionaries to entrenched

establishmentarians. On short range projects, prophets, especially those who have committed their forecast to print, have had to enjoy or suffer the consequences of their prediction.

Gerald Clarke[3] has noted that the field of prophecy has generally not been fruitful. Most predictions have been proven wrong and the occupation of forecasting has been risky. The field is full of faulty forecasts. The Library of Congress (April 10, 1967) has gathered a large collection of poor judgments in technical, economic, and social forecasting. Others have come to similar conclusions.[4]

In terms of the social sciences, one of the first forecasters was an essayist and philosopher, Thomas Malthus. Malthus' prediction was of plight and misery for the lower classes in England. He based his projections on population increase and the lack of agricultural goods to feed the poor. Although there are neo-Malthusians who accept his projections feeling only that he erred in terms of perception of the agricultural revolution, Malthus on balance was wrong.[5]

Jules Verne was correct in his prediction of space flights.[8] And, in the 1920's Buckminster Fuller predicted the present environmental problem as well as the great technological leap which occurred after World War II.[9] Much of De Toqueville's description of the U.S. appears to be germane.[10]

Recently, forecasting in business, economics, the social sciences, and other areas has emerged. Scholars, with the help of the computer, have tended to veer away from concrete and specific predictions in favor of alternative models, parametric speculation, and projection.

Shonfield[11] has noted the emergence of the field of "futurology", and though he is optimistic, he does raise some questions about the limits of the field. He importantly notes that futurists should avoid specificity.

In the last quarter of the century, the social, technical, and economic impact of the future has become significantly important. (The field of futurism appears to be growing into voluntary groups, research organizations, and has received sponsorship from federal as well as multi-national corporations).[12] Academic courses

dealing with the future are increasingly being offered.[13] McHale's[14] study of the field of futurism indicates nearly 3000 people involved in the area, with most occupied in free lance, corporate, or government work.

Due to the nature of the topic, both the theoretical assumptions and methodological approaches are diverse and varied. Some propose viewing the future in a Hegelian framework.

The Hegelian approach in futurism is not necessarily unique. Based on the premise of a conflict of forecasters, this approach deals with forecast, counterforecast, and revised forecast (the new synthesis). Its attributes are, included consensus and test of ideas, but it is flawed in the sense that the original forecast may be in error or that single particular elements are wrong.[15]

The "zig-zag" or morphological design tries to avoid "vertical" (Aristotelian, sequential) thinking. Rather, lateral analysis is emphasized. Accordingly, one must not develop a pattern, but rather restructure it. In vertical thinking, one proceeds on a step-by-step process. In this

method, one avoids sequence. Its purpose is not so much to find an answer, but to provoke a new unstable structuring of the situation and let the latent possibilities of the development of new ideas occur.[16]

Analogous systems is at its basis inductive logic. Extrapolation is based on the similarity of a present system and a proposed future model. At times the analogy design is called a railway system because it alludes to the fact that one system passes through or precedes like a train and another is following, but some distance back. The analogy suffers in the sense that the original model may be historically unique, the analogy loose, or that the future generations are aware of the previous outcome and can raise alternatives to change history.[17]

Forecasting by analogy can involve the use of some past historical event or a well known process in order to predict a future occurrence. There must be sufficient resemblance in the two incidents being compared for the earlier one to be an accurate predictor of the future one. The method of analogy is most useful when the data required

for more precise methods is not available. Its most obvious difficulty is in determining whether or not the critical factors present in the original situation are likely to be present in the future.

Cyclical projections look for non-chance regularities over various time sequences. This approach assumes that the observed non-chance phenomenon can be recorded. Non-chance regularities can also individualize trends in terms of future change.[18]

Dr. Olaf Helmes and Dr. Norman Dalkey of the RAND Corporation developed the Delphi technique of forecasting the future. The Delphi method involves the use of a panel of experts. Each expert is asked his opinion on the future developments in a particular field. The opinions are kept anonymous. Each member of the panel is then given feedback on the way other panel members replied to questions and a second round of forecasting begins. This process is repeated until a fairly consistent group forecast emerges.

Some of the advantages of this method are:

1) The workloads for the experts on the panel and the coordinator are reasonable.

2) It avoids the biases of a single expert.

3) The anonymity of the members avoids undue influence by a single person as biases produced by the interacting personalities in the group.

Some of the disadvantages include:

1) Excessive amounts of time spent in obtaining a consensus in this manner.

2) It is expensive.

3) It depends on the competence of the panel members and ability of the administrator.[19]

Trend line merely assumes that current phenomenon will continue in the same degree as presently experienced. Thus, if the population is increasing an extra one per cent a year, future projection will continue on this assumption. Trend lines have been useful for short-range projections, but err on longer estimates because of societal modifications.[20]

Envelope forecasting emphasizes the change of technology and its impact on a social system. It encourages one to think not only of change wrought by technology, but the synergism of many such changes. The envelope curve represents the values of the technical attribute over time, without regard to antecedent events. To the envelopecurve, one adds numerous devices. From the total picture, one draws a smooth curve tangential to all the curves of the individual devices. This method indicates the general trend of technological innovations.[21]

Scenario writing assumes that large complex systems in terms of future system require descriptive analysis as opposed to qualitative ones. They generally are loosely structured overviews of alternative future systems. For specific elements, however, computer generated data is used. In some instances "science fiction" or "speculative fiction" writers are utilized in this method.[22]

Social-cultural forecasting involves a qualitative description of alternative future systems. It differs from scenario writing in the sense its emphasis is upon the economic infra structure and social organization.

In a sense it is a system approach which intertwines both a Marxian and functional analysis.[23]

There are numerous other methods which are in many ways subsets of those listed above. One might want to refer to articles by de Jouvenel, Martino, and McHale.[24] Research in the area indicates that socio-cultural forecasting, scenario building, Delphi technique, and trend lines seem to be the most popular.[25]

These varying approaches, which include both their own theoretical assumptions and the methods to initiate them, may best be thought of as overlapping rather than mutually exclusive. Parenthetically, controversy appears to be brewing as to the general nature of the future. The controversy deals with the progression or integrative theory which promises that the future is generally beneficial to all, as opposed to the projection that ensuing social and economic malaise (such as doomsday or Walden theories) will occur.

Though the field of social and economic futurism is indeed immature and sometimes wrong, we feel there is justification in considering it an important discipline.

Years ago, the Hoover Commission successfully predicted certain aspects of later life styles in the United States.[26] As Ogburn has noted, social institutions are relatively slower to change than technical and physical structures.[27] This can give one some stability in terms of our future projection.

One must make projections broad enough to indicate limits, but not so wide as to be ultimate tautologies.

There is a fundamental common sense as well as logic in forecasting. As Bertrand de Jouvenal notes: "We have to make wagers about the future; we have no choice in the matter".[28]

Chapter One

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Chapter Two

Social Implications

Social Implications

Introduction

This brief chapter summarizes the changes which will have impact upon your life-style during the next 50 years. It will look at "super-industrialism," "post-industrialism," and the cities to and from which you will move.

Early History

The beginning of social organization can be traced back to highly mobile, sparsely populated human groups which survived by hunting animals and gathering crops.[1] Early city life came after the domestication of animals and the movement towards an agrarian economy.[2] Though the history of the city can be traced back to 3500 B.C., urban life as an American national phenomenon did not emerge until the end of the 1920's. The basic transition from early hunting and gathering units passed into agricultural communities and from there, with the assistance of industrialism, the city emerged. As Toffler notes,

the majority of the people in the world today live in agrarian settings. About 25% of the world, however, reside in an industrial milieu, and a small 1% to 3% now live in a super-industrial world.[3]

Super-Industrialism

People found in small enclaves in and around the megapolitan centers of the west and mid-Atlantic sea belt are thought to be residing now in tomorrow's world.[4] Much of their life is based on mobility, transience and rapid change. Industrial or super-industrialism as suggested by Bell, Boulding, and Toffler is a highly mobile world triggered by rapid travel, instant communication, and supported by a service sector economy.[5] The bases for their projections are generally evolutionary in character, and are for the most part based upon trend line assumptions.

According to these premises, what will the country look like some 50 years from now? Toffler sees mobility as a big factor that will continue to diminish culture differences among various regions in the country. If

he is correct, even the Plains region may have characteristics similar to the highly populated coastal areas.[6]

However, rapid and even fluid movement of people is but one aspect of this widespread version of the future. Other changes include 1) higher productivity and improved efficiency of the industrial system,[7] 2) less standardization and conformity with the rise of specialty subcultures,[8] 3) continuance of a Keynsian market system,[9] 4) less material scarcity for the occidental world and in particular the American social system,[10] 5) rapid turnover in media personalities, art forms, and language usage.[11]

Beckwith in his The Next 500 Years envisions an industrial world with increases in specialization, professionalism, large-scale production, automation, and the growth of monopolies. He also indicates that education will continue to remain important along with scientific research. Population will increase along with "real" income.[12]

Herman Kahn sees an increasingly sensate, bourgeois, centralized world which is more westernized as well as urbanized.[13] Esfandiary projects a world of increasing individual rights with world wide universalism.[14] A General Electric study indicates there will be increases in leisure, decentralization, rationality, and social justice.[15]

As the future world appears to be increasing its urbanization (by the year 2020, around 80% to 90% of the population will live in urbanized areas), the farm appears to play a new role. The future farm will probably be large family corporations working huge biological monocultures.[16] Land value will increase as farmers produce more and more food. There will be few small scale farmers.[17] The farm population will dwindle from 3.5 million today to 1 million farmers or less.[18] Strategic financial accounting, planning, and large air lifted machines will be used. Productions will be greatly increased.[19]

Post-Industrialism and Technology

In the technical world the changes are, however, more rapid.[20] Moore projects elaborate communication centers within the home.[21] Asimov envisions more personal air travel for the individual citizen.[22] Toffler sees ocean farming, weather modification, genetic control, new forms of reproduction, and elementary robots.[23]

Kahn and Weinberg see these kinds of technological changes very likely to occur by 2000:[24]

> Human hibernation for relatively extensive periods (months to years).
>
> Improved capability to "change" the sex of children and/or adults.
>
> Physically non-harmful methods of overindulging.
>
> Chemical methods for improving memory and learning.
>
> Simple techniques for extensive and "permanent" cosmetological changes (features, "figures", perhaps complexion and skin color, and even physique).
>
> Stimulated and planned and perhaps programmed dreams.
>
> Artificial moons and other methods for lighting large areas at night.

The most comprehensive list of technical changes was indicated by a Delphi forecast and it is listed here.[25]

Scientific Breakthroughs Forecast by Delphi Experts

1970-1980:

Economically useful desalination of sea water.

Effective fertility control by oral contraceptive or other simple and inexpensive means.

Development of new synthetic materials for ultra-light construction.

Automated language translators.

New organs through transplanting or prosthesis.

Reliable weather forecasts.

Operation of a central data storage facility with wide access for general or specialized information retrieval.

1980-1990:

Reformation of physical theory, eliminating confusion in quantum-relativity and simplifying particle theory.

Implanted artificial organs made of plastic and electronic components.

Widespread and socially widely accepted use of non-narcotic drugs (other than alcohol) for the purpose of producing specific changes in personality characteristics.

Stimulated emission (lasers) in X and Gamma-ray region of the spectrum.

Controlled thermo-nuclear power.

Creation of a primitive form of artificial life (at least in the form of self-replicating molecules).

Economically useful exploitation of the ocean bottom through mining (other than off-shore oil drilling).

1990-2000:

Feasibility of limited weather control, in the sense of substantially affecting regional weather at acceptable cost.

Economic feasibility of commercial generation of synthetic protein for food.

Increase by an order of magnitude in the relative number of psychotic cases amenable to physical or chemical therapy.

Biochemical general immunization against bacterial and viral diseases.

2000-2010:

Feasibility (not necessarily acceptance) of chemical control over some hereditary defects by medication of genes through molecular engineering.

Economically useful exploitation of the ocean through farming, with the effect of producing at least 20% of the world's food.

Biochemicals to stimulate growth of new organs and limbs.

2010-2020:

Feasibility of using drugs to raise the level of intelligence (other than as dietary supplements and not in the sense of just temporarily raising the level of apperception).

> Man-machine symbiosis, enabling man to extend his intelligence by direct electromechanical interaction between his brain and a computing machine.
>
> Chemical control of the aging process, permitting extension of life span by 50 years.

Importantly in space, a lunar colony and more sophisticated space explorations may exist.[26]

Primary Institutions of the Future

Prognostications of the most basic human group, the family, indicate that it too will change somewhat. Though social institutions do not change as rapidly as technological applications, there will be some variance occurring in the family.[27] Many indicate that the neo-local family will change slowly but will continue to exist among the majority of the population.[28] Women's status will improve with gradual sex role changes, improved job opportunities, and day care centers.[29] The number of children per family will decline, sex of the child may be chosen, and there may be new forms of adoption.[30] Young children may choose wider variations in the sex role with the basis of the role becoming unisexualism.[31] Among a significant minority of the population, new non-bloodline "stem"

families and communal systems may emerge.[33] Importantly, mate choice may be more determined by continuity of personalities between individuals than sexual excitement or romantic love.[34]

Secondary Institutions of the Future

It is felt that voluntary associations will change in the future toward more "affinity" groups.[35] One institution of particular importance is the Organized Church.[36] There are many predictions which emphasize that religion will continue to be expressed in conventional ways and that there will be a considerable proportion of the population retaining traditional beliefs.[37] However, some changes appear to be emerging. First, the modernist churches (e.g., Presbyterian, Methodist) appear to be losing members and financial support while fundamental groups are gaining. Second, churches on the political left and humanist churches appear to be growing, even though their organizational strength is not as pronounced.[38] Some see a closer alliance between the social sciences and the Church, and increasing stresses in the

ministerial role.[39] Others have raised issues about the internal form of the Church.[40] As an overview, the future of religious systems appears to be polarizing around conservative and liberal churches. There is also a new emphasis of emerging small congregational-oriented churches which can re-emphasize primary ties.

Formal associations still appear to be growing and the large corporate organizations will still be the dominant form.[41] The static, conformity-oriented bureaucracy as defined by Whyte, is likely to give way to the new adhocracy as described by Toffler and Bennis.[42] As Bennis notes:

> Replacing bureaucracy will be adaptive, problem solving, temporary systems of diverse specialists linked together by coordinating and task-evaluating executive specialists in an organic flux.
>
> Such a flexible structure may enhance the satisfactions intrinsic to the task, but will reduce commitment to work groups. Job mobility will increase.[43]

Increasingly, employees will seek non-monetary rewards as work motivations and will have differing attitudes than in the past.[44] Managers will be able to

improve their efficiency through improved communication systems.[45] Forecasting, along with research and development will play an even more prominent role.[46]

Interactions and Life Styles

It appears that the class system will prevail in the United States.[47] Though there will be social inequality, one source noted decreases in the number of poor.[48] Others see the diminishment of poverty by an income floor.[49] Dreikurs, a futurist psychiatrist sees major increases in social equality.[50] For the middle classes, by 1985 the model household shall earn over $10,000 (1971 dollars)[51] to $15,000,[52] and by the year 2000, the average income will be between $18,000 and $20,000 (1971 dollars).[53]

With the diminishment of poverty, racial tensions have the possibility of lessening.[54] However, most see some kind of accomodation but with continuing racial and ethnic separation.[55] And real harmony as such is not projected because of the historical struggle between groups, especially those with third world heritage.

Blacks because of physical visibility as well as entrance into the social system as slaves, may still find residual stigma upon them.[56] Chicanos,[57] as well as Indians,[58] or Neo-Americans,[59] may see a similar situation.

However, for the southern and eastern European community the picture is brighter. Increasingly, "cosmopolitans" will probably have improved positions in the American social system.[60]

If one could give an overview of life styles in the super-industrial state in the year 2020, it is one of fluidity of relationships and geographic mobility.[61] Generally both consumption[62] and leisure should be on the increase.[63] There may even exist new and varied art forms.[64]

Communications will be ever more efficient, cheaper, and more instant.[65] It is also thought that more forms of printed matter will be superceded by electronic communication devices.[66]

However, in the midst of all this, man may find himself unable to cope with his feelings of aloneness, powerlessness, and alienation, a la "future shock".[67] To overcome this he may seek out religion, psychiatry,[68] pharmacology,[69] or group therapy.[70] For the individual

of the future, struggle for material goods may be supplanted by quest for self.[71]

Social Implications of Land Use

How does the super industrial life style translate into land use and land formation? What will the future city look like because of social implications?

John McHale has emphasized the importance of life style upon future urban form.[72] However, the field of social ecology traces back to Robert Park.[73] Park likened man-to-land relationships to the biological world of ecology, and he coined the term "Social Ecology." Park and his Chicago School studied the windy city, and noted certain urban formations emerging from social relationships. Others have followed including Hoyt, Harris, and Ullman, as well as Skevky, Bell, and Williams. Among urban geographers, social ecology is called "internal form" or social space.[74]

What general impact does super-industrialism have upon this area in terms of land use? Freedman and Miller note:

> Looking ahead to the next generation, we foresee a new scale of urban living that will extend far beyond existing metropolitan cores and penetrate deeply into the periphery. Relations of dominance and dependency will be transcended. The older established centers, together with the intermetropolitan peripheries that envelope them, will constitute the new ecological unit of America's post-industrial society that will replace traditional concepts of the city and metropolis. This basic element of the emerging spatial order we shall call the "urban field".[75]

If social projections about super-industrialism hold, most cities will expand horizontally. The life style of high geographic mobility and space project urban expansion or scatteration. Increased leisure and fluidity of interaction generally encourage geographic distance and larger amounts of land consumption. As Freedman and Miller note, super-industrialism requires a wider life and land space, wider choice of living environments, and wider community of interests.[76]

This projected life style also places new definitions upon the rural-urban fringe as well as difficulties in defining the urbanized area.[77]

With this predicted consumption pattern the "centripetal pull" of the core of the city weakens because of additional real income, more leisure time, and increasing mobility.[78]

Both "new towns" and suburban developments with inclusive resource endowments (retail for consumers, and manufacturing for workers) also weaken the "pull".[79]

Super-industrialism engenders megapolitan growth. Megalopolis[80] grows not only from natural increase but from migratory pressures of groups both from core and rural areas. "Urbs" and suburbs grow at the expense of both heartland and hinterland. This polarized development robs both core and rural areas of manpower and tax base.[81]

What about the interior of the city and social formations within it?

First, if the neo-local family continues as the majority (but not the only preference) there will be a continuance of "life cycle segregation". What this means is that as one progresses through life, various regions of the city take on importance.[82] Generally, families take on zonal characteristics.

The concentric zone is a ringlike feature with Zone I, the core, being downtown. Zone II is a zone

of high land value, but low rent and low income as proprietors wait hopefully for core expansion so that they can sell their land. Zone III is generally populated by the working classes. Zone IV is populated by upper middle income groups, inestablished suburbs, and Zone V is a commuter zone composed of young lower-middle-class families.

The zonal approach is but a classic model with certain flaws, but evidence indicates that family patterns are based on zonal features.[83] Generally suburban residents are at peak income with no or older children. Inhabitants of the inner city are either young, single, or yet to achieve their maximum income. They may also be those who never quite achieve the necessary income for the suburbs or are large poor families. Using this model, family size rises and falls along the various rings. Zone I is generally devoid of families. Zone II is heavily populated with large poor families, single, and older couples. Zone III has large families. Zone IV has smaller families with older children. Zone V has small young families.

Zonal formation spreads with the sprawl. If super-industrialism projection about family occurs in a similar and correlative fashion, zonal formations will encourage spread, for single nuclear families push outward looking for single dwelling units.

If traditional class differences continue as suggested, this too will encourage scatteration. Hall has noted that in Europe, classes may reside close together because a social psychological distance exists.[84] However, in the United States, a classless ethic is thought to be traditional form. Therefore, personal avoidance is difficult. For Americans, geographic distance then takes on an importance. Banfield notes that classes have difficulty mixing because when some new group of upper income people move into an area, their land improvements raise property tax, driving the poor.[85] Generally, the poor, when they enter a more affluent area, drive out the middle and upper income by their life style.[86]

The American class system also encourages spread. Hoyt, who looked at rent data, calculated a sector theory of urban life. This system sees the city divided by major

corridors forming sectors. Urban geographers have noted that class systems follow sectoral patterns.[87] On density-distance flow charts measured from the core of the city, geographers have noted the income crest along the traverse intersect of the inner suburbs. However, class may vary along the axial growth. Data shows stronger continuities within the sector than between them.[88]

The traditional racial and ethnic separation also gives rise to sprawl. Generally, man and varied forces keep minority members impacted in restricted areas until they "spill over" into the ensuing neighborhoods.

Nationwide projections indicate that, at current rates, the black population should increase significantly.[89] With projection of the continuance of the ghetto, we see necessary expansion of it.[90] This will, in an interdependent way, increase the white European flight to even more newly developed suburban tracts.

Both Harris and Ullman as well as Shevky, Bell, and Williams, noted the creation of nucleated formations around urban neighborhoods.[91] Data of urban geographers

indicate that these neighborhoods flow along racial and ethnic lines.

Lastly, if time for leisure activity increases, new outdoor recreational areas will be needed. Generally in the past, parks have been difficult to establish because of the competition with developers for land. This is a common problem in urban expansion.

Conclusion

If the super-industrial trends continue, metropolitan areas will probably continue to expand horizontally. Zonal life cycle patterns, sectoral class divisions, and nucleated ethnic formations will continue to expand. More leisure areas will be demanded.

Chapter Two

Footnotes

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SOCIETAL TYPE

Social Characteristics	Past Societies	Present Societies	Future Societies
Dominant Social Relationship	Fellowship Kinship Neighboring Family Law	Exchange Rational Calculation State	Fluid Assoc.
Central Institution	Extended kin group	Social Market or Capitalistic Economy	Social Market or Keynsian Capitalist Economy
Individual & Social Order	Self	Person	Situational Personality
Characteristic Form of Wealth	Land	Money	Experience "New Money"
Type of Law	Family	Contracts	Regional Contract
Order of Institutions	Family Rural Village Town	City Rational Cosmopolitan Life	Serial Family Ad-hocracy Decentralization
Types of Social Control	Concord Folkways Religion	Convention Legislature Public Opinion	Technology Decentralized Democracy

All three of these systems are based on the content of the means of production.

Toffler's system is predicated on affluence, industrialism, urbanism, and rapid change.

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Chapter Three

Population and Human Ecology

Population and Human Ecology

Introduction

Population and ecological considerations have been the concern not only of sociologists, demographers, and human biologist, but an emerging number of geographers. Our especial concern in this chapter will include the impact of the environment on urban form.

Emerging years ago, but only recently noted by the general public, two opposing camps developed concepts regarding the question of population increases. The Neo-Malthusians maintained that not only was the world experiencing major increases in population, but that the United States also had a population problem.[1]

They also maintained that population acts upon the system as a significant intervening variable. They indicated that each new increase of people, given present consumption rates, made tremendous demands upon the environment. For example, they contended that as population increased by one per cent per year, energy usage increased about seven per cent. Solid wastes per person have

doubled since the 1920's and the population has tripled since 1900, with the country now using more than 50 per cent of the world's resources.

Others contest this position essentially upon the basis that the man per acreage ratio in the United States, relative to western Europe, is quite low, and that the United States is prosperous enough to support a considerable increase in population.[2]

In terms of the current population, the "Right to Life" people note the falling rates of population increase (down considerably from the beginning of American history with the exception of World War II) and the "ZPG" people note the real number increases (an additional 2-3 million people each year).

Notwithstanding the ideological aspects of population changes, how does this translate into growth for the world and this country?

Miles[3], as he views the world population sees what he feels are alternatives most likely to occur. These he labels a "modified Irish curve." In this he sees a number

of severe disasters but not of calamitous nature, which would would result in a downward population curve so that by 2020 world population would revert to the 3-4 billion level we have today.

Questions may be raised about the growth of this country. The present population is approximately 210 million people. The Population Reference Bureau[4] no longer projects one population figure, but a series of figures based on varying assumptions from 440,253,000 as a high to a low of 270,447,000 by 2020. Even with a very conservative estimate of population it would appear that there will be an additional 60 million people living in the United States in 2020.

The superindustrial state is a very mobile one, and projections indicate that migration also will increase. Mortality rates may also be decreased, thus causing the aged to become a more viable political and social entity.

Population Distribution

Given these trends, the population commission projects that by the year 2000, 85 per cent of the population will live in metropolitan regions. By the turn of the century ,

the metropolitan regions will have an increase of 40,000,000 persons. (Assuming a 2-child family.) They see the super-industrial state forming into megapolitan regions, with workers willing to commute much further geographically because of high speed transit systems. They envision:

> Urban regions appear to be a prominent feature of the demographic future, and if our population distributes itself according to projections, 54% of all Americans will be living in the two largest urban regions - - one stretching along the Atlantic seaboard and westward past Chicago containing 41% of our population, the other in California between San Francisco and San Diego, containing 13 per cent.[5]

Resources and Environment

Notwithstanding the ideology of population change, there appears to be a decided relationship between resources and population. As the Commission on Population notes:

> Population growth is one of the major factors affecting the demand for resources and the deterioration of the environment. The further we look into the future, the more important population becomes.[6]

Some sources see the environment deteriorating on a world scale, and with this a growing feeling of national geographic interdependence.[7] Importantly one of the inadvertent problems is the effect upon the world's climate.[8] Ecologists contend that, in the past, producers have not taken into account the extenualities or the cost of maintaining the environment. They see the effects of water pollution with infiltration of raw sewage, oil, and harsh pesticides into inland streams. They also indicate that air is heavily infiltrated by particulates and lead. Of some 200 million tons of waste poured into the air last year, the auto contributed 94.6 million tons. They also see increases in noise pollution, and due to inadequate recycling and sanitation land fills, more solid waste problems.[9]

However, not all concur. Some see the environmental issue as already on the way to a solution due to aggressive action or becausethe issue was not significantly important in the first place. Others see emphasis on environmental concerns causing unemployment and a slowing of

industrial activity. Still others see the environmental movement as a cover issue for the promoters of a left-wing government.[10] Energy is also involved in this issue. Cook and Waring note that throughout history the industrial age has been the most devastating in terms of consumption of resources.[11]

Others feel that major sources of pollution of air, water, and soils can be directly or indirectly related to the nation's energy demands and the economics of energy. They contend that much of this energy use could be substantially reduced through effecting some changes in economic and social patterns on a national as well as a local basis.

Water pollution and energy efficiency relationship, they would contend, can be illustrated in many ways. The power generating plant using water as a condenser coolant introduces thermal pollution. The greater the demand for electrical energy, the greater the output of thermal pollutant. The manufacturing plant that uses water in washing or in chemical processing can frequently

relate its product and its process to energy use . . . the principle of built-in obsolescence requires the frequent replacement of a product at a high energy cost . . . the generally considered low cost of water and its seemingly unlimited supply provides an economic climate for abuse.

They would indicate that much can be said for increasing the sources for energy to meet the growing demands made by our society, but regardless of all efforts in inputs, more intensive exploration, trans-Alaska pipelines, accellerating strip mining, gasification of coal, etc. the fact remains that this earth is finite and sooner or later we will have used up the last drop of oil, the last hod of coal. Thus, a long-range effort at conserving fuels is urgently needed along with technologies that enable us to utilize renewable energy resources: water power, tidal power, wind, and possibly geothermal energy.[12]

However, not all environmentalists concur. Some feel that the environment "crisis" is overstated or will be effectively circumvented by technology. For future energy

they see the viability of new energy sources with especial emphasis on nuclear reactors. Tapping solar energy is also thought possible as is the renewed use of coal. Though present projections for certain energy sources show diminished abailability, other sources can quickly take their place.[13]

Environmentalists also see problems with nuclear reactors in terms of shipment, air pollution, potential nuclear disaster, and emissions of plutonium oxides.[14]

Food Supply

Though Ehrlich[15] has raised the issue that a doubling of population by the year 2000 (to 7 million) will outstrip the food supply, Brown[16] is more optimistic. Since 1967, Brown notes a new wheat strain, I-38, has been developed and proved successful in Asia. Some look to aquaculture as a source of world food supply,[17] and still others see productivity of artificial meats.[18]

The impact caused by changes in the supply of food available to this country is more political than ecological.

Though the United States is quite affluent, people in some 280 counties of the nation's 3,100 counties suffer from hunger and malnutrition.[19] However, the super-industrial state may require even more food as American consumption "needs" increase. If projections that poverty will be eradicated are true, hunger should be considerably diminished.

Human Biology and Urban Form

How do these factors concerning the physical and ecological environment translate into urban form?

One source notes that cities may best be viewed as "condensed regions of population."[20] Population distribution has been described for the American city as a distributed sheet. As Brown notes:

> Density: Despite more people in metropolitan areas, there has been a lesser concentration of population density within these areas. This is because of expanded utilization of the land areas in suburban rings by an increase in the number of people living in these outlying areas. This flight to suburbia has been made possible through

advances in technology. One of our studies shows that only about 1/5 of all commuters spend more than a half hour getting to work.[21]

It would appear as population density increases to threshold size (15,000 to 35,000 dependent upon cartographic and physiographic impediments), horizontal expansion will occur. A "quasicolloidal" dispersion occurs in an amoeba-like fashion radiating from the core of the city. In the future, given super-industrial trends, a further scatteration of population with heavy losses in core city and rural areas will occur in spite of the effect of natural increases.

Population distribution has been measured by density-distribution curves which measures human numbers as they are distributed from core to rim. These curves indicate selected impaction in low income areas and other critical density regions.

One of the key features of population distribution is the migratory processes that shape new man-to-land formations. Inter-urban moves are most likely to come from young white collar and manual workers, as well as unemployed youth.

Evidence indicates that moves are likely to occur if there is a life cycle change in the family, improvement or diminishment of income, ethnic or racial change in the neighborhood, or a necessary personal adjustment such as conflict with neighbors. Though the data is descriptive, it appears that when people move, they are likely to choose a home that is propinquitous to their previous home. They also consider access to the rest of the city and the distance of their work journey.

As an overview, it appears that distribution in the American city system follows both social and economic considerations discussed earlier. On balance, there is continual out-flow of numbers of people from core to rim as the city ages. Increases in human numbers lead to increases in land consumption.

What would happen if there were considerable effort to reduce population, preserve the environment, and encourage a system based on "social profit"?

ZPG Society

John R. Meyer, a Yale economics professor and president of the National Bureau of Economic Research, says that predicting the future under the best circumstances is diffi-

cult for economists.[22] Nevertheless, he ventured this scenario: take-home pay in a ZPG society should improve because of reduced taxation. Savings should increase. Early retirement should become more common.

The Commission on Population Growth on which Meyer served predicted that regardless of the birth rate, average family income will increase from today's $12,000 to more than $21,000 (in 1972 dollars) by the year 2000, even assuming that the work week drops to 30 hours.[23]

> The fertility rate decreased from 3.77 children per family in 1957 to 2.03 in 1972, below the replacement level of 2.1. If that low rate persists, one result will be a gradual balancing of age groups within the populace... The median age will gradually increase. It is now 28, but at a 2.1 fertility rate it would reach 34 by the year 2000. Economists say that this will mean more workers with fewer dependent mouths to feed, and hence greater affluence. The U.S. Commission on Population Growth and the American Future estimated that per capita income in the

year 2000 may be 15% higher with a birth rate of 2 children per family than it would if births averaged 3 per family.[24]

J.J. Spengler of Duke University writing in the Population Reference Bulletin discusses both the advantages and disadvantages of a Zero Population Growth Society.[25] Listed among advantages, are a more affluent system caused by diminished age-dependency ratios, and more stable consumer demand from more regulated trade-cycle dependencies. He also raises the possibility of more family stability due to a reduction in the present 13 to 18% of unwanted births. The system would probably result in improved man-environment relationships bringing about increased improvement in time which would be used seeking other goals than growth. Importantly for the structure of urban form, he states:

> Since population concentration, often accompanied by mal-distribution in space, is a concomitant of population growth, the slowing down of this growth will make possible improvement in the spatial distri-

bution of the population. Interstate differences in population density, when corrected for differences in resource structure (e.g., water supply), indicate our population to be quite mal-distributed and destined to become more so should the anticipated increment -- 75-100 million inhabitants and 30-40 million jobs -- be distributed at all like our present 208 million.

While this increment will settle in cities and nearby rural areas, the location of these cities need not be dominated by random processes and the continuation of our goalless system of national transportation. Man no longer is bound to the soil and mineral deposits. Moreover, while he is not free to locate at will, the options available to him are many and can be increased by miniaturizing plants of optimum size. Most men, being "job-takers," must, however, settle where "job-makers," provide employment.

Since about one job in four is provided by 750-850 business firms managed by perhaps 10,000 "strategic

decision-makers." Collective locational freedom is very great, particularly given supplementary assistance at the hands of public corporations and private enterprisers, mainly in the form of infra-structure and residential facilities. These strategic decision-makers should be able, over the next 50 or more years to establish self-sustaining bases for 400 to 500 or more new cities, in less populated states, away from currently growing concentrations destined to be short of water as well as space. The new cities could accomodate both the prospective increase in the nation's urban population and the increasing number who are fleeing the disadvantages, including high vulnerability to the thermo-nuclear extinction, associated with today's metropolitan and megalopolitan concentrations, many of which are collapsing under the weight of economically dysgenic social metabolism.

However, he also sees problems, First, an aged population(some 11-17 % of the population) increases the demand for social welfare. Second, advancement within formal associations will be more difficult. In terms of the labor force,

slowing down the rate of population growth may intensify the task of maintaining inter-industrial, inter-occupational, and inter-regional balance. He also envisions political struggle concerning income distribution in no-growth system, and controversy over higher inflation.

Locally, a reduced population would free income spent on costs necessary to provide quality education. In terms of construction of dwelling units, the city would have reduced start-up costs for sewers, streets, and other city services.

The city would probably have less expansion. Welfare costs would be diminished. And perhaps, the form itself would emerge as Spengler describes, but scatteration and population growth are not necessarily synonymous.

Energy shortages could encourage large portions of population to revert back to less energy consuming mass transit. Energy concerns would be a smaller problem as a result of diminished population.

Right to Life

The development of this system is harder to create. Wilkes[26], has pointed out birth control is not an issue for those people who do not see societal problems in a

highly populated country. Though opposed to abortion, Wilkes does not support (but does not oppose) family planning. Given the falling birth rates which have persisted since the establishment of this country, a high population rate increase is less likely.

As Samuelson notes:

> Certainly improvements in techniques of birth control play a role. The Pill, loop, sterilization, legal abortions, all contribute to the decline in births. A presumed increase in frequence of sexual intercourse is more than offset by effective use of birth control.
>
> The loosening up of the Catholic Church since Pope John has meant both a sharp drop in aspiration goals of Catholic couples and a sharp rise in their ability to achieve their projected goals for family size. Another generation of convergence between Catholics and the rest of the population in these matters would result in practically no remaining differentials.

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> Birth rates of Blacks, although still higher than those for Whites, are also converging down. The differentials that existed in the 1920's between the rural masses and the educated middle classes are also narrowing significantly.[27]

Therefore, the likelihood of a high populated and impacted situation similar to that found today in western Europe is less likely but is still possible.

If there is a return to the traditional role for women, a value orientation toward large families, and the attraction of high turnover industries requiring manageable pools of labor (as has occurred recently in Japan), fertility rates may increase.

What type city would this bring about? The sprawl may scatter to the limits of the city. Start up costs would mount, tax per person per thousand would be much higher. Land developers would prosper and the age-dependency ratio would increase. There would be a booming youth market, but there would also be a selected interim energy shortage crisis, and unless life styles and consumption patterns changed radically, more pollution.

In summation, however, it would appear that population will stabilize but the real number growth will still place demands upon the environment. Energy will probably not be a crisis except upon an interim basis because of America's economic position and military dominance. Notwithstanding ideology, it is assumed by these authors that large dominant nations will not suffer to the degree other nations will. Secondly, the nation will be using nuclear reactors. Though plutonium has a finite life, the reactors will be erected in spite of litigation presented by groups such as Ralph Nader and the Friends of the Earth. The reactor will probably produce the energy needed but will appear to place much of the population in real jeopardy. However, we see AEC as having the political muscle to carry it out over and above its opposition.

The environment on balance will probably continue to suffer given American life style and socio-economic system. New definitions may come into operation about an industrial or super-industrial environment. As William Wise notes in Killer Smog[28] new generations can define old problems in new ways even if the problem becomes more severe.

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Chapter Four

Geo-Politics

Geo-Politics

Political Culture

Geo-politics is used here in its broadest sense to connote how the political structures emerge and interact with man-land relations. The word was originally coined by MacKander but its narrow definition does not apply here.

The political culture is a reflection of an early beginning of projected propertied revolutionaries creating an anti-monarchial private enterprise republic. The ideological base was made with two political parties emerging with striking continuities in platform.[1] Not being exposed to other ideologies such as France or Italy were in their history, the two were non-doctrinaire parties and ensuing governmental policies increased America's position from a small isolationist agrarian republic to a large industrial system with a vast military and political dominance.[2]

In viewing the political culture not all agree about its functions. The political Right see a market system that has become protectionist for the large corporation, driving out the small entrepreneur. They feel that the only system that is viable is a governmental operation which remains in a low profile. They believe that the market system will then force decentralization.[3]

On the other hand, the Left sees a system increasingly centralized and as the natural function of the market system. Importantly, they see the government as an arm of the economic structure, i.e. owners of large sectors of productive property. Notwithstanding America's mean wealth, they maintain distribution does not cover various sectors of the economy.[4]

Both the Right and the Left share the vision that a small elite dominate the system. They feel that many agencies and institutions prevail to protect a small number at the top. Both maintain that the democratic processes of the system are corrupted by the existing party system and the resulting political network. Both feel that the two main parties are the same or similar. The Right sees the parties leading the country toward socialism and later communism. The Left sees the parties leading the

system toward a fascist state but with outward forms of liberal rhetoric as a cover. Both feel that the elite tyrannize and mislead the political mainstream. To both the center is dead center, a force from resistance to change.

Political centralism sees a wide array of choices within the system. It's basic premises is that the political culture is the voice of the people as indicated by public opinion polls. America is a centralist country with strong roots in some form of private enterprise. Schumpeter, Galbraith, and lately Scannon & Watenburg maintain that there are countervailing blocks of organized interest. At the worst, the political mass are semi-soverign but are periodically organized around issues and exert their will through selected lobbyists as well as political representatives. Issues are the important facets of the body politic rather than ideology.[5]

From the readings of the futurist literature, it appears that for the most part trend line projections of super-industrialism see a countervailing Keynisan system. As Scannon, political analyst, and author of the best seller the Real Majority, notes:

> Perhaps this isn't what futurists should say, but I don't see great changes in the next generation in our political system. I don't see it in our institutions. I don't see it in the pattern of the population that supports the institutions. I don't see it in the political system itself. That fact of the matter is that unless we predicate very wide changes among the people themselves -- in their attitudes, in their habits, in their ways of going about their affairs -- we won't find changes in any of the institutions or in the politics of

> our system. A democracy like ours, in which people are very closely related to the political structure, is one which changes as need is indicated from people. A great need was indicated in the depth of the depression, and changes were made. But even those changes, and even the changes most illustrative of postwar America -- the explosion of the working class into the middle class and the flight from the land -- are still more or less in the old pattern.
>
> I would say that if one looks at the future for 10, 20, 30 years, one does not see an American politics substantially different from what it is today. By the year 2000, I would think, the flexibility of our system will likely have produced a number of adjustments, a number of ameliorations, and perhaps new ills, but I wouldn't think it will have produced major overriding changes.[6]

The Commission on the Year 2000 sees a future government somewhat similar to our own. However, the Commission does see a slightly more collectivized system, and more integrated to world order.[7] Senator Humphrey sees more future planning.[8] Mesthine sees more choices in this future political system.[9] Madden, Turner, and Shils see the continuing viability of the Keynsian market system.[10]

National and International Political Systems

The actual federal governmental structure appears to be increasingly Presidential and continuation of this trend is expected.[11] Most sources indicate that no changes will occur; the authors sent a brief open ended questionnaire to key figures in Congress who either had a national reputation or represented the Plains area. For the 23 letters sent we enjoy a 25% return rate in which the majority (anonymity was promised) saw no dramatic changes in the trend.[12]

Panel studies of national attitudes indicate to these authors that the American electorate is concerned about

environmental issues, wants government as its employer only as a last resort, and (especially the white respondents) sees the city getting worse. Most segments of the public are suspicious of all big entities (government, business, and laobr).[13] It would appear from public opinion responses that no major or radical changes will occur, for the public lacks a consciousness of kind in terms of the direction of the country.

On the international scene, the picture does not always appear to be as tranquil. Trend line assumption sees a world still fraught with conflict. One source sees gradual nuclear military action.[14] Another sees clamity without world government.[15] A third envisions new major struggles over political assets of the ocean.[16]

Hammel sees the communist block having trouble with the future[17] and Fascell projects more conflict in Latin America.[18] However, Brown is optimistic about the Third World.[19] Japan will probably soon be the most affluent nation in the world.[20]

A survey of 120 countries shows military expenditures rising faster than either population or gross product.[21] Karnish sees the spread of nuclear weapons to many countries.[22] Given the trend line projections generally accepted, a large military system is projected for this country.[23]

Not all agree what the function of the military in this country will be. One camp envisions the military as a protector of world order.[24] Another has questioned the idea of

the military as protector of corporate market and a wasting agent in the United States.[25]

However, there are optimistic accounts of a future devoid of violence which extends to nuclear holicost.[26] For this country, trend line analysis projects continuance in war and war related activities. For whatever reasons, America has been engaged in war activities about three-fourths of her history,[27] and it is therefore unlikely that there will be a diminishment of military expenditures. Due to the economic position enjoyed by the United States social and cultural forms which describe "peaceful" societies will not emerge.[28]

Governmental Form

Trend line projections do not indicate major changes in this area. General national-local relationships have, however, been developed via federal to regional to state-county-local. Political conservatives want to maintain a federal-state relationship. From the early days of Calhoun and his concurrent majoritarianism, a federal-state relationship has given conservative bias to political structures.[29] Liberals have looked to a federal-city-neighborhood relationship which would benefit liberal constituencies. They see state legislation as a parasitic drain upon city revenues.[30]

Another question concerns government formations. The urban coalition (minorities, college youth, White liberals, city mayors, downtown merchants) would like to see a more centralizing and yet representative form of city government.

However, Wood has illustrated that multi-government caused by divided and over-lapping jurisdictions is consistent with the ideological retreat from the city. Suburban government can provide more local attention and can cost less because city resources can be tapped. Though a parasitic relationship, it is beneficial to suburbanites.

Trend line projections do not indicate overwhelming changes in governmental form nor in its geographic constituency. Importantly, multi-government has a special benefit for the more affluent and those who have retreated from the city.

The Urban Crisis vs. the Logic of Metropolitan Growth

The shape of urban form stems from this disagreement. The urban crisis position says that historically America has always had an anti-urban bias.[31] However, we are now becoming an urban nation with natural increases and rapid rural migrations. City hall is dominated by those who have an anti-urban bias. Generally, the merchant community wants only from the city that which will generate profits and city hall is the arm of merchant elite. Local developers have free rein in chewing up even more agricultural land for profit. Systematic planning is overwhelmed by the elite and their ability to generate revenue. Slumless, greenbelt, mass-transited cities are also tyrannized by suburban and rural-oriented state legislatures. The suburbs are parasitical, drawing money from the city but not providing a tax base for the city system. Housing legislation, property tax, slum lords,

highway funding all work to cripple the city. Not only has the urban area suffered from this, but the farm and rural areas have lost out also. Reformers in the past have proposed Rural Reconstruction Acts, economic floors, taxes based on income rather than property, the use of private agencies to stimulate the city, industrial parks, uni-gov, city redevelopment, city-state approaches, model cities, urban renewal, as well as grants to industry. However all this, which translates in terms of urban growth into redevelopment and concentration of people and services, has had little success.

The authors agree with comments made to us by Dr. John McHale, futurist, urbanologist, noted writer, and confidant of R. Buckminister Fuller that urban planning requires fiscal planning. City planners have for years looked longingly eastward toward the green belts, well planned housing, and efficient mass transit systems of western Europe. However, our political and economic system is considerably different. We do not see this change coming in the United States given trend line assumptions. A survey of history of the last 50 years suggests to these writers that there exists a striking viability of a center right coalition which will serve to preserve the economic arrangement. Notwithstanding the rhetoric of reform, income redistribution has not come about. Relative income distribution has remained about the same. Going back to Roosevelt, who ran on the platform of a balanced budget, the "New Deal" quoting Jimmy Burns was "to

preserve the system." Since that time most successful candidates have been moderate conservative Republicans or Labor Democrats.[32] "Liberals" have been few and have lost overwhelming at the pools. We include here both Stevenson and McGovern.[33] Generally, the United States is more conservative than her industrial counterparts. This reflects in the formation of cities and city life. Sprawl and spread are in the cards for American cities.

If one contemplates the coalitions which will be formed in the future, one is impressed with the probability of emerging conservative coalition. The strength of it should be noted in terms of its power. (Even during the liberal years of the 1960's.) The Congressional Quarterly notes that the conservative coalition (conservative Republicans and Southern Democrats) won on the average between 70-80% of the issues raised. Also to be considered are the number of other issues that were not reported out of committee.[34]

One must also consider material contained in two recent books of Kevin Phillips and Scannon & Watenburg. Phillips argues that there is an emerging coalition of suburbanites, Whites, the Business community, the plains, south, and southwest, and religious fundamentalists which insure a Republican majority. Unfortunately for Phillips, it would appear to these authors that if he would have said a Presidential majority he would have been more correct. From our perspective, the moderate conservative of either party, a Connally, Jackson, or Humphrey would have a good chance of winning, if

the majority is not spoiled by an even more conservative candidate like Wallace. If one reads Scammon & Watenburg, they seem extremely defensive. A liberal should fudge the issues they say, playing down the social issues and play up the economic ones. The economic issues to them go along the "New Deal" variety. What to these authors adds up to is a continuance of a conservative coalition or an increase in it. "New Politics" appears only to be viable in local elections, and importantly the "New Politics" wanted to drop the south but add the suburban liberal Republicans. However, the coalition assumes the inclusion of the laborite and the southern and eastern community. They now appear to be on the right.

What this brings us to, given a trend line projection orientation, is that Banfield's logic of metropolitan growth appears to be what will occur in terms of urban form.

Banfield indicates that every city administration has at least three elements which narrows their base of choice: 1) population increase, 2) technology and its impact on jobs and transportation, 3) economic, the distribution of wealth and income and its impact on new housing.

Accordingly Banfield asks, "why urban crisis?" "Urban crisis" to that author is a definition conjured up by middle class liberals. Urban decay is really just working class and lower class life style. Middle class define environment aesthetically and the working classes define it functionally.

So the classes (middle vs. the working class and poor) don't mix. As the lower classes and working classes spread, the middle classes and upper classes move further away from the central city.

Spread was also encouraged by mechanical refrigeration and canned food which reduced neighborhood centers of boarding houses and resturants. The combustion automobile along with highway legislation allowed the middle classes and working classes to flee. Also, FHA financed new homes rewarded the middle classes to flee to the suburbs. The GI bill, the GI loan, and tract housing also helped encourage spread. After World War II, due to farm foreclosures, there was a rapid influx of Blacks, Southern Whites, and unskilled workers into the city. This increased theflight of the middle class to the suburbs. So once the middle class left the central city (except for the diehards and the gold coast area) they return by car to work and they perceive an urban crisis. According to Banfield, today in the city there is actually less sub-standard housing and fewer poor.

So the reforms (public housing, urban renewal, ZPG, services strategies for the poor) all appear likely to be doomed. The living city and corporate private enterprise do not compliment each other. And Sociologists, urbanologists, city planners are all likely to be suspect for some liberal reforms that have back fired. The urban coalition is shaky, because to some Blacks, urban reform may

mean urban renewal which may also mean "Negro removal." Suburbanites are antagonistic or apathetic and the southern and eastern European community sees urban reform as something to benefit Blacks. Categorically to the southern and eastern European the vision of their world according to Michael Novak is the "good Life" (local neighborhood and parish issues) rather than the "good world" which is the larger societal milieu. Therefore, in terms of the urban community, one source notes:

> Urban experts no longer feel, as they did twenty years ago, that drastic interference with the urban system can correct a drastic problem. For example, the programs to eliminate slums not only failed to achieve their goals but created other problems through the relocation of the poor.
>
> The truth is, everybody is tired of cities. "We could build great cities today, but I don't think we have the will to do it..."[35]

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Chapter Five

The Economic Outlook

The Economic Outlook

Move Toward Service Industries

The social system presented earlier is defined as "super-industrial," It has a strong basis in economics. The key to super-industrialism is the change of focus of the means of production from basis and secondary industries to tertiary (service) and quaternary industries (government, research, and development, etc.).[1] This projection includes the extension of a Keynsian market system as described by Galbraith and others.[2]

The land force would be better educated, and work less often, and enjoy more employee benefits. The profile of the labor force includes heavy addition in the service and quaternary areas. As Klemme notes:

> By the year 2000 A.D.from the standpoint of the industrial developer, the most important changes will be found in the structural pattern of employment and the relative and absolute changes which will occur in the last third of this century.

Basic employment (manufacturing, agricultural, and mining), which is the employment generating basis on which all other employment is supported, will grow by only about 4 million jobs between 1965 and the year 2000. Manufacturing will increase by some 8 million jobs, but this gain will be offset by decreasing employment in agricultural and mining. The basic supporting industries (transportation, utilities, construction, etc.), will gain approximately 5.7 million jobs but will decline from 11.4% of the total employment in 1965 to approximately 10.2% of total employment in the year 2000. The almost exploding employment potential in the fields of service, trade, and finance will continue through the year 2000. Employment in these fields will rise from approximately 26.8 million jobs in 1965 to 63.4 million jobs in the year 2000. This will account for nearly 60% of the total growth of employment in the last third of the century.[4]

Another source indicates that by 2068 service sector labor will reach nearly 75% (from 55% currently) while manufacturing labor will account for only about 20%.[5]

Consumption and Productivity

Higher total consumption is predicted not only because of the national increase in population, but because of what Toffler calls the economics of"impermanence." He notes that new products which are produced cheaply (and thus easily replaced) will win consumer acceptance over those which are guild or custom repair oriented. Rentalism is also thought to increase.[6]

Because of advances in technology, labor productivity should increase by about 3% per year.[7] The average work week is projected to be something like 30-35 hours per week.[9]

Daily means of transaction may be totally carried out by credit card.[10] Capital investment will continue to increase because consumer outlays will continue to increase as will government expenditures.[11]

The overview then of this system is one of increasing centralization of both government and corporate enterprise to the point where the resource management of the two entities become indistinguishable. Service-related industry should be dominant and consumption should be increased.

A Super-Industrial Economy and Urban Growth

How does economics translate into urban growth? Turner, in dealing with the future of urban growth, notes:

> People are shifting out of primary industries (agricultural and mining) into secondary industries (manufacturing and goods processing), and out of these into tertiary industries (the service industries such as retailing, transportation, finance, entertainment, and so on), and finally into quaternary industries (education, government, and the arts). These occupational shifts have produced geographical shifts: people moved from the farm into the giant metropolitan areas, then out of them to the periphery. I predict that the

> geographic trend of the next several decades will be away from the metropolis to locations beyond the periphery, along arterial highways, thus creating strip cities hundreds of miles long, and to smaller cities, some of them in the strip cities, others only a short hop by high-speed transportation from the metropolitan areas.[12]

Land economics is concerned with key concepts that deal with man-to-land relationships. First "urban functions" considers the historical and economic beginnings of an area. Included under these concepts are the following concerns: 1) what is the basic means of production for an area? 2) what kinds of tax revenues are generated? 3) is there available low land for transportation and poor land for industry in addition to scenic areas for tourism and use by the general populace? 4)what is the relationship between heartland and hinterland (such as nearness to minerals and succeeding stages of production)? 5) what is strategic about the location, such as its nearness to agriculture, national markets, and other trade centers? 6) what facilities help to bring about an inward

flow of materials and an outward flow of finished products? 7) can an area attract "people to services" (e.g., aged, defense industries, government, education, etc.).[13]

Generally basic theories within this area include "trade theory" (which is concerned with supply of land, labor, and capital), "location theory" (dealing with location of firms and groups of firms), "staple theory" (which looks at migratory processes and economic benefits), and "economic base theory" (which analyzes the basic means of production of the area).[14] Though there are other theories, we will draw upon only these and in a collective fashion.[15]

Given the super-industrial economy, we should see the centripetal pull of the downtown core still diminishing. Though there will be an additional office space added to the downtown in some areas, we see the core as a commuter-consumer related retail area continuing to diminish in most downtown sectors.[16]

On balance we see a "competitive shift" from core to suburban tracts, keenly spurred on by the interstate and other resource endowments. One of the struggles in the future will be between relatively cheap suburban land or

redeveloped industrial parks. Given the nature of the super-industrial state, suburban expansion appears to remain predominate.

The exurban industrial/commercial ring will demand more area in order to provide space for parking. As we will note later, the mass transit system will be an important element but not a dominant one. Even projections for the 1980's envision more commercial acreage because of the new shopping areas which require between 3 and 5 times the space needed by World War II retail outlets.[17]

The labor profile should remain similar to present conditions, with the exception of increases in tertiary and quaternary areas. This does not mean that the relationship in any way will always be direct. Predictions translate into higher percentages of employment as follows: wholesale and retail trade, finance, personal services, entertainment and recreation, and public administration.[18]

We project an unemployment rate of between 4% and 6% as presently measured. Industries with a high nature of

employee turnover need a ready pool of labor resources to draw upon.[19]

As an overview then, the super-industrial state will, on the economic level, promote scatteration.

When new industrial locations come about, the exurban ring and others in the nodal region will be more likely to locate in the suburbs because of the following reasons: 1) relatively cheaper land, 2) not as amenable to sources of organized labor, 3) middle income labor base, 4) less amenable to political activist groups, and environmental groups, 5) lower tax base.[20]

Incidentally, when we indicate suburban, we do not entirely mean growth from the core radiating out to the suburbs. We also see growth coming from the smaller towns to the city. This is especially true with service-related industries, those not directly dependent upon the major mass transportation entities.

The super-industrial economy will be a fluid one, but continually regulated.

A Planned City

What would happen to urban form if this general evolutionary drift did not come about? What would happen to the city structure given a post-Keynsian or social market economy?[21] Productivity would diminish slightly. Unemployment would be eradicated, and the tax load would be increased. Few or no ghettos would exist, the upper classes would take on a lowered profile. Much of the real national income would be channeled into the public sector. The military and armaments might also be rechanneled. Income redistribution would occur. Housing starts would be channeled through a master plan developed by city planners.

Greenbelts, bike paths, and public housing would become more abundant. The growth in technology would diminish somewhat while human services areas would increase. Both the central core and exurban shopping areas would be redeveloped. Population explosion may be less tolerated due to the change in the terrain of the city.

Cottage development would take precedence over the sprawling ranch and split-level home. Striking observable differences among classes would be diminished.

Private enterprise would be a viable subculture especially predominate in the service sector. Economic growth would be regulated by a combination of consumer wishes and central planning.

Most cities would less likely grow outward, but grow through redevelopment and vertical expansion. New growth, manpower, and the tax base would likely increase in heartland and hinterland.

The Restoration City

What would happen within the city if the general drift would return to a prior economic system?

For those who maximize their opportunities and economic freedoms, there would be strikingly attractive suburban homes, perhaps even large manors. The upper income and upper middle income (which now account for 11% to 13% of the population) would be somewhat reduced but those who remain would have increased real income.

The changes in GNP would vary strikingly from year to year. Real dramatic prosperity would follow years of economic depression, and the unemployment rate would at times be as high as a quarter of the employment force.

Those institutions now directed by the public sector would tend to revert to voluntary associations. Government would be responsible for only minimum tasks such as fire protection, highway maintenance, and sanitation services.

Urban horizontal expansion would be appropriate. Changes within the city would become more pronounced. By custom, populated impaction might become more noted in low income areas. Depending upon the era, workers would come to rely more heavily upon mass transportation and would be more likely to gravitate to the core of the city.

With social services reverted to voluntary associations, the church and religious life would probably take on a new significance. Income distribution would likely drift upward. Productivity and efficiency would increase dramatically. However, city expansion would not be as

great because of impaction of the poor, and the job-time-locale consideration of the workers.[22]

Chapter Five

Footnotes

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"The Liberty Amendment states that the Federal Government shall not operate business-type activities unless . they are specifically authorized by the Constitution.

"It provides a three-year period for selling or liquidating the more than 700 business-type enterprises presently operated by the Government without constitutional authority. Sale of these enterprises will bring in enough money to reduce the national debt by at least twenty percent. Annual budget spending by the Government will be reduced by more than fifty percent. Revenue from excise taxes on goods and services, and on corporation incomes, will increase at least twenty percent, without increase of tax rates.

"This means that the annual revenue collected from the Federal Personal Income and Withholding Tax, the Federal Estate Tax, and the Federal Gift Tax, will not be needed. So the Liberty Amendment will stop these three types of taxes, at the end of the three-year period."

Chapter Six

The Sociology of Housing

The Sociology of Housing

Introduction

In the early 1960's, Pete Seeger popularized a song about little "boxes," pink ones, yellow ones and the like. The message of the song was that small suburban-tract housing was monotonous, undifferentiated, and a general blight to the natural terrain. Suburban-tract housing became especially popular after World War II, with the financing of new mortgages by the Federal Government. For many it was the ideal escape from the city. Though outwardly attractive to the consumer; because of its singularity, treelessness, and lack of parks and originality, tract housing of Levitt variety was not favored by planners and artisans. Importantly, the tract housing was responsible for large amounts of land consumption.

At the same time, the inner-metropolitan area was losing its middle-class tax base to lower income groups which began to dominate the city in terms of population. Housing for the underclasses became popularized by the institutional high rise.

Though public housing appeared to be viable for the cyclical poor, the structural poor appeared harder to house. Institutional high rise systems presented problems for those with a high number of children per completed family. Beatings, muggings, and rapes occurred in the hallways of high rises. Total tenant-run management ended up in such examples as Prewitt-Igott where the buildings were too expensive to repair. (High rise systems did however seem viable for the aged.)

Tenant-city hall struggles ensued between Jesse Grey (NTO) and other organizations for renter rights.

Presently, rebuilding and refurbishing individual homes has not met with the success one would like.

As an overview, where the land developer and realtor initiate new city expansion, that expansion is generally outward.

In a land development system, a "trickle theory" in terms of housing appears to emerge. The typical middle income area begins new, treeless, and expensive. Though not all suburbs are alike, some similarities generally

appear. The typical neighborhood houses families as opposed to singles, or aged couples. As time continues, the neighborhood slowly deteriorates though at times it may last much longer due to restoration processes or location close to attractive consumer space areas. But at some point, the change comes and the single-owner-occupied home is sold to the next lower income group and in time to yet another income group. In the meantime, the demographic profile begins change by ethnicity, income, age variation, and family life style. Generally, single dwellings become multiple ones and owners become predominated by rentiers. Because the regressive nature of the property structure works against tax improvements, others (sometimes called "slum lords") find that more revenue can be generated by reducing the internal space of the structure and providing housing for more families. In the end, the buildings (sometimes called "hollow shells") are condemned and revert back to the city. Categorically, it provides a base of land disuse for the city as a tax burden.

On the other hand, suburban growth is uninterrupted unless there is a physiographic impediment. Suburbanites have many benefits. In fact the city should be looked upon as a support system to the suburb. Generally, the tax base is lower, suburbanites can utilize the advantages of the city while maintaining and insuring homogeneity of like social backgrounds in the neighborhoods. Over and above that, the local suburban governments can be more immediate and responsive to their needs, and importantly, as annexation occurs the county institutions have reduced work loads and are, therefore, able to provide better services e.g., street repair and snow removal.

Not all suburbs grow and become old in the same way. In more affluent suburbs the process is much slower with, in many instances, an outcome resembling a gold coast phenomena. Large old homes become retail shops, stores, and apartments. A suburb that is first inhabited by working class or low income residents has a growth life which is much shorter.

The tract house, along with the social and economic phenomena described earlier by Banfield (along with the automobile), all give rise to urban scatteration.[1] It would appear that individual city reform programs only delay this process.

The Overview

Where are we today in terms of housing? As a nation, the U.S. Department of Commerce indicates:

1. For the first time in U.S. history, there are more housing units in the suburbs than in the central cities of our metropolitan areas or in the non-metropolitan areas.

2. Home ownership grew proportionately more among blacks than among whites between 1960 and 1970.

3. There was a great increase in the number of mobile homes and trailers during the 1960's.

4. The number of apartments increased proportionately more than single family homes during 1960-1970.

5. The value of our homes went up greatly from 1960-1970.

6. There was a similarly large increase in the amount paid for renting homes.

7. Homes in 1970 were less crowded than in 1960 and earlier.

8. More homes had basic plumbing in 1970 than ever before.[2]

It would appear for Americans that there are now more renters than home owners, a phenomena which appears contradictory. But the important point is that there is an increase in both because there is an undoubling of households with the decline of the extended family to a neo-local one. This may also account for the statistics which show that housing is less crowded.

Brown[3] thinks we will see more single neo-local dwellings.

Future Housing: Super Industrial Trend Line Assumptions

What will housing be like in the future if there are no dramatic social and economic changes?

First, it is possible that the most dramatic aspect of housing will be in the interior. Northwestern Bell[4] projects picture phones for the Minneapolis area by 1976-78. Video screens, flexible walls, functional furniture, increases in the use of plastics, and increases in mobility between homes (dependent upon the age-life-cycles) are likely to occur.[5]

However, neither the exterior nor the type of construction will be dramatically different. Though the labor union movement is small in the United States, the skill trades are extremely strong. As is the local developer, so also is the trade union jeopardized by modular housing.

Given super industrial trends, it is difficult to predict the future of modular housing.

Clark[6] sees that by the end of the 1980's, modular concepts will have beaten custom building except for the luxury market. He also sees the cost of housing encouraging smaller homes and less yard space.

Jamison Moore[7] indicates:

> New housing and urban redevelopment will create such a large market for the home construction industry

that it will finally have to innovate and make changes to keep up.

Fowler[8] also sees such a demand for new construction that it will require mass production.

On the other hand, U.S. News and World Report[9] is not as optimistic, and recent court battles have favored custom builders.

Modular systems appear to be the key to solving Americna housing problems according to an ABC documentary "The Building Innovators."[10] If modular systems do not succeed there would be major increases in suburban apartments, condominiums, and mobile homes. In some respects the mobile home of the future may be the prefab and the tract house of the World War II era.

From the authors' perspective the degree of spread is dependent upon modularism. If modularism succeeds, we will see higher land consumption than if it does not. On the other hand, unplanned mobile homes and apartment dwellings may take a little less land, but they also have less space devoted to green areas.

Over and above the modular issue is the appearance that the construction industry will centralize and the majority of new housing starts will occur in the southern half of the nation.[11]

Housing and Urban Form

Generally, single dwelling and its complementary yard space is a large consumer of land. Every major new design tries to incorporate privacy and territoriality into the space including, if possible, some outside consumer space.

In terms of the environment, housing consumes 35% of the energy production.[12]

Data on consumer preference and land use indicates that income is still the major variable.[13] Indicative of this is what urban geographers call individual characteristics of consumer housing preference. Besides income, stage in life style, life style preference, and attitudes toward journey to work are important. From their information housing changes are dependent upon price, type of house, type of neighbors, community institutions, and location with respect to a job.

Single dwelling is correlated with spread. Dependent upon the types of land control, multi-dwellings and condominiums can provide less land use and more green area. It appears to work when territorial and open-air social space is built into the high rise along with nearby (2 blocks or less) green area parks. In this instance land consumption is reduced. Secondly, land consumption is reduced if cottages are erected where doors do not face each other and there is a heavy concentration of wood and underbrush, and life cycle segregation can occur. Third, in high rise, recent evidence indicates that individuals recude crime and have a higher identity with the project when a small number of doors face each other.

As an overview, man-land relationships are dependent upon the degree of single dwelling houses and the spatial distance from each other.

An Arcological Society*

What if there is a dramatic change in the social-

*The authors have attempted to portray each system based on the assumptions and value judgments of each system.

economic spectrum akin to a Green Revolution (described by Reich)? What effect would this have on housing?

First, megapolitan growth would be redistributed to urban core, new towns, and rural areas. Growth itself would be controlled through governmental agencies via an overall master plan. Zoning, housing codes, and other features would fit with existing established statutes.

Soleri[14] suggests an arcology system where man and land are viewed as working in harmony. Large numbers of people would distribute themselves in building systems adapted for territory and open-air social space. Greenbelts, woods, bike paths, and man-made lakes would be developed within the urban core, yet distributed in such a way as to be within short walking distances of the high-rise. Industrial parks would be allocated away from living areas and hidden by foliage, polychromatic ecological colors, and architectural design. Commuting would be accomplished by mobile sidewalk, electric car, and personal rapid transit system.

Though traditional cottage designs, angular forms, and established forms would remain, there would be an emergence of Fuller's geodesic domes.[15]

Governmental representation based upon land (e.g. senator from each district) would be changed and representation would be based on occupational categories (e.g. representation for plumbers, teachers, clerks, etc., or what is called a "syndicalist system"). Local government now based on agricultural divisions (county and state) would diminish and there would be a new emergence into super community government, regional government, and federal level government.[16]

For a particular area, a super community government (with corresponding neighborhood city halls) would probably be responsible for a metropolitan system and surrounding satellite cities. With an interdependent relationship with the regional government and the Federal government in Washington, D.C.

The Restoration Tract System

On the other hand, what if the system should revert to the previously established system ?

As the economic growth becomes more based on real prosperity of the laissez faire variety than from the "forced" prosperity of Keynesianism, there may be a doubling of households. Living with relatives is an ideal system when one is dependent upon voluntary associations for welfare, medical care, and the like. It is also extremely helpful during depressions.

With the doubling of households, the skilled working class may drift back into the urban core because of economic depression. Housing may become slightly larger and more functional (e.g., the house-frau design system).[17]

Flight to the suburbs may be diminished because public law, in terms of open housing, would return to social custom and the individual's ability to use his economic freedoms. These abilities are generally considered along genetic and sexual biology. Housing segregation and selected impaction and concentration of the Third World Community would ensue.

On the whole, the cities' housing, public library systems, schools, etc., would take on a lower profile in terms of esthetic appearance.

For those who through hard work, talent, and inheritance could make it to the top in terms of the "American Dream," housing would be palatial. A neo-gold coastal phenomena would return. Elegant, hand-crafted custom housing could be produced because of much-reduced labor costs.

Generally, the spread that would occur would be less than the super-industrial trends, but more so than an arcological system.

Conclusion

Housing is a visible element of urban form. Future projections of city life must include this basic element of social organization.

Housing and its spatial distribution is highly related to the total system. It is suggested that the private land development process is most likely to occur in the future.

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Chapter Seven

Transportation Systems

Transportation Systems

Introduction

The beginning of the American city can be visualized as a tightly compacted area where mobility was carried out by foot or animal power. Up to World War II, mass transit systems were major carriers for many in the city. From that time period on, the internal combustion automobile became the vehicle of personal conveyance.[1]

Mortimer gives an overview of the early problems of mass transit systems and why they failed during the war years.

> ...Some of these financial failures were due to poor planning, inefficient operation or even financial chicanery. There were other failures caused by excessive and unrealistic demands written into transit franchises. Most transit companies were required to remove the snow, not only from their tracks but also from the adjacent traffic lanes of the streets. They were required to sprinkle the streets to keep down

the dust and the blowing of the pollutants. Often the companies were required to build and operate lines into undeveloped areas of the community or to operate all night "Owl" service on lines where the crews' main problem became loneliness. Since there were a lot more patrons than stockholders, the companies were convenient whipping boys and holding the fare down became a favorite vote-getting project for the local politicians.

While wages and power costs increased with the years, fares remained comparatively constant. When one views the buses, trains, tracks and depots of a modern transit system, it is difficult at first glance to realize that a transit system is a labor intensive system. A quick check of a typical transit system's operating report will show how much money is paid out in wages.[2]

Since the war, in most areas support for the system has diminished.

Thus the automobile emerges as the predominate mode of transportation. Data indicates that urban America will use

the auto for even the shortest trips. In many instances, anything beyond three blocks requires the car.[3]

The Automobile

The popularity of the automobile appears to be viable and enduring. Chrysler Corporation predicts boom sales in the early 1980's.[4] Projections for the year 2000 envisioned nearly one car for every adult.[5] Lindsey notes that the auto is expected to remain the country's number one means of travel.[6]

Why the success of the car? Keeffer suggests:

> What is there in the automobile's hold on the public that could be usefully incorporated in transit planning?
>
> 1. An origin-to-destination method of transportation.
> 2. Normally Available at all times.
> 3. Goes in any direction at the whim of the driver.
> 4. Doesn't have to stop and pick up others.
> 5. Provides privacy and reasonable safeguards against the annoyance of others.
>
> No other method of transportation since the horse and buggy has afforded such advantages to the individual driver and his family.[7]

To add to the success of the automobile an elaborate road and highway system, built around the needs of the car has emerged.[8] A motorist can drive 1,800 miles non-stop, except for toll booths and gasoline fills, from Massachusetts to South Dakota. The interstate highway system is now about two-thirds complete. Projections are to link every population center of 50,000 or more.[9] Even land around the interstate has increased in value as well as productivity.[10]

However, if the individual auto survives in the future, it may change, as indicated by Financial World:

> ...The transportation and travel field will be one of the giants in the U.S. Economy over the next 65 years. The motorist probably will be driving a car with a different transmission system, and a radically new engine, as compared with those in use today. And he may not even have to steer the vehicle,-- it will be propelled down a highway merely by keeping it fixed on an electric beam.[11]

Others suggest changes just as dramatic.[12]

Mass Transit Forms

However, not all are enamored with the auto. With continued growth in the cities, there appears to be another approach to the carrier operations.[13]

> Los Angeles is planning two express lines for buses only on a stretch of the San Bernardino Freeway. Mansfield, Ohio, is testing a dial-a-bus service developed by Ford Motor Company; Dallas is trying out electronic devices that control cars seeking to enter expressways; and New York City is expanding its new network of computer-controlled traffic lights. Paris is digging up the Place Vendome and other historic sites for underground parking, and Florence is the latest Italian city to create a pedestrian island, a sizable section of downtown closed to the private car.[14]

In Los Angeles, autos are multiplying faster than people. The country's present 3.5 million cars will double in the next decade.[15]

The impact of the growing number of cars should be felt most keenly in America's cities. "By the end of this decade, metropolitan traffic volumes are projected to increase roughly 40% in Pittsburgh, 50% in Boston, and 90% in Detroit.[16] Planners predict that traffic will be

moving slower and slower in the future despite regional expenditures already totalling $3 billion for new highways and arterial roads, and $1.1 billion for a rail rapid-transit system.[17]

Freeways were once thought to be the answer but downtown freeway construction is being blocked in city after city.

Some now regard freeways as an enticement to people to drive downtown where ample parking, in many cases, does not exist. "Between 250 and 300 square feet of space is needed for every car that commuters park in the city. Most highway interchanges built to accomodate auto commuters take up at least forty acres of land and sometimes twice as much."[18]

Chicago's Streets Commissioner James McDonough indicates:

> The greatest answer to the traffic problem is rapid transit and subways.[19]

Other transportation people also believe that coping with today's traffic requires that some demand be shifted from the private auto to public transit.

The American Transit Association figures that "one rail track can move 70,000 persons an hour. One exclusive bus lane can carry 40,000 persons an hour. But only 4,500 motorists can travel on one lane of expressway in an hour using the typical load of one and one-half persons per car."[20]

One of the more popular mass transit systems being used in cities around the country is the bus. Milwaukee is a leader in this form of transportation. Milwaukee's buslane now cuts "a 56-minute ride from suburbs to downtown to 33 minutes." Two out of five riders who now ride the bus formerly drove their cars into Milwaukee.[21] They park in fringe lots in shopping centers, then board the bus for quick and efficient transportation. Milwaukee is now planning to build a two-lane highway next to an existing freeway, exclusively for buses. The buslanes are expected to be congestion-free, "carrying 47,000 riders each weekday by 1990, or 25% of the rush-hour travelers who commute along that busy corridor." This

would mean a reduction of about 6,000 in the number of cars that might otherwise be drawn into and parked in Milwaukee.[22]

Buses have an important advantage over the fixed rail systems. Not only can they go over 60 miles per hour on private lanes, they can pick up and drop off commuters in downtown sectors of business districts.

Some believe that a better solution is one which combines the convenience of the auto with the high-capacity rate of the rapid transit. One such system is called dual-mode. It would operate in two modes, either manually driven on conventional highways or under automatic control over special guideways.

> On the guideway, all driver functions would be performed automatically, with the vehicle picking up its guidance and speed instantaneously from a third rail. The driver could read or relax until his exit. A single guideway 7 or 8 feet wide could carry the same number of cars a 5 lanes of highway, 10,000 vehicles (or 15,000 people) per hour.[23]

The dual-mode system is still filled with many unknowns. General Motors had shied away from developing the dual-mode because the possible damages in case of accident would be so great special legislation limiting liability would be needed. "The fail-safe mechanism to assure safety at high speeds bumper to bumper have yet to be developed and proven."[24]

Other cities in the United States are using different types of mass transit systems:

New subways and urban rail lines are being built or definitely planned for construction in San Francisco, Washington, D.C., Atlanta, Baltimore, Los Angeles, Miami, Minneapolis-St. Paul, Pittsburgh, and Seattle.

Extension of existing rail transit systems are being built or planned-New York, Chicago, Boston, Cleveland, and Philadelphia.

Subway construction is being considered in Buffalo, St. Louis, Dallas, Houston, and Detroit.

Many cities are developing bus routes--lanes which are restricted solely to buses built along-side

existing freeways. These lanes connect large parking facilities in the suburbs and downtown areas. Los Angeles is considering a twelve-mile busway eastward from the city core, making use of a rail right-of-way.

Washington has exclusive bus lanes under construction on Shirley Highway south of the city. When these are completed, the riding time would be cut in half.[25] The city will also "Install a computer to control lights at major intersections throughout the city, and buses will have sensing units that can change the lights to green as they approach an intersection, thus moving mass transit faster."[26]

Pittsburgh is working on two such busways, using a railroad right-of-way and an old trolley car route. Detroit is acquiring right-of-way for a proposed lane in an express-way median.[27]

Howard Sibbley of the Washington Bureau of the World Herald suggests the viability of the buslane system.

Others have suggested the following alternatives:

1. Car pools sponsored by corporation located on stress corridors.[29]

2. Strategic air travel.[30]

3. Tube trains.[31]

4. Personal rapid transit.[32]

5. Automated highways.[33]

6. Movable sidewalks, downtown segregation of cars, and minibus support service.[34]

7. People movers -- smaller than streetcar vehicles usually programmed to conform to the traffic flow which carry people around small cities, large airports and the like. The major problem lies in programming the special demands of individual travelers into the general traffic flow, a necessity if people are to be persuaded to abandon their private cars.[35]

8. Dial-a-ride -- this is a computerized minibus system, allowing door-to-door service anywhere in town.[36]

9. Tracked air-cushioned vehicles -- this vehicle rides just above the track on a cushion of compressed air.

The vehicle could travel at 150 miles-per-hour initially, and will probably have a feasible speed of 300 miles-per-hour. It might be ideal for awkward areas like southern California, where commuting distances range from 50 to 200 miles -- too long for efficient rail service and too short for big airplanes.[37]

Morris Forgash, in his article, "Transportation: Year 2000," forecasts that locomotives will be nuclear-powered, and the cars and tracks will be wider. Cars will be cut out, switched (sideways) and loaded and unloaded automatically by radio-controlled devices. People-pods will be whished from convenient locations in major cities and deposited by helicopter on special flat cars to ride in stream-lined comfort.

We will have advanced highways equipped with radio beams so that drivers can put their vehicles on automatic pilot. Trucks will be banned from city streets.

Monorails in the air, or a "people pipeline" running under ground will relieve the congestion which is choking our cities.[38]

Transportation and Politics

Robert Ayres, an urban transport researcher and Ford Foundation offical in his "Urban Transportation of the Future" suggests that political considerations play an important part of the transit system. He indicates that mass transit is less viable in our economic configuration because it is presently difficult to incorporate into the market system. The auto companies have little incentive to participate, but are still involved in some of the research. Further, the future of urban transportation depends upon which political coalition wins. To make the issue understandable, he suggests two "teams":

> Now let us look at the characteristics of the urban transportation market: There is an exchange transaction. There is (some) competition. There are buyers and sellers, whom you might call "players", because the market is very much like a "game" in the mathematical sense of the word.
>
> I would like to suggest the oversimplified but not totally inappropriate notion that the players in the market may be viewed as belonging to two teams.

I will call one team red and the other blue.

The red team consists of the automobile industry, the petroleum industry, the state highway departments, the Federal Highway Administration, the construction industry, the cement industry, and most suburbanites -- at least, most suburban politicians.

The blue team is hard to identify for certain. The U.S. Department of Housing and Urban Development probably belongs on the blue team, along with the Office of Economic Opportunity. Secretary of Transportation Alan Boyd has been talking like a blue. New York Mayor John Lindsay is also a blue as is Ralph Nader. Poor people are definitely blue.

Members of the red team believe generally that low density development of the suburban type is a good thing. They do not like crowds (at least on foot). They believe everybody should have wheels, and mass transit should be left to buses, nothing else. A city's major needs, the red team holds, are more freeways and better parking facilities. High density

development should be discouraged and where it exists should be allowed to die on the vine. No tax money should "subsidize" high density urban centers. High density is bad for people.

The blue team maintains that cities exist, and can't be legislated out of existence. Most of our people live in urban areas, and urban areas without "downtowns" are economic, architectural, and cultural absurdities. Moreover, city living is a well tried and ancient form of himan association. People need a variety of communities and they like diversity of surroundings, access to specialized services, and the amenities that only a city can provide. As far as transportation is concerned, the blue team believes that cities need some freeways to be sure, but also alternatives to freeways and automobiles -- alternatives like minibuses, automated electric taxis, "demand-activated" computer-scheduled jitneys, moving sidewalks, and so on.

The blue team argues, moreover, that in the past cities have paid taxes for highways which benefited

> the suburbs and drained the cities of their high income citizens. Suburbanites have run away from their social responsibilities, and now the city needs help.
>
> A forecast of future urban transportation technology is equivalent to a forecast of the outcome of the game being played between reds and blues. On the basis of the existing relative economic and political power of these two teams, everybody in his right mind would clearly pick red as the winner, although he perhaps wouldn't want to predict any absolute victory.[39]

From these authors' viewpoint, it would appear that given trend line assumptions, there will be a continuance of auto-dominated systems.

In terms of mass transit, the Public Transportation Assistance Act was passed by Congress in November, 1970, but the funds were not large.[40] The Bill in 1973 to divert funds from highway to mass transit systems failed in the legislative branch of the Federal Government.

Transportation and Urban Form

How does transportation translate into man-land relationships?

The city according to Cooley emerges because of transportation.[41] The urban structure is a manifestation of at least two major intersects of transportation.

The intersect enhances the city's power in what Cooley called the "power of transfer." That is, the power to transfer goods from one dissimilar transportation mode to another. Latent functions engendered from pwer of transfer include economic power as well as political authority. In terms of Cooley's analysis, the transportation intersect location emerged as a production location.

Razzle, Semple, and others have sought to study the physiographic and topographic aspects to location which cause trasportation breaks, but the intersect theory appears to reamain viable.

Notwithstanding the various methodologies of transportation -- land relationships (land use, trip-purpose regression Markov models), various data has been encountered in this area.[42]

Iszard has helped to describe location theory and space preference.[43] Huff has suggested that age is the most dominant element in consumer space preference followed by personality, sex, education, mental synthesizing abilities, occupation, and income. Spatial factors play a significant role in determining individual movement patterns like space preference of the individual, his location in the overall space economy, and the relative ease with which he may move from place to place within the system.

However, the important variables in terms of transportation focus around "axial growth." This growth forms around the major modes of transportation. From analysis of historical city patterns, various transportation systems can encourage various forms. Early foot and animal power encouraged compaction. Later mass transit systems continued impaction, but also encouraged sectoral growth along the rail corridor. The auto along with the Interstate and arterial highway has encouraged amoeba-like spread.

Given the continuous use and dominance of the automobile, quasi-colloidal dispersion or sprawl is envisioned.

Transportation Projections

Given zero-order drift, it would appear quite likely that individual autos (of some form) with its complimentary road system shall be the dominant mode of transportation.

In reference to this area, it would appear that the following reasons will keep the system viable. The list does not follow a rank order of importance. Auto travel should prevail because:

1. The political coalition can ensure its survival.

2. The auto is the safest buffer from crime and racial tension.

3. Those most likely to suffer from congestion and pollution near their residence generally do not form a strong coalition.

4. Class differences and distances are most likely to extend with the auto as suburbanites can escape and mass transit has the potential to bring large low income groups out to suburban retail outlets and residences.

However, trend line projections would also include some mass transit. But, the overwhelming amount of tax dollars will be spent dealing with the auto and auto-related modes. The other may serve as a support and aesthetic function. The mass transit may be triggered by the city's concern to duplicate, in a small way, what is occurring on a slightly larger level in the megapolitan belt.

Given the drift, it would appear to these authors, that engineers, planners, and others who normatively and in an over-technological sense envision future mass transit systems, also overlook facets like the potential military expenditures and war-related activities of the future. They also appear to miss the importance of this political coalition and where this coalition is likely to reside.[44]

A Mass Transit Society

If the following conditions should occur, one might expect a mass transit system. They include: 1) a "green revolution" of life style, 2) a viable environmental and urban coalition, 3) a move toward post-Keynsian social-

market political and economic system, 4) heavy expenditures in research and development for fast, quick, clean and safer systems, 5) diminishment of crime, 6) racial and class harmony, 7) master land planning and fiscal collectivism.

Accepting the above list, it would appear that the high speed urban mass transit system would emerge. Even then, we still predict some individual autos.

The shape of the city, in terms of population distribution, would tend toward concentration although some horizontal growth would accur along sectoral lines.

An Interstate System

This projection assumes that certain current problems within the system accelerate and that the highway system is a direct manifestation of these problems (which may not be the case). We are indicating here though that highway development in itself does not necessarily cause problems nor prevent them, but is one subset of a larger whole. As an example, fewer interstates would come about

if certain inner-city groups are restricted from movement about the city. However, if the high way system is seen as a viable approach to transport people from the city to the suburbs then more arterials and interstates may be envisioned than even in trend line projections.

Under these, every major city would have an interstate. The auto market would greatly expand. Parking, conjestion, and pollution (dependent upon what kinds of anti-smog devices develop) would present certain problems to the inner-metropolitan region, but not necessarily with the same degree to the suburban ring.

City government and services will continue to duplicate and decentralize. The city should have greater spread. The downtown area would increasingly diminish, but "dollar sovereignty" and the "unseen hand" will have worked its will.

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[38]Morris Forgash, "Transportation-Year 2000," Modern Transportation:Selected Readings, 1967, p. 415.

"$30 Billion," loc. cit.

[39]Robert U. Ayres, "Urban Transportation of the Future," The Futurist, August, 1968, p. 33.

[40]Ibid.

[41]Charles H. Cooley, Theory of Transportation(Baltimore: Publications of the American Economic Association, 1894).

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Chapter Eight

A Summation

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It is tempting, especially after digesting a wide range of forecasts, to draw conclusions about the future. We yield briefly to this urge and relate our thoughts. They are not what we necessarily would like to occur, but rather what we feel probably will happen. We claim not to be prophets, but rather synthesizers utilizing the thoughts of others. These forecasts are molded by significant recurring forces within the system and we recognize how the power of unique events can affect the future.

So, given these assumption, what do we see ahead?

The country should be larger, more centralized, urbanized, and complicated. Specialty subcultures will emerge, and the family will be more democratic. Religion will not vanish, but will survive.

Our population should increase moderately and our energy consumption should also increase if it has continued environmental support. We do not envision a pleasant ecological environment, and we see energy shortages, but not enough to cripple a nation.

Politically, our present system should remain, though it may become a bit more authoritarian. We see the continued dominance by the business classes and a few sectors of the labor movement. Corporation capitalism will probably prevail although a few socialist institutions may emerge.

Categorically, the economic forecast appears bright given the country's military dominance. Distribution of the country's wealth will probably still gravitate overwhelmingly to the top.

Although the individual private home will be the ideal, there will be a continued growth of multi-housing in the form of apartments, condominiums, trailer parks and other forms.

The individual auto, although it may change in structure and composition, will remain the most viable mode of transportation.

That is the way we see it, using the perception of others whose wisdom we have attempted to chronicle. Whether it is a "good life" is subject to interpretation.

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