

UTOPIA AND DETERMINISM: ARCHITECTURAL DETERMINISTIC THINKING IN URBAN UTOPIAS¹

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Much dissatisfaction has been expressed about current urban design practice by various groups, such as users, clients, social scientists and members of the architectural profession. Each of these groups is influenced in a unique way by the results of the current practice. Users, or "user clients" in Zeisel's (1981, 34-35) terms, who are unsatisfied with the built environment often either try to change the layout of the environment so that it will afford the desired behavior patterns or end up suffering from problems which range from lack of maintenance to crime, in cases where they cannot bring about any changes. "Paying clients" (Zeisel, 1981, 34-35), on the other hand, have to confront financial burdens in similar situations. A well-known example where both user clients and paying clients suffered from crime, the former being affected physically and psychologically, and the latter, financially, is the Pruitt-Igoe housing project in St. Louis which was partially demolished by the authorities in 1972, 21 years after it won an award from AIA. There are also some social scientists and architects who are responsive to the problems in their environment and who reflect their dissatisfaction by means of a critical discourse. In this kind of discourse, the weaknesses in current urban design practice have mostly been ascribed to its reliance on the urban utopian models developed in the West during late nineteenth and early twentieth centuries. However, a consensus has not been reached over the reasons cited for the fallacy of these models. While many critics agree that the major reasons for the fallacy of these urban utopias are rooted in their narrow conception of function, or "convenience" in Vitruvius' terms, as being based only on biological needs and technological innovations and not on social or psychological needs, and in their presumption of the universality of the application of prototypes, a third issue has brought about confusion. One group of critics claim that another major reason behind the fallacy of the urban utopias is rooted in their belief in architectural determinism, *ie.*, the belief that the built environment is a major determinant of social life, while another group argues that the mistake lies in architects' erroneous prediction of future social life and designing accordingly. The aim of this paper is to resolve this confusion by re-evaluating some of the most well-known urban utopias of late nineteenth and early twentieth centuries.

Before discussing the ideas of the utopians of the period under concern for a possible reflection of a belief in architectural determinism, I would like to clarify the concepts of "architectural determinism" and "utopia". The concept

2. "De" means "from, away" and "terminare" means "to limit" (derived from "terminus: limit, boundary") (See Webster's Third New International Dictionary, 1981 edition; entry "Determine").

of architectural determinism has been often confused with environmental or physical determinism. The emphasis in this paper is on "architectural determinism" which is a specific determinist theory that needs to be distinguished from "environmental determinism" and "physical determinism" for the purpose of clarity. The etymology of the English word "determinism," which was first introduced in the seventeenth century, is derived from the Latin *determinare* which means "to limit"². Based on Gibson's definition of "environment" as consisting of a "terrestrial", an "animate" and a "cultural" component (Gibson, 1966, 7-30), environmental determinism refers to the belief that all environmental factors, including both physical and social ones, rather than hereditary factors, determine behavior. Since environmental determinism considers social as well as physical factors, it is not as objectionable as physical or architectural determinism, the former referring to "... the belief that the terrestrial environment shapes behavior..." and the latter to "... the belief that changes in "built form" will result in changes in social behavior" (Lang, 1980, 148). On the other hand, physical determinism, which also embodies architectural determinism in it, can be criticized because of its exaggeration of the influence of the physical environment, its assumption that the physical environment has only a direct influence on behavior, its perception of people as passive in the environment-behavior relationship with no choice or goals, and its assumption that the environment is a constant unlikely to be changed or modified (Franck, 1984, 412). Among the three types of determinism referred to above, architectural determinism is the concern of this paper with the emphasis being on the role of architectural deterministic thinking in the development of the urban utopias in late nineteenth and early twentieth centuries.

The word "utopia" is derived from "... the Greek word *topos* (place) and a pun on *eu* (good) and *ou* (not) " (Reiner, 1963, 16). This ambiguity between *eutopia* (good place) and *outopia* (no place) has been reflected in utopian writings which have sometimes presented feasible ideal structures, while at other times they have merely delineated unattainable dreams. Thus, in contrast to Mannheim's commonly cited definition of utopia which comprises only those ideas that offer revolutionary possibilities tending to shatter the bonds of the existing order either partially or totally (Mannheim, 1936, 192-196), the argument in this paper is that utopia can range from an image to a well formulated plan of action. In fact, an analysis of utopian texts which have actually existed throughout history, in spite of the fact that the word "utopia" was first coined in the sixteenth century³, reveals that the nature of utopian thought underwent a transformation in history. As Rowe and Koetter point out, utopian thought embodied little activism before late eighteenth century; it remained as an idea rather than as a proposal of implementation (Rowe and Koetter, 1978, 14)⁴. The economic and technological changes brought about by the Industrial Revolution during late eighteenth century in Europe, and the simultaneous transformation in the intellectual background, characterized by rationalism, freedom of thought and political fights for human rights, influenced utopian thought. Thus, "the contemplative platonic model" of utopia was replaced by a "far more energetic utopian directive" led by "Newtonian rationalism" which was based on the belief that society and the human condition are based on laws as infallible as those of physics (Rowe and Koetter, 1978, 15). This belief underlies the emerging emphasis on environmental determinism by the utopians of late eighteenth and early nineteenth centuries.

The changing nature of utopian thought in history, however, does not affect its basic meaning which is rooted in a dissatisfaction with the current state of affairs. Whether utopia is presented as an image or a well formulated plan of action, it is based on a discontent with the present, and a desire to replace the present with an imaginary vision of the past or a future that is considered to be better than the present. In accordance with this definition, utopians are divided into two groups in this paper: those who strive to reconstruct the present by replacing it with images from the future are called progressive utopians and those whose aim is to revive the past in the present are identified as regressive

3. The word "utopia" first appeared as the title of an essay written by Sir Thomas More in 1516 (More, 1965). However, the earliest record of a journey in search of an earthly paradise is the story of Gilgamesh which exists on stone tablets dating from 2000 B.C.

4. See also Shklar (1965, 371).

5. This division of utopian thought into "progressive" and "regressive" approaches bears a certain resemblance to Choay's argument (Choay, 1969) with some differences in the period of concern and in the choice of terms. Focusing on planning in the nineteenth century, Choay defines two major utopian models of spatial organization in the nineteenth century as "progressist" and "culturalist". In this paper, not only has this duality been extended to the twentieth century, but also the term "culturalist" has been avoided as a title for one of the utopian schools of thought because of the meaning-laden nature of the term "culture" and the polarity that has often been perceived between "utopia" and "culture".

utopians. Progressive utopians reject all associations of the past and emphasize efficiency, cleanliness, speed, rationality and economy as the main characteristics of the new age while regressive utopians reveal a nostalgia for the local community spirit of the past and attempt to reassociate urban life with nature⁵.

The utopian approach, which is based on the anticipation of developing new environments from scratch, is not the only approach adopted by thinkers to criticize existing social and/or physical environments. There are also reformers who have sought for piecemeal changes as a means of correcting the problems of existing environments. However, the emphasis in this paper is on the proposals of the utopians of late nineteenth and early twentieth centuries because these have had a more widespread influence on current urban design theories and practice. In fact, these proposals have been put to practice in the development of new towns in various countries with different positions in the hierarchical pattern of the world economy. The widespread tendency to develop new towns based on these utopian models is due to the belief that new towns would resolve the housing shortage that haunted urban areas as masses of people migrated from rural areas to cities at an increasing rate after the Industrial Revolution. Other factors, such as "(developing) frontier regions," "(exploiting) concentrated resources," "(symbolizing) a new political or economic orientation", have further enhanced this development (Susskind, 1974, 291). Most of these new towns, however, have not fulfilled the expectations of their developers and supporters in the sense that they have not become the anticipated ideal environments. This outcome can be related to the fallacies of the theories on which these new towns were founded, one of which can be identified as the belief in architectural determinism.

As mentioned above, a belief in environmental determinism can be clearly observed in utopian thought after the Industrial Revolution. However, an analysis of utopian texts reveals that a belief in architectural determinism became prevalent in utopian thought only after the second half of the nineteenth century. For example, a study of the urban utopias of the first half of the nineteenth century, such as the proposals of Robert Owen and Charles Fourier, shows that they gave equal emphasis to the role of social and physical factors in creating an ideal community and that they did not profess a belief in architectural determinism. Owen, arguing that the character of man is not formed by him but for him, stressed the roles of both proper education and proper environment in reaching his ideal "New Moral Order" (Owen, 1813, 23). In his proposals for New Lanark in Britain (1817) and New Harmony in the United States (1825), equal emphasis was given to both social and physical organization. Fourier, in a similar line of thought, was not even concerned with the physical form of the Phalanx which he presented in 1822 as the ideal social and economic unit of organization in the last historical period humanism could elevate itself in the future (Fourier, 1971). His followers were the ones to draw the Phalanstery, i.e. the main building of the Phalanx, "... as a socialist version of Versailles" (Vidler, 1973, 88). There was one proposal in late eighteenth century, however, which carried implications for a belief in architectural determinism. This was the 1787 Panopticon proposal of the British thinker Jeremy Bentham. Bentham envisioned the Panopticon, or the Inspection House, whose plan would be a basis for the design of different institutions ranging from prisons to chicken coops, as "the universal panacea" (Figure 1). The Panopticon was a 4-6 story fenestrated cylindrical well which was covered on top and which had cells or rooms at the edges and a small cylindrical kiosk at its center embodying the lodgings of the manager of the institution (Evans, 1971, 21-37). According to Bentham, this plan which enabled one person to control a large group of inmates would "automatically and inevitably" reform them. In Bentham's own words,

Morals reformed - health preserved - industry invigorated - instruction diffused - public burthens lightened - Economy seated as it were upon a rock - the Gordian knot of the Poor - Laws not cut but untied - all by a simple idea in Architecture! (Bentham, 1791, i).

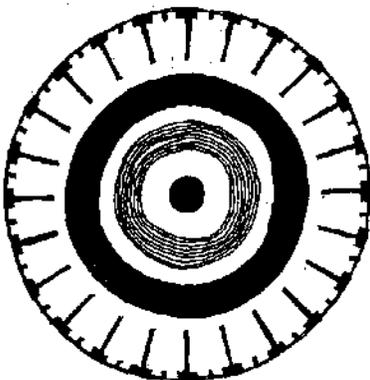


Figure 1. The Penitentiary Panopticon of Bentham.

The Panopticon idea which was based on such an explicit statement of a belief in architectural determinism remained only as a proposal and could not be implemented by Bentham due to various obstacles. Until mid-nineteenth century, only a few prisons which were either direct or deviant versions of the Panopticon model were built. In fact, it was not until the second half of the nineteenth century that the theory behind Panopticon, *ie.*, the belief that the physical environment can shape behavior, became prevalent in architectural and planning thought.

The transformation that architectural and planning thought went through in the second half of the nineteenth century which affiliated it with a belief in architectural determinism can be related to several major developments that took place in this period. The crisis of the 1848 Revolution in France is one of these. As Benevolo points out, planning thought was separated from social thought in the aftermath of the failure of the 1848 Revolution in France as social and political scientists became inclined to dismiss attempts at physical improvement as partial reforms which would be a setback to total social revolution while architects, planners, technicians and reformers began to focus on the physical aspects of planning which could be more easily controlled than the social aspects (Benevolo, 1971, 105-147).

The confusion experienced by architects who were in the process of defining their role in society during this period further enhanced the emerging emphasis on architectural determinism. In fact, with major changes taking place in building patronage and in the types of buildings required after the Industrial Revolution, architects were faced with the problem of clarifying their place in "... the triadic relationship of artist - technologist - social engineer..." (Lipman, 1974, 26). Architects found themselves dislocated from their self-image as artists since they no longer functioned merely as designers of works of art for wealthy patrons whose values and social background they shared. In the second half of nineteenth century, they were instead confronted with the problem of designing mostly new kinds of settings and objects for the daily use of a mass clientele in urban areas which had grown in size and population in a short period of time as a consequence of the new production and consumption patterns introduced by the Industrial Revolution. In contrast to their one-to-one relationship with wealthy patrons, architects now had an indirect relationship with the users of their buildings who had become distinctively different from their paying clients. Parallel to these developments, a social and administrative gap appeared between architects and their clients since architects had difficulty in adapting to the new relationship between themselves and their clients. This phenomenon, in return, generated a sense of dissatisfaction about the built environment because the users no longer had choice or control over the settings and objects they used and because the emerging products were not suitable to their needs or values. In their confusion, architects, who were equipped with various technological inventions of the nineteenth century, moved closer to the self-image as technologists. However, as a compensation for their dislocation from the self-image as artists, architects also leaned on the self-conception as social engineers. By believing that the settings they designed could determine social behavior, architects must have hoped to counter their alienation from their user clients.

A third factor which contributed to the prevalence of a belief in architectural determinism in the second half of the nineteenth century is the conclusion reached by numerous studies which were carried out with the aim of analyzing the causes behind the various cholera epidemics in England and Europe⁶. These studies argued that there was a strong correlation between unhealthy physical conditions in which people lived and the physical, social and psychological problems they had. Influenced by these studies, architects and planners tended to believe that good physical form would bring about a healthy social structure.

Various studies carried out by social scientists in the early twentieth century further reinforced the belief in architectural determinism because of their unclear

6. The reports that Edwin Chadwick prepared on the living conditions of the low-income groups in England during his appointment as the Inspector of the Poor Law Commission in England between 1832 and 1854 are examples to such studies.

conception of environment-behavior relationship. The work of classical ecologists like Louis Wirth, Ernest Burgess and Robert Park, who were the early members of the Chicago School of Sociology, were especially misleading. These studies about the structure of the American city, which were carried out in the 1920s and 30s, adopted a simplistic view of causality and claimed that it was possible to predict the effects of ecological factors on social life. This kind of research which was based on an unclear conception of environment-behavior relationship complicated the problem more as architects who were in search of role definition adopted these analyses literally and used to support their belief in architectural determinism.

The prevalence of a belief in architectural determinism in architectural and planning thought lasted until mid-twentieth century. After the 1950s, some social scientists and architects adopted a different approach. In fact, although there were some social scientists who pursued a similar line of thought as the classical ecologists, there were others especially after the 1950s, such as Janet Abu-Lughod and Maurice Broady, who became aware of the problems of the belief in architectural determinism and argued that although the physical environment is an important factor in fostering social relations, its role is not deterministic. A transformed attitude towards the belief in architectural determinism can be observed not only among social scientists but also among architects after mid-twentieth century. The Second World War years during which building activity was largely curtailed had given architects and planners time to re-evaluate and criticize some previously held beliefs. This critical outlook was reflected in the sixth Congress of CIAM held in Bridgewater, England in 1947, where a new emphasis was given to socio-psychological needs. As Kenneth Frampton points out, the sixth Congress, which led to the formation of Team 10, marks the beginning of the third and final stage of CIAM (Frampton, 1980, 271). Based on the preceding discussion, the limits of the period in which a belief in architectural determinism becomes prevalent in utopian thought can now be set more distinctly as extending from 1848 to 1947.

In fact, a content analysis of the texts of some of the most influential urban utopians of the period from 1848 to 1947, including Soria y Mata, Howard and Wright from the regressive utopian school of thought, and Garnier, Sant'Elia and Le Corbusier from the progressive utopian school of thought, shows that most of them explicitly stated a belief in architectural determinism. Soria y Mata, for example, who was the promulgator of linear planning, proposed the *Ciudad Lineal* in 1882 as a means of resolving all complex problems of the world at once (Figure 2). He was so confident in his scheme that he envisioned the Linear City as a 500 meter wide street which would extend from Cadiz to St. Petersburg, and from Peking to Brussels. He claimed that the Linear City would bring peace to the world and eliminate the need for the police" (Soria y Mata, 1968, 189-193). In a similar line of thought, Frank Lloyd Wright who developed the Broadacre City proposal in 1932 expected a lot from architecture and the architect (Figure 3). In fact, the architect was assigned the most powerful position in the Broadacre City: "... free leader of free human beings in our new free country" (Wright, 1957, 24), who would be responsible for the development of the physical structure of the city, the control of the suitability of buildings in Broadacre to the principles of organic architecture, and the allotment of land to the residents. Wright presented the architect

... as savior of the culture of modern American society; ... savior now as for all civilizations heretofore (Wright, 1957, 24).

Broadacre City itself was proposed by Wright as a means of saving civilization. In his words,

we are impelled to build this city if we desire salvation for our civilization (Wright, 1958, 156).

These statements reveal Wright's belief in architectural determinism. The only

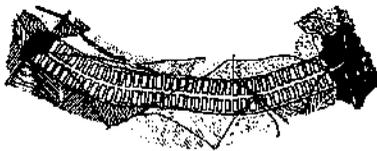


Figure 2. The layout of a Ciudad Lineal.

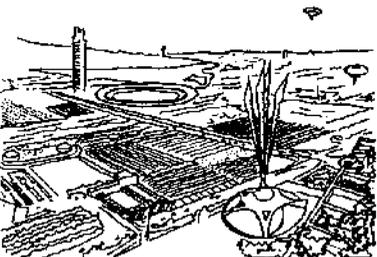


Figure 3. Aerial view of Broadacre City.

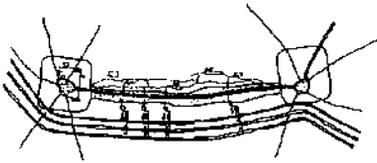


Figure 8. Schematic diagram of the *Industrial Linear City* linking Radiocentric cities.

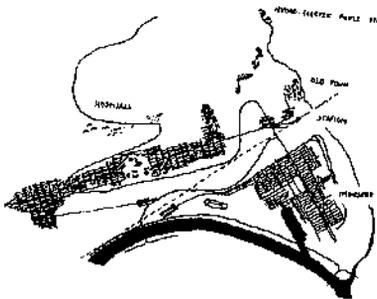


Figure 9. Schematic diagram of *Cité Industrielle*.

also in his discourses on architecture in general. In fact, the most powerful statement that Le Corbusier makes reflecting his belief in architectural determinism is the often quoted final sentence in his book *Towards a New Architecture*:

Architecture or Revolution - Revolution can be avoided (Le Corbusier, 1970b, 269).

For an architect who believed that

it is the question of building which is at the root of the social unrest of today (Le Corbusier, 1970b, 14)

social revolution could be prevented if the correct type of architecture and urban planning was applied. Another architect from the progressive utopian school of thought whose ideas have been influential on the architectural and planning thought of the twentieth century is Tony Garnier. An analysis of the text accompanying the drawings of the *Cité Industrielle* proposal published in 1917 reveals that unlike Sant'Elia and Le Corbusier, Garnier did not profess a belief in architectural determinism (Garnier, 1929) (Figure 9). Although his emphasis was on the physical organization of his proposed city, he did not claim anywhere in his text that the physical organization would determine the social organization. Rather, Garnier assumed that certain social changes had already taken place and planned his city accordingly. However, Garnier differs from the early nineteenth century utopians like Owen and Fourier because he does not discuss the details of the social organization in the *Cité Industrielle* while he goes into minute details of its physical organization.

In short, content analysis of the texts of six urban utopians from the regressive and progressive utopian schools of thought in the period from 1848 to 1947 reveals that four of these utopians, Soria y Mata, Wright, Sant'Elia and Le Corbusier, professed a belief in architectural determinism. This analysis also demonstrates that the consideration of the social organization as well as the physical organization in an ideal city proposal does not necessarily inhibit the belief in the deterministic role of the physical environment. In fact, even though Wright and Le Corbusier considered and developed a social organization model for their proposed ideal cities, they still professed a belief in architectural determinism.

These findings support the claim that one of the reasons for the limitations of contemporary new towns which have been developed on the basis of the urban utopias of late nineteenth and early twentieth centuries must be related to the belief in architectural determinism dominating these urban utopias. In order to eliminate these limitations, architects and planners need to re-evaluate the relationship between the built environment and the social environment. In fact, many recent studies have shown that the influence of the built environment on social behavior and social change is only indirect. The architect and planner can provide affordances;⁷ however, this does not necessarily mean that they will be perceived and used by the people involved. The use of affordances provided by the layout of the environment depends on the competence levels, predispositions, values and interests of the users (Lang, 1980, 146-153). In other words, the architect and planner can only provide "the potential environment"; "the effective environment," on the other hand, is defined by the users.⁸ Architects must realize that design can only provide the potentials for desired patterns of behavior and reduce the affordances for the undesired ones. Thus, as Ackerman states,

... (architects') demanding role is to find ways to aid and encourage their society to speak through its buildings, in other words to be catalysts, or translators in the sense of the distinguished poets who re-form literary achievements in another language" (Ackerman, 1969, 6).

7. The term "affordance", which refers to characteristics of the layout of the environment, has been coined by James Gibson. Gibson explains that affordance is invariant and does not change as the observer's needs change (Gibson, 1977, 138-139).

8. Gans has used the term "potential environment" to refer to the physical environment, and the term "effective environment" to specify "that version of the potential environment that is manifestly or latently adopted by users" (Gans, 1968, 6).

ÜTOPYA VE DETERMİNİZM: ONDOKUZ VE YİRMİNCİ YÜZYIL KENTSEL ÜTOPYALARINDA MİMARİ DETERMİNİST DÜŞÜNCENİN ROLÜ

ÖZET

Günümüzde kentsel tasarım alanındaki uygulamalarda ortaya çıkan sorunlar, genellikle, bu uygulamaların ondokuzuncu yüzyıl sonları ile yirminci yüzyıl başlarında Batı'da geliştirilen ütopyik kent modellerinden esinlenmesine bağlanmıştır. Bu dönemdeki kentsel ütopyalar, fonksiyonu dar anlamda ele alarak sadece biyolojik gereksinimler ve teknolojik buluşlara önem verdikleri, sosyal ve psikolojik gereksinimleri ise gözardı ettikleri ve evrensel olarak uygulanabilme varsayımına dayandıkları için eleştirilmişlerdir. Bu makalede öne sürülen üçüncü bir eleştiri konusu ise bu kentsel ütopyaların, aynı zamanda, mimari determinist düşünce - mimari çevrenin sosyal yaşamın en önemli belirleyicilerinden biri olduğu inancı - ile biçimlenmiş olmasıdır.

Makalede ütopyik düşüncenin tarih içindeki gelişiminden söz edilmiş ve mimari determinizmin ondokuzuncu yüzyıl sonuyla yirminci yüzyıl başları arasındaki dönemde geliştirilen kentsel ütopyalarda ortaya çıkış nedenleri açıklanmıştır. Bu dönemdeki ütopyik kent modelleri *progressive* (geleceğe yönelik) ve *regressive* (geçmişe özlem duyan) yaklaşımların ürünleri olarak iki ayrı grupta ele alınmıştır. Bu iki yaklaşımın ortak eleştiri noktası mevcut mimari ve kentsel çevredir; ancak, ikinci gruptakiler geçmişin yerel topluluk ruhuna özlem duyarak kentsel yaşamı doğayla yeniden ilişkilendirmeyi amaçlamışlar, birinci gruptakiler ise geçmişle tüm ilişkiyi kopartmış ve verimlilik, temizlik, hız, rasyonellik ve ekonomiyi yeni çağın en önemli özellikleri olarak ele almışlardır. Yaklaşımlarındaki farklılıklara karşın ondokuzuncu yüzyıl sonları ile yirminci yüzyıl başlarında yaşayan ütopyacılar önerdikleri kent modellerinde genel olarak mimari determinist düşüncüyü benimsemişlerdir. Bu devrin en etkili kentsel ütopyacılarının yazıları incelendiğinde söz konusu eğilim açıkça görülmektedir. Geleceğe yönelik yaklaşımı benimseyen Sant'Elia, Le Corbusier ve Garnier ile geçmişe özlem duyan yaklaşımı benimseyen Soria y Mata, Wright ve Howard'ın kent tasarımıyla ilgili yazılarından verilen örnekler, mimari çevrenin sosyal yaşamı belirleyeceği kanısının bu dönemdeki kentsel ütopyalarda genel olarak egemen olduğunu göstermektedir.

Bu tür yaklaşımlar sonucunda gerçekleştirilen uygulamalardaki sorunlar mimari çevre ile sosyal çevre arasındaki ilişkinin mimarlar ve planacılar tarafından yeniden ele alınması gerektiğini ortaya koymaktadır. Son yıllarda yapılan pek çok araştırma mimari çevrenin toplumsal davranış ve toplumsal değişim üzerindeki etkisinin ancak dolaylı olabileceğini göstermiştir. Mimar ve planca ancak potansiyel çevreyi sağlayabilir, fiili çevreyi ise kullanıcılar tanımlar. Mimari ve kentsel çevreye böyle bir yaklaşım daha gerçekçi ve sağlıklı önerilerin oluşmasında yardımcı olacaktır.

REFERENCES

- ACKERMAN, J.S. (1969) Listening to Architecture, *Harvard Educational Review* (39:4) 4-10.
- BANHAM, R. (1967) *Theory and Design in the First Machine Age*, Praeger Publishers, New York.
- BENEVOLO, L. (1971, 1963) *The Origins of Modern Town Planning*, trans. J. Landry (1967) M.I.T. Press, Cambridge.
- BENTHAM, J.S. (1791, 1787) *Panopticon; or The Inspection House*, (3) T. Payne, London.

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- CHOAY, F. (1969) *The Modern City: Planning in the 19th Century*, trans. M. Hugo and G.R. Collins, George Braziller, New York.
- DOSTOĞLU, N.T. (1986) *Architectural Deterministic Thinking in the Development of Urban Utopias, 1848-1947*, unpublished Ph.D. Dissertation, University of Pennsylvania, Philadelphia.
- EVANS, R. (1971) Bentham's Panopticon: An Incident in the Social History of Architecture, *Architectural Association Quarterly* (3:2) 21-37.
- FOURIER, C. (1971, 1876) *Design for Utopia: Selected Writings of Charles Fourier*, trans. J. Franklin, Schocken Books, New York.
- FRAMPTON, K. (1980) *Modern Architecture: A Critical History*, Oxford University Press, New York.
- FRANCK, K.A. (1984) Exorcising the Ghost of Physical Determinism, *Environment and Behavior* (16:4) 411-435.
- GANS, H.J. (1968) *People and Plans: Essays on Urban Problems and Solutions* Basic Books, Inc., New York.
- GARNIER, T. (1929, 1918) *Une Cité Industrielle: Etude Pour la Construction des Villes*, Massin, Paris.
- GIBSON, J.J. (1979) *The Ecological Approach to Visual Perception*, Houghton Mifflin Co., Boston.
- GIBSON, J.J. (1966) *The Senses Considered as Perceptual Systems*, Houghton Mifflin Co., Boston.
- HOWARD, E. (1965, 1898) *Garden Cities of To-morrow*, M.I.T. Press, Cambridge.
- LANG, J. (1980) The Built Environment and Social Behavior: Architectural Determinism Reexamined, *VIA* (4) 146-153.
- LE CORBUSIER (1971, 1924) *The City of Tomorrow and Its Planning*, trans. F. Etchells (1929), M.I.T. Press, Cambridge.
- LE CORBUSIER (1967, 1933) *The Radiant City: Elements of a Doctrine of Urbanism to be Used as the Basis of Our Machine-Age Civilization*, trans. P. Knight, E. Levieux, D. Coltman, Orion Press, New York.
- LE CORBUSIER (1970a, 1961) A Talk to Students, *Four Great Makers of Modern Architecture: Gropius, Le Corbusier, Mies van der Rohe, Wright*, trans. C. Rieger, De Capo Press, New York, 168-171.
- LE CORBUSIER (1970b, 1923) *Towards a New Architecture*, trans. F. Etchells (1927) Praeger, New York.
- LIPMAN, A. (1974) The Architectural Belief System and Social Behavior, *Designing for Human Behavior: Architecture and Behavioral Sciences*, eds. J. Lang et al., Dowden, Hutchinson and Ross, Inc., Stroudsburg, 23-30.
- MANNHEIM, K. (1936, 1929) *Ideology and Utopia: An Introduction to the Sociology of Knowledge*, trans. L. Wirth and E. Shils., Harcourt Brace Jovanovich, New York.
- MORE, T. (1965, 1516) *Utopia*, trans. P. Turner, Penguin Books, Harmondsworth.
- OWEN, R. (1813) *A New View of Society*, Richard Taylor and Co., London.
- REINER, T.A. (1963) *The Place of the Ideal Community in Urban Planning*, University of Pennsylvania Press, Philadelphia.
- ROWE, C., KOETTER, F. (1978) *Collage City*, M.I.T. Press, Cambridge.
- SANT'ELIA, A. (1914, 1967) *Messaggio, Theory and Design in the First Machine Age*, R. Banham, Praeger Publishers, New York, 128-130.
- SHKLAR, J. (1965) The Political Theory of Utopia: From Melancholy to Nostalgia, *Daedalus* (94) 367-381.

- SORIA Y MATA, A. (1968, 1883) La Cuestion Social y la Ciudad Lineal, *Arturo Soria Y la Ciudad Lineal*, eds. G.R. Collins and C.Flores, Revista de Occidente, Madrid, 189-193.
- SUSSKIND, L. (1974) Planning for New Towns : The Gap Between Theory and Practice, *The Community: Approaches and Applications*, ed. M.P. Effrat, The Free Press, New York, 291-310.
- VIDLER, A. (1973) News from the Realm of No-Where *Oppositions* (1) 83-92.
- WRIGHT, F.L. (1958) *The Living City*, New American Library, New York.
- WRIGHT, F.L. (1967) *A Testament*, Horizon Press, New York.
- ZEISEL, J. (1981) *Inquiry by Design: Tools for Environment-Behavior Research*, Brooks and Cole Publishing Co., Monterey.