

**Visions of a Technological Future:
Experience and Expectation of Progress in the Interwar
United States**

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Tiivistelmä – Abstract <p>Tarkastelen tutkielmassa maailmansotien välisenä aikana Yhdysvaltalaisissa tiede- ja tekniikkajulkaisuissa Popular Mechanicsissa ja Popular Science Monthlyssa esiintynyttä tulevaisuusajattelua. Tutkielman tarkoituksena on selvittää mitä tulevaisuudesta maailmansotien välisenä aikana Yhdysvalloissa ajateltiin. Erityisesti tarkastelen mitä edellä mainituissa aikakauslehdissä kirjoitettiin kaupungin, rakentamisen ja kodin tulevaisuudesta.</p> <p>Käsittelen aineistoa pääosin historiallisen kuvatutkimuksen keinoin. Tutkimuksen teoreettinen viitekehys pohjaa Reinhart Koselleckin historiallisten aikojen teoriaan, erityisesti kokemustilan ja odotushorisontin väliseen suhteeseen. Tämän tutkielman hypoteesi on, että kirjoittajien optimistiset tulevaisuudenodotukset syntyivät 1800-luvun lopun ja 1900-luvun alun hyvin nopean ja kiihtyvän teknologisen kehityksen seurauksena. Tämä teknologisen kehityksen kokemus tuotti odotuksen siitä, että teknologinen kehitys tulisi myös jatkumaan kiihtyvänä.</p> <p>Ainestosta ilmenee, että kirjoittajat kokivat elävänsä uutta aikakautta, joka poikkesi kaikista sitä edeltävistä aikakausista teknologisesta kehityksestä ja sen kiihtyvistä vauhdista johtuen. Vaikka tulevaisuuskuvat olivat tyypillisesti erittäin optimistisia ja niissä ennustettiin suuriakin muutoksia ihmisten elämäntyyliin, olivat ne kuitenkin oman aikansa kuvia ja esimerkiksi naisten rooli tulevaisuuskuville jäi hyvin vähäiseksi ja muuttumattomaksi.</p> <p>Pessimistisiä tulevaisuuskuvia ei aineistosta merkittävästi ilmene. Edes 1930-luvun pitkä lamakausi ei näy vaikuttaneen tulevaisuuskuviin negatiivisesti. Yksi todennäköinen syy pessimististen tulevaisuuskuviin poissaololle on, että lehtiin kirjoittivat ja sitä lukivat teknologiasta kiinnostuneet ihmiset. Toinen todennäköinen syy on, että yritykset — joiden mainostuloista lehdet olivat riippuvaisia ja joiden johtoportaan toimivien henkilöiden kirjoittamia artikkeleita lehdissä säännöllisesti julkaistiin — uskoivat, että viittaukset tulevaisuuteen lisääisivät heidän tuotteidensa myyntiä.</p>	
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1. INTRODUCTION

This thesis examines the visions of the future in the period between the world wars in the United States. This study is specifically concerned with the visions of the future expressed in the American popular science and technology magazines, *Popular Mechanics* (PM) and *Popular Science Monthly* (PSM). In short, this study aims to answer the following questions: what did the writers of PM and PSM write about the future and why they wrote what they did. This study concerns images or visions of the future and it has drawn from the methodology and vocabulary of historical image research and uses the terms “image of the future” and “vision of the future” interchangeably. The theoretical framework of this thesis is in part inspired by Reinhart Koselleck’s theory of historical times, especially, his categories of experience and expectation and their role in the experience of modernity. This thesis is arranged thematically into chapters that concentrate on the future of a particular subject. The first chapter deals with technological enthusiasm in the interwar America. The second chapter examines the more general visions of the future from the viewpoint of Koselleck’s philosophy of historical times. The last two chapters concentrate on the city and the home of the future, as they bring together many different aspects of the society of the future. As Corn and Horrigan have stated: “To describe the future community is to describe the future in its most complete and telling terms.”¹

The history of past futures remains a relatively unexplored field of study, discussed often only in passing. This study also shares many similarities with the social history of technology which is more concerned with the interaction of technology and society than with machines or separate technologies². This also means that this study is more focused on the social than the individual. The focus of this study is on the visions of the future and the attitudes and values attached to any particular technology discussed in those visions and on the society that produced them. That is to say, the primary aim of this study is not to examine what PM and PSM wrote about any particular technology and whether the information they provided was accurate; the aim is, rather, to examine the attitudes and values that were attributed to technology. Of the established fields of

¹ Corn & Horrigan 1984, 35.

² Cowan 1997, 3.

historical research, intellectual history is perhaps the most fitting for this study. The historical background of the past American visions of the future has mostly been drawn from the collection of essays edited by Joseph J. Corn, *Imagining Tomorrow: History, Technology, and the American Future*; Howard P. Segal's *Technological Utopianism in American Culture* and *Future Imperfect: The Mixed Blessings of Technology in America*; Corn and Brian Horrigan's *Yesterday's Tomorrows: Past Visions of the American Future* and Thomas P. Hughes' *American Genesis: A Century of Invention and Technological Enthusiasm, 1870–1970*.

Many of the articles examined in this study might today seem naïve in their seemingly blind faith in technology and an ever better future. To quote Corn, it seems today “puzzling that anybody could have seriously expected automobiles to run forever on atomic power, people to commute by private helicopters, or X-rays to cure the common cold.”³ At the core of this study are the questions of how and why intelligent people came to believe in these things. This study aims to answer these questions by combining Koselleck's categories of experience and expectation with the methodology of historical image research. Guided by this theoretical framework and what could be best termed as hermeneutic interpretation, this thesis has used basic source criticism and asked such questions as when, by whom, and why were the sources written and what did they contain. Illustrations also form an important part of the primary sources of this study. These illustrations have been dealt largely in the same manner as the texts, that is to say, by asking such questions as what, when, why, and how is something being portrayed in any one illustration. The hypothesis of this study is that the optimistic expectations of a near-utopian future were born out of experience of radical acceleration of change and technological advancement during the so called Second Industrial Revolution, lasting from the latter half of the nineteenth century until the First World War. In other words, the experience of this period of radical technological change was a major factor behind the optimistic expectations of future that were expressed in PM and PSM in the period between the First and the Second World War. Simply put, the writers extrapolated from their experiences of rapid technological advancement to forecast an even faster pace of advancement in the future. Concrete examples of this extrapolation can be seen in the

³ Corn 1986, 2.

visions of the city of the future, particularly in their scale and the size of their buildings. Extrapolation of the future will be discussed more in-depth in chapter four.

1.1. SOURCES

The turn of the twentieth century witnessed a rise in number of articles about the future in magazines such as PM and PSM. The impact of rapidly advancing technology and scientific breakthroughs had fostered an air of confidence about the future and a belief that the future would be radically different from the present. The articles were often magnificently illustrated with pictures of future cities, vehicles, and other such machines. These illustrations form a valuable part of the source materials as images often have more emotional impact than simple text. Article by article these magazines provided the reader with a fragmentary vision of a technological utopia. PM and PSM, along with other smaller magazines such as *Science and Invention* and *Modern Mechanix*, did much to shape the Americans expectations for the future during the interwar era.⁴

PSM had been founded in 1872 and PM thirty years later in 1902. The magazines' names reflect their differences; PSM was more reserved and scientific in its tone whereas PM dealt more with technology and speculated more freely about the future. They both did much to popularize technological innovations. They had scientific credibility in the eyes of the lay audience and according to historian Scott Zeman they both "enjoyed a significant degree of cultural influence."⁵ PM and PSM rarely discussed politics explicitly but it must be noted that the magazines received a good deal of their revenues from advertising which was reflected in the number of guest writers from big corporations. As Roland Marchand has written, "inventions and their technological applications made a dynamic impact only when the great mass of people learned of their benefits, integrated them into their lives, and came to lust for more new products."⁶ According to Marchand, the advertisers worked under the presumption that the public wanted to see images of "life as it ought to be" instead of realistic depictions of actual

⁴ Corn & Horrigan 1984, 6; Corn 1986, 3–4.

⁵ Zeman 2008, 697.

⁶ Marchand 1985, 1.

life⁷. Images of better future sold, or at least, they were thought to sell⁸. Although this thesis is not focused on advertising, it nonetheless played a notable role in promoting certain images of the future.

This study has focused mostly on the longer articles that discussed the future. These articles were mostly written by technological enthusiasts to fellow technological enthusiasts, thus making technology the focal point of their predictions and leaving the social issues to background. It has been rather difficult to find reliable information on the authors of the articles themselves and many of the articles were also published without a name. As this study is more focused on the society than the individual, this should pose no big problem. However, the writers of PM and PSM also included such distinguished figures as Winston Churchill and many inventors and executives of industrial corporations including Henry Ford and Charles F. Kettering. The writers mostly comprised of members of the upper classes, forming a sort of vanguard of the forward-thinking intelligentsia whose views and thoughts were presented from the top down to the masses. The writers and readers of the magazines were almost invariably white men and this was also reflected in their contents, that is to say, the visions of the future expressed in PM and PSM were the visions of well-to-do white men and they contain very few references to any other gender, race or class. Therefore, it can safely be said that the articles examined in this study do not represent the views of the American population in general, a point whose importance cannot be overemphasized.

Although this study is not focused on the thinking of some individuals, there are certain names that do come up more often than others or are more important for this study and deserve an introduction. One of these important individuals was the Swiss architect and urban planner Le Corbusier whose influence on the visions of interwar cities and homes of the future was undeniable as will later be shown. Another important figure was the American delineator and architect Hugh Ferriss who, along with other notable American architects such as Harvey Wiley Corbett and Raymond Hood, was instrumental in shaping the face of the cities of the future in the 1920s and early 1930s.

⁷ Marchand 1985, xvii.

⁸ Corn 1986, 4.

The articles that were written about the future, often focused on the future of a certain technology and not of the society as a whole. As David E. Nye has pointed out, “all technological predictions and forecasts are in essence little narratives about the future. They are not full-scale narratives of utopia, but they are usually presented as stories about a better world to come.”⁹ Taken together, however, these fragmentary narratives about the better future can, in a sense, form in the reader’s mind a more comprehensive utopian narrative. Nye has identified three different forms of technological prognostication: prediction, forecasting and projection. According to Nye the unknown is predicted, possibilities are forecast, and probabilities are projected. Predictions are made of breakthrough inventions such as the telephone or the electric light. Forecasting deals with innovations, understood as improvements on previous inventions. Projection concerns itself with new models of existing technologies.¹⁰ Most of the prognostications examined in this study belong to the first two categories; prediction and forecasting. A case could also be made that some of the articles about the city and home the future were more akin to short-term projection. Nye’s categorization, as seen in the following table, is a useful analytical tool in examining the content of the articles.

Table 1¹¹

Form of prognostication	Persons typically involved	Their focus	Their time frame
Prediction	Inventors, utopian writers	Breakthrough inventions	Long term
Forecasting	Engineers, entrepreneurs	Innovations	Less than 10 years
Projection	Designers, marketers	New models	Less than 3 years

According to Nye, the best way to market a new innovation is to “present an innovation as not just desirable but inevitable.”¹² If the investors and consumers believe in the inevitability of the product, it can become a self-fulfilling prophecy. Inventors and

⁹ Nye 2006, 35.

¹⁰ Nye 2006, 33–34.

¹¹ Nye 2006, 34.

¹² Nye 2006, 35.

corporations “create not only products but also compelling narratives about how these new devices will fit into everyday life.”¹³ Inventors and investors whose livelihoods depend on these products often “propose dramatic future scenarios in which their particular device will become indispensable for the average person.”¹⁴ In other words, articles about the future also had a purpose of creating demand and share many qualities with advertising. In other words still, they were selling the future.

The attitudes toward technology put forward in PM and PSM ranged from technological enthusiasm to full-blown technological utopianism. They frequently published articles which exhibited visions of a better future to be brought by technological advance to their readers. Segal has defined technological utopianism as “a mode of thought and activity that vaunts technology as the means of bringing about utopia.”¹⁵ According to Segal, there should be a qualitative difference between utopia and pre- or non-utopia. The realization of utopia, then, necessitates an occurrence of radical change in the pre-utopian society, that is, unless the pre-utopian society is already perceived to move towards utopia.¹⁶ However, the adjective “utopian” can simply refer to any separate quality which is perceived as highly beneficial. Technological enthusiasm is a more self-evident term; it simply means enthusiastic and optimistic attitude towards technology.

During the 1920s the magazines reported actively on the vast number of the decade’s new inventions. Electrification was spreading rapidly to homes and farms, and along with it, new household appliances like the washing machine, refrigerator, and radio. The hard times of the 1930s didn’t seem to affect the contents of the magazines that much. While the science fiction of the interwar period often dealt with dangers of rapidly advancing technology, the popular science magazines, PM and PSM among them, published articles which presented the readers with optimistic visions of a better world of the future based on the newest technology¹⁷. Despite the harsh economic conditions and the pervasive unemployment of the Great Depression, both PM and PSM, increased their circulations notably. In fact, PSM, which had been founded in 1872, more than

¹³ Nye 2006, 36.

¹⁴ Nye 2006, 211.

¹⁵ Segal 2005, 1.

¹⁶ Segal 2005, 11.

¹⁷ Nye 1990, 343; PM, vol. 179, no. 3, 2002, 117, 120, Seelhorst, Mary, ”Zero to 100”.

doubled its circulation during the 1930s and PM also increased its circulation during the decade by over 40 percent. By 1940 the circulations of PM had risen from the 1930 figure of 443,000 to 632,000; during the same period, the circulation of PSM had increased from 288,000 to 624,000. PM and PSM were easily the most read popular science magazines in the United States in the 1930s, with the combined circulation of over 1,250,000 in the year 1940.¹⁸ These magazines have enjoyed a broad circulation among boys and young men ever since the early twentieth century. The readership of PM and PSM has consisted mostly of males, however, according to David E. Sumner, PM had “always attracted some female readers with reviews and how-to articles on repairing home appliances, household and fashion items.”¹⁹ This should, more or less, apply also to PSM.

The archives of both PM and PSM are available on Google Books²⁰ in a searchable form which has been a great help in combing through the thousands of pages of material. The combination of manually browsing through the magazines as well as using various search terms makes it highly unlikely that I have missed any relevant articles.

1.2. THEORETICAL FRAMEWORK AND METHODOLOGY

This is a study of past futures; it examines images of the future as expressed in the past. These images of the future tell us nothing about the actual future that has since unfolded nor does it interest us. This study is interested in what the images of the future expressed in PM and PSM tell us about the interwar period in the United States. Historical image research provides this study with the basic methodology and vocabulary of studying images. Koselleck’s theoretical notions provide this study with a fruitful explanatory framework for understanding the images of the future and their connection to the experience of modernity. Specifically, the dialectic of experience and expectation helps us to understand why respectable scientists, businessmen, and politicians entertained beliefs that may seem irrational to us.

¹⁸ Sumner 2010, 75, 77.

¹⁹ Corn 1986, 4; Sumner 2010, 40–41.

²⁰ <http://books.google.com/>

This study starts with the assumption that the images of the future expressed in PM and PSM were seriously entertained and based on rational beliefs. Even though the visions of the future examined in this study may seem outlandish to us, that wasn't the case when they were expressed. As Quentin Skinner argues, "Even in the case of beliefs that nowadays strike us manifestly as false, there may have been good grounds in earlier historical periods for holding them to be true."²¹ According to Skinner, the rationality of any belief "depends in large measure on the nature of our other beliefs."²² Specific beliefs can be interpreted "by placing them in the context of other beliefs" and "by placing them in wider intellectual frameworks."²³ A similar point has also been made by historians of science and technology; past ideas should not be judged by current standards. "Failed" ideas should be subjected to historical investigation just as the more "successful" ideas.²⁴

As mentioned above, the theoretical framework of this study is in part inspired by Koselleck's theory of historical times. One of the more elusive aims of this study is to explore the uses and applications of Koselleck's theories in concrete historical research. This study attempts to heed Koselleck's call about investigating the relationship between past and future, experience and expectation. A cursory understanding of Koselleck's philosophy of historical times is therefore instrumental for the understanding of this thesis, especially what is meant by his categories of the space of experience and the horizon of expectation:

"Historical times can be identified if we direct our view to where time itself occurs or is subjectively enacted in humans as historical beings: in the relationship between past and future, which always constitutes an elusive present. The compulsion to coordinate past and future so as to be able to live at all is inherent in any human being. Put more concretely, on the one hand, every human being and every human community has a space of experience out of which one acts, in which past things are present or can be remembered, and, on the other, one always acts with reference to specific horizons of expectation. I propose investigating this relationship between past and future or, more precisely, the relationship of specific experiences and expectations, so as to get a grasp on historical time. That historical time occurs within the difference between these two temporal

²¹ Skinner 2002, 31.

²² Skinner 2002, 4.

²³ Skinner 2002, 4–5.

²⁴ Pinch & Bijker 1987, 18; Cowan 1987, 261; Skinner 2002, 4–5, 27–31.

dimensions can already be shown by the fact that the difference between experience and expectation itself changes—that is, it is specifically historical.”²⁵

The categories of experience and expectation embody past and future respectively. However, they both take place always in the present; “experience is present past” and expectation is “the future made present.”²⁶ “At once person-specific and interpersonal”, experience is not the same as memory, as it also includes “unconscious modes of conduct” and “an element of alien experience contained and preserved in experience conveyed by generations or institutions.”²⁷ Expectation comprises “hope and fear, wishes and desires, cares and rational analysis, receptive display and curiosity.”²⁸ According to Koselleck, “There is no historical act that is not based on the experiences and expectations of those involved.”²⁹

Experience, that is to say, present past, always appears to us as complete, unlike expectation which is “scattered among an infinity of temporal extensions.”³⁰ Unlike experience, which appears to us as complete, our expectations are always fragmentary; it is impossible to envision the future as a whole. Most importantly, expectation is derived from experience: “The space of experience, open toward the future, draws the horizon of expectation out of itself. Experiences release and direct prognoses.”³¹ This study aims to explain the optimistic, even utopian expectations for the future as expressed by the writers of PM and PSM throughout the interwar era, in light of their past experiences.

Koselleck has argued that “in modern time, the difference between experience and expectation has steadily increased”³² and that “expectations have distanced themselves evermore from all previous experience.”³³ There are some problems with this view and Anders Schinkel has argued convincingly against it. According to Schinkel, experience and expectation cannot be separated from each other at all; unless they are given

²⁵ Koselleck 2002, 111.

²⁶ Koselleck 2004, 259

²⁷ Koselleck 2004, 259

²⁸ Koselleck 2004, 259.

²⁹ Koselleck 2002, 126–127.

³⁰ Koselleck 2002, 127; Koselleck 2004, 260.

³¹ Koselleck 2004, 262.

³² Koselleck 2002, 127–128.

³³ Koselleck 2004, 263.

content, experience and expectation are merely formal categories. That is to say, experience and expectation, in the singular, are simply formal categories devoid of content; experiences and expectations, in the plural, are filled with content. Schinkel writes that Koselleck's "thesis would be correct if he claimed that the content of experiences and the content of expectations diverged in the modern period, but this does not mean that thereby expectation and experience are now disconnected. On a more abstract level, expectations still reflect experiences."³⁴ To do away with this problem, Schinkel has proposed a third category that bridges the gap between experience and expectation, namely, the category of imagination. Schinkel writes that "experience always shapes expectation through the mediation of imagination."³⁵ Simply put, experience of change produces expectation of change, the specific contents of which are shaped by imagination. It is also worth to note, that former expectations too become experience. The more expectations are left unfulfilled, the more it affects future expectations, which, given enough time, lead to more cautious expectations and a decline in utopianism. The twentieth century did, indeed, witness such a decline in utopian thought after the Second World War.

Modernity, according to Koselleck, is characterized by a temporalization of history and a "peculiar form of acceleration."³⁶ The main cause behind this acceleration was what Koselleck calls "technoindustrial progress":

"From the late eighteenth century, another finding joins the one we have just discussed: that of technoindustrial progress, which has an impact, albeit a varying impact, upon everyone. It became a general empirical principle of scientific invention and its industrial application that they gave rise to an expectation of progress that could not be calculated in advance. A future not inferable from experience released all the same the certainty of an expectation that scientific inventions and discoveries would bring about a new world. Science and technology have stabilized progress as a temporally progressive difference between experience and expectation. Finally, there is an unmistakable indicator of the way in which this difference persists only through its constant renewal: acceleration."³⁷

³⁴ Schinkel 2005, 47.

³⁵ Schinkel 2005, 48.

³⁶ Koselleck 2004, 11.

³⁷ Koselleck 2004, 269.

According to Koselleck, expectations for the future affect the present in various ways³⁸. In times of great optimism about a technologically determinist future, some of the present problems could be ignored on the basis that they will be solved soon enough. It is not unreasonable to assume that the rampant optimism of PM and PSM affected their contents. This becomes especially clear in the magazines published during the Great Depression as the pervasive social issues of the time were not reflected in the contents as much as one would expect. The harsh social realities of the 1930s were hardly ever discussed at length. There are of course many reasons for this, a major one being that optimism sells and another that PM and PSM were first and foremost magazines that dealt with technology and science, not social issues.

Koselleck's theories have received a fair share of criticism as well. Helge Jordheim discusses many of these criticisms in his article *Against Periodization: Koselleck's Theory of Multiple Temporalities*. The most relevant critiques to this thesis are the critiques of Koselleck's theory of modernity and its relation to his theory of historical times. Jordheim convincingly argues that Koselleck may have never really set out to develop a comprehensive "theory of modernity as such, but rather a theory that deals with the multiple temporalities unfolding between historical events and their linguistic representations."³⁹ Rather, as Jordheim claims, Koselleck was attempting "to understand the specific features of modernity."⁴⁰ It is these specific features of modernity that this study too is interested in, especially the relationship of experience and expectation in the interwar period visions of the future.

This study has also drawn from the methodology of historical image research, which has been mostly applied to studies of cultural encounters and how different cultures are perceived by each other, but as Matti Männikkö has argued, it can also be a useful method in examining images of the future⁴¹. Olavi K. Fält, one of the leading historians working on historical image research, states that "an image is longer-lasting and more durable than an opinion or attitude and that images are simplifications of the reality which they describe."⁴² He further elaborates that "an image is like map that we have in

³⁸ Koselleck 2002, 131–133.

³⁹ Jordheim 2012, 155.

⁴⁰ Jordheim 2012, 154.

⁴¹ Männikkö 1997, 254–270.

⁴² Fält 2002, 8.

our head, which depicts reality but is not in itself real by comparison with the objects it represents.”⁴³ According to Fält, images that reinforce already existing stereotypes are easier to accept, which may lead to a self-perpetuating cycle of reinforcement of the image thus making them more static. However, images can also change. Change in images occurs usually either as a consequence of dramatic events or gradually “as a consequence of repeated events that argue in the same direction.”⁴⁴

As already stated above, this study is not interested in the actual future, but rather what the images of the future tell us about the interwar period in America. It could be argued that historical image research is ideally suited for this purpose. As Fält states, “The specific object of study in image research is the creator or possessor of the image, the person who has a certain image of a phenomenon or thing in his mind.”⁴⁵ Historical image research is interested in how and why we form images, what purposes they serve and how these images change, and above all, what does this tell about the image-creators. Whether these images depict their object truthfully is not a concern of historical image research.⁴⁶ Fält has also argued that the more unfamiliar and distant the object of an image is, the more it reveals about its creator⁴⁷. The logic behind Fält’s argument seems to be that the less is known about the object of an image, the more the creator’s imagination enters into it, making the image more about the creator and less about the object it is trying to depict. This is an interesting claim and it warrants a closer examination.

Männikkö has stated that images of the future differ from other images in that they have no really existing objects. An image, or a vision, of the future often reveals what is seen as problematic in the present, that is to say, in a society that is deemed to be perfect, visions of the future would either be worse than the present or just similar; but not any better. An image of the future can also serve as a form of propaganda. Because the future exists only in our imagination, there are, theoretically, an infinite number of futures to choose from. No image of the future is typically chosen by random. An image of the future consists of something that the image-creator either believes, hopes, fears,

⁴³ Fält 2002, 8

⁴⁴ Fält 2002, 8.

⁴⁵ Fält 2002, 9.

⁴⁶ Fält 2002, 8–9.

⁴⁷ Fält 1995, 101.

or wants to happen.⁴⁸ Because “the future exists only in imagination”, as Corn has stated, a study of past futures is also always a study of the people who are propagating those visions.⁴⁹ An image of the future reflects the values of the image-creator in some way.⁵⁰ As Segal has stated, that utopian visions of the future “cannot themselves illuminate more than a portion of any real world culture, because, by their very design, they deviate and often distort existing society, especially when their principal purpose is to change it.”⁵¹ Predictions of the future can become self-fulfilling prophecies if enough people believe in them.

An image of the future is, indeed, more like an imaginary map which depicts unexplored territories. The cartographer does not simply fabricate the map from the top of her head; for the resulting map to be intelligible the cartographer must assume that the unexplored areas follow more or less the same laws as the known areas. The same principle applies to images of the future. Similarly, our cartographer, the creator of an image of the future, does not project randomly on the empty canvas of the future. She too, in order for the image to be intelligible to others, must assume that the future will be more or less the same as the past. Any intelligible image of the future is shaped by the creator’s experiences of the past. Or in Koselleck’s terms, the space of experience shapes the horizon of expectation.

⁴⁸ Männikkö 1997, 263; Samuel 2009, 2.

⁴⁹ Corn 1986, 2.

⁵⁰ Samuel 2009, 1.

⁵¹ Segal 2005, 4.

2. TECHNOLOGICAL ENTHUSIASM IN THE INTERWAR UNITED STATES

This chapter concentrates on the history of technological enthusiasm and utopianism in the United States and aims to provide a relevant historical context of the United States during the interwar era.

America had been an object of utopian hopes ever since its discovery by the Europeans in the fifteenth century. According to Segal, America was seen as a *tabula rasa*, an empty canvas on which it would be possible to paint the dreams of a new and better society. Segal has written extensively about the technological utopianism in America and how it has evolved throughout the past. America was first seen as a natural utopia; the land of plenty, the land of abundant natural resources. Segal writes that the idea of America “as a potential utopia to be brought about by technological progress is old and familiar,”⁵² long predating the actual technological accomplishments that were promising to transform the utopia into reality. For many centuries utopianism in America was mainly religious in its character and according to Segal, it wasn’t until the mid-nineteenth century that this utopianism started to become technological, inspired by the rapidly advancing technology. America had changed from a natural utopia to a man-made utopia; the realization of the American utopia would now depend on human beings, not on God.⁵³

The period between the late nineteenth century and the Second World War was a time of rapid technological advancement in the United States and throughout the western world. This period which coincides with the rise of the electrical industry, has become to be called the Second Industrial Revolution, or more rarely, the Technological Revolution⁵⁴. During this time, according to Hughes, “Americans commonly considered invention, industrial research, and systems of production the sources of goods for the good life and an arsenal for the great democracy.”⁵⁵ It was a high point of American inventiveness, unparalleled in human history. As Hughes states, “No other nation has displayed such inventive power and produced such brilliantly original inventors as the

⁵² Segal 1994, 1.

⁵³ Segal 1994, 1, 4, 6.

⁵⁴ Hughes 1989, 296.

⁵⁵ Hughes 1989, 443.

United States during the half-century beginning around 1870.”⁵⁶ According to Segal, it was during this period that many Americans came to believe in the “inevitability of progress and in progress precisely as technological progress.”⁵⁷ There was one group in particular that epitomized this belief, namely the technological utopians who “equated advancing technology with utopia itself.”⁵⁸ By 1920s, Americans had come to believe that the unprecedented advance and the power of modern technology was the one thing that characterized modernity and that they were living in the first truly modern age. Many believed they were witnessing a beginning of a new era which would continue far into the future.⁵⁹

The early 1920s were, according to Hughes, “the time of greatest excitement among contemporaries who believed they were experiencing [a new industrial] revolution.”⁶⁰ This new industrial revolution was associated with technologies such as electricity, the automobile, airplanes, radio, and new synthetic chemicals⁶¹. The modern environment was becoming more and more under human control, less natural and more artificial⁶². By the 1920s and 1930s the United States had become recognized by the industrial world “as the pre-eminent technological nation” and the era of technological enthusiasm reached its height just before the Second World War⁶³. During this period more and more people became aware of that they were living in an unprecedented time in history; the machine age. The cities and households were starting to fill with new technology: telephones, radios, movies, electrical refrigeration, and automobiles started to become a part of the everyday lives of the Americans. The affordable automobile greatly increased the mobility of people, binding the urban and rural areas closer together. It was a time of gigantic building projects; the time of skyscrapers, giant dams and

⁵⁶ Hughes 1989, 13.

⁵⁷ Segal 2005, 1.

⁵⁸ Segal 2005, 1.

⁵⁹ Hughes 1989, 297.

⁶⁰ Hughes 1989, 296.

⁶¹ Hughes 1989, 3. Hughes has argued that all of these inventions were in fact “embedded in technological systems” which “involve far more than the so-called hardware, devices machines and processes, and the transportation, communication, and information networks that interconnect them. [...] During the era of technological enthusiasm, the characteristic endeavor was inventing, developing, and organizing large technological systems – production, communication, and military.” As this study is not a history of technology, but rather a history of ideas or attitudes, I have chosen to focus on technologies as separate entities, just as the primary sources themselves do.

⁶² Hughes 1989, 296.

⁶³ Hughes 1989, 2, 9.

bridges.⁶⁴ One of the most radical changes was the electrification of the whole country. Electricity was still new and unfamiliar enough to inspire utopian hopes. Many, perhaps even a majority, still remembered what life was like before electrification, especially in the rural areas where many didn't receive electricity until the 1930s⁶⁵. Another technology that elicited utopian hopes was the airplane. During the first half of the twentieth century Americans shared a widespread belief in a possibility of owning personal aerial vehicles in the near future⁶⁶. During this period, magazines such as *PM* and *PSM* printed articles that promised airplanes or helicopters for every home and garage and the articles discussing the future often featured illustrations of future cities with their skies teeming with airplanes, helicopters, gyrocopters, and dirigibles.

Marchand has written that “for more than a century Americans had been chronically self-conscious of the speed of change in their society, but the 1920s brought a new onslaught of that obsession.”⁶⁷ The signs of technological advancement were almost everywhere. Automobiles and the new highway system visibly symbolized a world which was moving ever faster. Skyscrapers seemed to have sprung up in cities everywhere, surrounded by the suburbs. Industry and electrification were growing at a rapid pace. However, as Marchand writes, “The exhilaration created by the new pace of technological change and economic activity coexisted with deep anxieties about social disorder.”⁶⁸ The 1920s in America, often referred as the Roaring Twenties, has generally been regarded as a decade of prosperity and in many cases for good reasons. It is, however, important to bear in mind that the prosperity of the 1920s was not enjoyed equally by everyone. In most respects and for the most people life continued much in the same way as it had before. Although there were many Americans who did not get to enjoy the fruits of the 1920s prosperity, the awareness that the times were changing permeated the whole society.⁶⁹

The 1920s were followed by the decade of the Great Depression; a time of crisis, and for many, a period of disillusionment with capitalism. In 1930, there were four million

⁶⁴ Marchand 1985, 2; Jordan 1994, 3.

⁶⁵ Nye 1990, 339.

⁶⁶ Corn 1983, 91.

⁶⁷ Marchand 1985, 4.

⁶⁸ Marchand 1985, 4.

⁶⁹ Kyvig 2002, 6–7.

unemployed and in 1932 the number of unemployed had risen to 12 million. Poverty was on the rise and many factories stood idle and deserted. Stores and banks were closed and soup-kitchens opened. The rural areas fared no better. Droughts and dust storms drove thousands of farmers from their homes.⁷⁰ As a result, numerous Americans lost their faith in capitalism, economy, and traditional politics, but it seems that only relatively few lost their faith in technology and its promise. This faith in technological progress was reflected in the short-lived popularity of the technocratic movement during the early 1930s. According to William Akin, at the core of the technocrats' "view of America was the paradox of a society victimized by abundance of technology."⁷¹ They believed that technology "possessed the potential for a material utopia," but it couldn't bring that utopia about "within the traditional economic framework", as evidenced by the Great Depression.⁷² Technocrats had a high regard for engineers and manufacturers as opposed to politicians and the political system. This view was also evident in the 1932 PM article "This Changing World!":

"In all that development the United States, being exceptionally favored as regards supplies of foods and raw materials, will have the opportunity to take the lead, not merely in quantity production but in technical advance. And that, after all, is the only real base of all our modern civilization. We can very easily do without lawyers and politicians; we cannot realize a modern world without artisans and technicians."⁷³

However, despite the continuing faith in progress, the Great Depression was one of the most critical periods in American history. According to historian James McGovern, Americans sustained "the most severe and most persistent economic setback of any major western nation" but they did so with "relative poise and ease."⁷⁴ To paraphrase Franklin D. Roosevelt's famous first inaugural address in 1933, the only thing that the Americans had to fear was fear itself. Although there was an atmosphere of fear, the fears themselves were related to immediate economic problems like the fear of losing one's pension or the ability to pay back one's loans or taxes.⁷⁵ As historian David M. Kennedy has noted, "Nearly three decades of barely punctuated economic growth,

⁷⁰ Baskerville & Willett 1996, 3; Ganz 2008, 1.

⁷¹ Akin 1977, ix-x.

⁷² Akin 1977, x.

⁷³ PM, vol. 57, no. 4, 1932, 507, Eckel, Edwin C., "This Changing World!"

⁷⁴ McGovern 2000, ix.

⁷⁵ Baskerville & Willett 1996, 2-3.

capped by seven years of unprecedented prosperity, gave to the mood in the [...] entire country, an air of masterful confidence in the future.”⁷⁶

This confidence in the future was identified already in the so called Middletown studies conducted by Robert Staughton Lynd and Helen Merrell Lynd. Their two sociological case studies that explored different aspects of life in a typical American town, *Middletown: A Study in Modern American Culture*, published in 1929, and *Middletown in Transition: A Study in Cultural Conflict*, published in 1937, offer an in-depth view to the American culture of the time. The Lynds’ noted that “Middletown’s culture teaches its members to live at the future rather than in the present or past.”⁷⁷ The Lynds’ identified the sources of this outlook as Christian eschatology, “the frontier tradition” of building “tomorrow out of a crude present”, the theory of evolution and “the hypnotizing promise of more and more things tomorrow which its machine technologies and rising standard of living offer.”⁷⁸

According to the Lynds, the concept of the future was separated in two dimensions in Middletown; there was the future of “large symbols, slogans, values, and beliefs, floating high and clear above the daily realities of life” and the future of immediate realities, of their day-to-day concerns, “small plans, hopes, and guesses.”⁷⁹ The Lynds noted that “the distance between the symbolic universe of belief and the pragmatic universe of everyday action” had widened during the Depression⁸⁰. However, the Lynds also noted that the faith in progress and opportunity were mainly a part of the middle and upper class experience; the working class, who had lived precarious lives even before the Depression, could not identify to these lofty ideas as fully as the upper classes.⁸¹

It is interesting to note that this bears a peculiar resemblance to Koselleck’s view that experience and expectation have drifted increasingly apart as modernity has advanced. The symbolic future of progress and the day-to-day future seem to correspond well with collective long term and personal short term experience. Even in the midst of the Great

⁷⁶ Kennedy 1999, 11.

⁷⁷ Lynd & Lynd 1937, 469.

⁷⁸ Lynd & Lynd 1937, 469.

⁷⁹ Lynd & Lynd 1937, 470–471.

⁸⁰ Lynd & Lynd 1937, 471.

⁸¹ Lynd & Lynd 1937, 469–472.

Depression, the collective experience of progress, or technological advancement, to use a more neutral term, touched more or less every member of the society. At the same time, however, the personal experience, especially with the lower classes, can almost seem antithetic to the collective experience. It is important to note that the editorial content of PM or PSM rarely dealt with day-to-day futures and worries.

Jeffrey L. Meikle has claimed that cultural historians have generally seen the Great Depression “as a time when American intellectuals and artists looked to their national past in the midst of traumatic change.” However, Meikle also states that “the common men and women of the Depression, unlike intellectuals, looked to the future for resolution of their problems.”⁸² The view expressed by Meikle in the latter sentence seems to be rather oversimplified, if not entirely incorrect. It is quite clear that it was not only the common men and women that anticipated and dreamt of a better future, it is evident, as this study aims to show, that many of the technologically minded intellectuals also believed in the inevitability or probability of a better future. In fact many of the technological utopians that Segal considers in his book *Technological Utopianism in American Culture* were people who could undoubtedly be called intellectuals, not to say anything about the leaders of the technocratic movement or the authors of the articles examined in this study. According to Segal, it was during the fifty year period between 1883 and 1933 that the technological utopians and Americans in general, became to hold a “belief in the inevitability of progress and in progress precisely as technological progress.”⁸³

Americans attended two major, and a few smaller, world’s fairs during the interwar period; A Century of Progress International Exposition held in Chicago in 1933–1934 and New York World’s Fair in 1939–1940. The fairs received considerable coverage in both PM and PSM during the 1930s. Because of the fairs’ optimistic and celebratory attitude towards the past and future progress, the articles about the fairs often contained various visions and images of the future. The fairs brought the visionary images of the future to life and offered them to the public to experience. The technologically determinist motto of the Chicago Fair was “Science Finds – Industry Applies – Man Conforms”, was brought to life in a form of a sculpture which Pursell describes as “a

⁸² Meikle 2001, 3.

⁸³ Segal 2005, 1.

heroic sculpture in the Hall of Science, showing a robot pushing an apparently reluctant woman and man into the future.”⁸⁴ This was perhaps not an entirely utopian vision, but it illustrates nicely the perceived autonomous and deterministic power of technology. Nonetheless, the general tone of the fairs was indeed decidedly utopian. Folke T. Kihlstedt has argued that the utopianism of the fairs was a response to the Great Depression.⁸⁵ However, on a closer inspection this seems to be untrue. After all, the utopianism of the fairs can and has been seen also as a continuation of the technological utopianism in American culture. The optimistic overtone of the fairs was also due to the fact that the corporations had realized the marketing potential of the future. The 1939–1940 New York World’s Fair presented a utopian vision of the United States which was based on technology and capitalism. According to A. Joan Saab, the “fair planners and exhibitors consciously attempted to reconcile democratic ideology with consumer capitalism to create an idealized vision of the ‘World of Tomorrow’ made possible through products and concepts available then in the world of today.”⁸⁶

According to Kihlstedt, the world’s fairs of the 1930s delivered a message to the American public of the positive effects that technology and science would have on their lives in the future. Visitors at the fairs witnessed “a vision of a future in which democracy, capitalism, and consumerism were affirmed by science and technology.”⁸⁷ Furthermore, Kihlstedt argues that the fairs “equated happiness with the fulfillment of material needs and wants, as had many nineteenth-century utopias. But whereas most nineteenth-century utopias were socialist, based on cooperative production and distribution of goods the twentieth-century fairs suggested that utopia would be attained through corporate capitalism and the individual freedom associated with it.”⁸⁸ Corporations and businessmen who, as a result of the Great Depression, had momentarily lost their hold on the public imagination to politicians, reformers, and technocrats, soon answered by moving the discussion away from the problems of the present towards and idealized technological future.⁸⁹ The corporate exhibitions didn’t simply forecast what they thought would happen in the future; they essentially tried to

⁸⁴ Pursell 2007, 231.

⁸⁵ Kihlstedt 1986, 97.

⁸⁶ Saab 2007, 197.

⁸⁷ Kihlstedt 1986, 97.

⁸⁸ Kihlstedt 1986, 97–98.

⁸⁹ Nye 1990, 351.

push their own vision of what should happen in the future. The same logic also applies to many of the articles written by any corporate representatives that were published in PM and PSM. That the Americans came to identify progress with more and better things suited the corporations more than well.

The World's Fairs gave a physical form to the utopian visions which had previously only existed on paper. Kihlstedt writes that "The transition from the literary presentation of utopian visions to their actualization in visual form was made possible by the physicality of world's fairs as architectural creations, by the attitude toward technology in the United States in the 1930s, and by the activity of industrial designers."⁹⁰ The rise of the industrial designers during the interwar period reflects this belief in the possibility of a man-made utopia. The industrial designers such as Norman Bel Geddes, Walter Dorwin Teague, Henry Dreyfuss and Raymond Loewy had some rather similar ideas as did the technological utopians and the technocrats. They too believed that a realization of a technological utopia was more than just a dream or a possibility, "but a world practically here", as Segal puts it. The utopian world of tomorrow "simply awaited their design."⁹¹ The corporatization of the fairs was also connected with the rise of industrial design profession and the corporations' increased concern with their public image during the Great Depression⁹².

Industrial design played an important part in making the interwar American culture synonymous with modernity and its role in creating a culture that was conscious of its modernity has been discussed by many. The period has been termed even as a "design revolution"⁹³. Christopher Innes has written that the modern visual style of interwar America was "deliberately designed and created by specific individuals" such as Norman Bel Geddes, Hugh Ferriss, Harvey Wiley Corbett, and Le Corbusier all of whom are examined more closely in the following chapters.⁹⁴ Hughes has similarly observed that "The prowess of the independent inventors, the well-publicized achievements of the industrial research laboratories, and the organization and management of large systems of production spread the belief that America could invent

⁹⁰ Kihlstedt 1986, 98.

⁹¹ Segal 1994, 8.

⁹² Marchand 1991; Marchand 1992.

⁹³ Nye 1990, 351.

⁹⁴ Innes 2005, 2.

and produce its future by design.”⁹⁵ Corn writes that “the future became associated with streamlined design as manufacturers hired industrial designers who introduced smooth, teardrop-shaped pencil sharpeners, locomotives, adding machines, desks, automobiles, radios, and many other goods that carried associations of efficient and effortless movement.”⁹⁶ It is safe to say that the impact of industrial design, especially that of the streamlined variety, was widespread and diverse. As Carroll Pursell has playfully stated, “Streamlined design may not have always facilitated the swift passage of pencil sharpeners through the resistant air, but it undoubtedly helped the mind slip with minimum friction from the nineteenth century to the twentieth.”⁹⁷ Segal has argued that the industrial designers had started small, first only designing “individual components of a new world such as streamlined appliances, vehicles, and buildings”, but their visions later evolved into a “comprehensive design of an altogether new and avowedly man-made environment, one which would replace much of the natural environment.”⁹⁸ And indeed, PM and PSM discussed this theme of natural vs. artificial on many occasions during the interwar period⁹⁹.

Innes has stated that the 1930s witnessed a rise of what he has termed the “futures industry”, which was closely related to the aforementioned revolution in industrial design. It would be easy – and wrong – to make the assumption that this fascination with the future was merely an escapist reaction to the mass unemployment and economic collapse of the Great Depression, but as this study aims to demonstrate, there was a clear continuity in visions of the future during the whole interwar period. According to Innes, modernist architecture and streamlined design had an obvious connection to science fiction. Even some contemporary economists agreed that demand could be increased by implementing new styles – most notably streamlining, as it was regarded as a symbol of progress and future – for every imaginable product.¹⁰⁰ According to Corn, the businessmen had “discovered that allusions to the future in

⁹⁵ Hughes 1989, 353.

⁹⁶ Corn 1986, 4.

⁹⁷ Pursell 2007, 249.

⁹⁸ Segal 1994, 8.

⁹⁹ See, for example PSM, vol. 104, no. 5, 1924, 39–40, 133–135, Green, Fitzhugh, “Can Science Save a Crowded World?”; PSM, vol. 111, no. 4, 1927, 35, 178, van Norman, Louis E., “They’re Creating a New World”; PSM, vol. 112, no. 2, 1928, 49, “Chemist-Made Personalities”. There are too many examples to provide a comprehensive listing here.

¹⁰⁰ Innes 2005, 110–111.

advertising, promotion, and product design could boost sagging sales.”¹⁰¹ Many Americans experienced progress in their everyday lives and even those who did not own the latest appliances or flew in the airplanes, nevertheless witnessed progress through advertising. Advertising, McGovern writes, “Created an air of expectations for inevitable progress, even among those who could not afford the goods advertised.” In McGovern’s words, streamlining “beautified and virtually made a cult of modern things.”¹⁰²

The high point in the cultural importance of the industrial designers was perhaps the 1939 New York World’s Fair, which featured exhibitions designed by Geddes, Dreyfuss, Teague and Loewy. The most notable of these exhibitions were Geddes’ exhibition, Futurama, which he had designed for General Motors and Dreyfuss’ Democracy which had been commissioned by the fair itself. As Segal writes, “thousands of fair visitors readily agreed that the world of tomorrow was at hand.”¹⁰³ Kihlstedt also argues that the feasibility of the utopian world that was presented at the fairs was influenced by the engineering spirit espoused by the technocrats of the 1930s. Those who believed in technocracy thought that there was no problem that couldn’t be solved by the engineers with the aid of suitable technology. The goal of the technocrats and their believers was to engineer a perfect society and according to Kihlstedt, these tendencies were clearly present at the New York World’s Fair which was called “an engineer’s utopia” by several writers.¹⁰⁴ Technology is today perhaps even more wondrous than in the utopian world that the fairs predicted, but as Segal states, the social dimensions of that utopian world, which the technological utopians “assumed would be the inevitable by-products of technological progress, have yet not materialized.”¹⁰⁵

In conclusion of this chapter, it appears that technological enthusiasm and utopianism had been prevalent in the American society ever since the late nineteenth century and was epitomized in the world’s fairs of the 1930s. The American public held a

¹⁰¹ Corn 1986, 4.

¹⁰² McGovern 2000, 272.

¹⁰³ Segal 1994, 8.

¹⁰⁴ Kihlstedt 1986, 98.

¹⁰⁵ Segal 1994, 8–9.

widespread belief in the inevitability of technological progress, most likely as a result of rapid technological advancement during the Second Industrial Revolution.

3. THE UNPRECEDENTED ERA

The more a particular time is experienced as a new temporality, as “modernity,” the more the demands made of the future increase. Special attention is therefore devoted to a given present and its condition as a superseded former future. If a particular contemporary becomes aware of an increase in the weight of the future in his range of experience, this is certainly an effect of the technical-industrial transformation of a world that forces upon its inhabitants ever briefer intervals of time in which to gather new experiences and adapt to changes induced at an ever-increasing pace.¹⁰⁶

This chapter will examine visions of the future expressed in PM and PSM in light of Koselleck’s categories of the space of experience and the horizon of expectation, and the experience of modernity. According to Koselleck, modernity is characterized by the increasing difference between experience and expectation; by the belief that the future will be different than the past. Another characteristic of modernity is the accelerating pace of change. This chapter specifically examines those visions of the future that expressed awareness of living in an unprecedented era in human history, thus aiming to further validate the usefulness of Koselleck’s categories in the historical research of past futures. The focus of this chapter is therefore on these expressions of awareness, that is, on the experience of modernity. This chapter relies more on quotation with the intention of retaining the power of the sometimes utopian language of the original text. How did the present differ from the past? What reasons were given for the belief that tomorrow would be better? How would the future be better than the present? This chapter aims to answer these questions.

When the editors of both PM and PSM recalled the founding of their respective magazines, they both contrasted the present with the time in which the magazines were founded. PSM had been founded already in 1872, four years before the invention of the telephone, seven years before the invention of the electric light bulb. Writing in 1930, the editors of PSM made a note of the remarkable changes that had occurred in the half-century since the founding of the magazine:

When [PSM’s] first issue appeared, rural delivery of mail had not begun, permanent bathtubs were just appearing in American homes, high wheel

¹⁰⁶ Koselleck 2004, 3.

bicycles were still in vogue. In 1872, electric lights were unknown, the telephone was yet to be invented, the gasoline engine and the automobile were still in the realm of fancy. In the crowded years during which its pages have been recording the progress of invention and discovery, the typewriter, linotype, dynamo, automobile, airplane, submarine, radio, moving pictures, and skyscrapers have come to alter our civilization.¹⁰⁷

All these inventions had changed the space of experience considerably. It was only natural that the changing space of experience also affected the horizon of expectation. The readers and writers of PM and PSM had lived through these changes; desirable technological change was to be expected also in the future, since nothing in their experience could convince them to think otherwise. The writers often compared the past and present; without fail for the benefit of the present. They were aware of living in an unprecedented era in the human history. One of these expressions of awareness was given in 1932 in PM, by none other than the future prime minister of the United Kingdom, Winston Churchill, whose article, “Fifty Years Hence”, had been originally published in *Strand* magazine in 1931:

The great mass of human beings absorbed in the toils, cares and activities of life, are only dimly conscious of the pace at which mankind has begun to travel. We look back one hundred years and see that great changes have taken place. We look back fifty years and see that the speed is constantly quickening. [...] When we look back beyond one hundred years over the long trails of history, we see immediately why the age we live in differs from all other ages in human annals. Mankind has sometimes traveled forward and sometimes backward, or has stood still for hundreds of years. [...] But now it is moving very fast.¹⁰⁸

Churchill had no doubt in which direction the world was moving now; forward to the future. “The changes have been so sudden and so gigantic, that no period in history can be compared with the last century. The past no longer enables us even dimly to measure the future.”¹⁰⁹ To paraphrase, Churchill was aware that the past experiences were inadequate to reliably predict the future since the world was changing with such a tremendous pace. For all facts and purposes, this is highly reminiscent of the core theoretical framework of this study, Koselleck’s theory of historical times. Although Churchill didn’t think that the future wasn’t measurable anymore, that didn’t stop

¹⁰⁷ PSM, vol. 116, no. 2, 1930, 25, “Announcing a \$10,000 Annual Award”.

¹⁰⁸ PM, vol. 57, no. 3, 1932, 390–391, Churchill, Winston, “Fifty Years Hence”.

¹⁰⁹ PM, vol. 57, no. 3, 1932, 393, Churchill, Winston, “Fifty Years Hence”.

anyone from trying. According to Churchill, “There are two processes which we adopt consciously or unconsciously when we try to prophesy.”¹¹⁰ They are the method of the historian and the method of the scientist. The method of the historian consists of seeking “a period in the past whose conditions resemble as closely as possible those of our day, and presume that the sequel to that period will sequel to that period will, save for some minor alterations, be similar.”¹¹¹ The method of the scientist, however, looks at “the general course of development in our immediate past, and endeavor to prolong it into the near future.”¹¹² As Churchill thought that the period in which he was writing was unprecedented in history, only the method of the scientist, extrapolation from the trends of the immediate past, could shed any light on the future anymore. But what was it that had “produced this new prodigious speed of man?”¹¹³ According to Churchill, the reason was science and technology:

Each invention acted and reacted on other inventions, and with evergrowing rapidity that vast structure of technical achievement was raised which separated the civilization of today from all that the past has known. There is no doubt that this evolution will continue at an increasing rate. We know enough to be sure that the scientific achievements of the next fifty years will be far greater, more rapid, and more surprising, than those we have already experienced.¹¹⁴

Churchill’s article was published only a month before the thirtieth anniversary number of *PM* which was dedicated, to paraphrase the editor of *PM*, Henry Haven Windsor Jr., to recalling the past, speaking of the present and forecasting the future. This particular issue was significant in many ways. The issue featured numerous celebrations of past and future progress by “the leaders of science, industry and government” as Windsor put it. “In their words”, Windsor wrote, “you will find supreme faith and confidence that human destiny will surmount all obstacles and that the future triumphs of civilization will be even greater than those of the past.”¹¹⁵ These attitudes were recapitulated many times throughout the interwar era. The belief in progress, that the next day would be better than the day before, was rampant even throughout the years of

¹¹⁰ *PM*, vol. 57, no. 3, 1932, 393, Churchill, Winston, “Fifty Years Hence”.

¹¹¹ *PM*, vol. 57, no. 3, 1932, 393, Churchill, Winston, “Fifty Years Hence”.

¹¹² *PM*, vol. 57, no. 3, 1932, 393, Churchill, Winston, “Fifty Years Hence”.

¹¹³ *PM*, vol. 57, no. 3, 1932, 391, Churchill, Winston, “Fifty Years Hence”.

¹¹⁴ *PM*, vol. 57, no. 3, 1932, 394–395, Churchill, Winston, “Fifty Years Hence”.

¹¹⁵ *PM*, vol. 57, no. 4, 1932, 482, Windsor, H. H., Jr., “Looking Forward”.

the Great Depression. It seems almost paradoxical that the thirtieth anniversary issue of *PM*, published amidst the worst years of the Depression, featured many of the most optimistic reiterations of this belief. The Great Depression, in the rare times that it was acknowledged, was treated as a temporary restructuring of the economical foundations. This was noted, for example, in the short text written by the president of the Western Electric Company, Edgar S. Bloom, “The March of Progress”:

The dawn of science established a new rate of progress for civilization. The last century was more fruitful of invention and discovery than all the ages that preceded it. And in turn the first 31 years of the present century have resulted in still greater achievement. [...] The accomplishments of science in power, in illumination, in transportation and in communication have found a host of applications in the home, in industry and in every walk of daily life. Seeing how new and better ways have always crowded out the old, we realize that in the future the course of events will lead us forward in the same manner. [...] These triumphs of human ingenuity go on. Often before this, the march of progress has halted. But only temporarily. Always it has set off again to climb to higher goals. While we are adjusting ourselves to present economic difficulties, the foundations are being laid for a new ascent.¹¹⁶

Many of the writers justified their belief in the better future with the successes of the past. Alex Legge, introduced as the president of the International Harvester Company, did just that. “Surely”, he wrote, “we who look back on such a record of progress in three decades cannot be so blind as to believe that science, invention, engineering and manufacturing will stand still during the thirty years that lie just ahead.”¹¹⁷ Keeping with the title of his short piece, “The Past Assures the Future”, he continued as follows: “If we need anything to strengthen our faith in the accomplishments of the future, we can find it by reviewing our accomplishments of the past.”¹¹⁸ Just by examining the 30th anniversary number of *PM* one may find many reiterations of these views: “The last quarter of a century may be regarded as a preparatory period for, in the years to come, discoveries even more amazing will be revealed, and more than that, there will be an exceedingly wide application of these disclosures.”¹¹⁹; “We call this a machine age; actually we are only on the threshold of inventions and discoveries which in the years

¹¹⁶ *PM*, vol. 57, no. 4, 1932, 497–498, Bloom, Edgar S., “The March of Progress”.

¹¹⁷ *PM*, vol. 57, no. 4, 1932, 504, Legge, Alex, “The Past Assures the Future”.

¹¹⁸ *PM*, vol. 57, no. 4, 1932, 504, Legge, Alex, “The Past Assures the Future”.

¹¹⁹ *PM*, vol. 57, no. 4, 1932, 503, Kinney, W. M., “Preparing For The Future”.

ahead will further revolutionize civilization and life.”¹²⁰; “Yet these thirty years, magnificent as they have been in achievement and progress, are but a promise of what the remainder of the century may witness in the ascent of man from the dark depths of the past.”¹²¹; “The next thirty years will witness advances even more amazing than the wonderful accomplishments of the past three decades.”¹²² In short, it seems that the belief was widely held.

One of the most common observations was that the pace of change seemed to be rapidly accelerating. The articles often featured such sentences as “Within the last ten or twenty years mechanical improvements in some industries are comparable with a century of earlier progress”¹²³ or “I believe that the application of science will continue at a rapidly accelerating rate in the future”¹²⁴. These proved to be commonly expressed beliefs throughout the interwar period. Windsor, the editor of PM, wrote in 1933 that “Another source of bewilderment is the tremendous acceleration of the speed of change.”¹²⁵ He continued, “Our world and our times won’t jell long enough to let us study them. They outrun our thinking and planning possibilities. [...] We must learn to think more quickly; we must develop those resources of intellect which experts tell us lie fallow in the human mind.”¹²⁶ What Windsor seemed to be saying was that people must change with the times; a point which was restated many times throughout the interwar era. “Precedent and tradition are among the greatest handicaps to progress”, wrote William B. Stout, an aeronautical engineer in 1932. “Real progress comes from new assumptions; new viewpoints.”¹²⁷ The difference between past, present, and future was often emphasized. It was fairly common to compare and contrast the present with the past to highlight the perceived radical changes that had occurred. A good example of this can be found in a 1924 article written by the novelist and arctic explorer Fitzhugh Green, “Can Science Save a Crowded World?”:

¹²⁰ PM, vol. 57, no. 4, 1932, 516, Babson, Roger W., “In The Van Of Progress”.

¹²¹ PM, vol. 57, no. 4, 1932, 525, DeForest, Lee, “Unlimited Power”.

¹²² PM, vol. 57, no. 4, 1932, 528, Payne, F. H., “Untitled”.

¹²³ PM, vol. 58, no. 2, 1932, 227, Gray, George W., “Machines – Masters or Slaves?”.

¹²⁴ PM, vol. 57, no. 4, 1932, 524, Burpee, Geo W., “Man’s Life Broadened”.

¹²⁵ PM, vol. 59, no. 3, 1933, 382, Windsor, H. H., Jr., “Comment and Review”.

¹²⁶ PM, vol. 59, no. 3, 1933, 382, Windsor, H. H., Jr., “Comment and Review”.

¹²⁷ PM, vol. 58, no. 3, 1932, 441, Stout, William B., “The Motor Car of the Future”.

Think what things were like in 1776, less than 150 years ago. No power, no light, no daily news. No steamships, no movies, no telegraphs. No anesthetic. No electricity. No fuel oil. Why, if a man had dared in public to predict what you and I have seen this day, he straightaway would have been jailed!¹²⁸

Here is, on full display, an expression of awareness of perceived changed time. Whereas many others only compared the technological differences between the past and the present, Green went one step further. He compared the imagined reactions to predictions of radical difference of the people living in the late eighteenth century to those of his contemporaries, and came to the conclusion that no one would have believed such predictions back then. In 1924, however, predictions of a radically different future were printed in magazines and newspapers almost on a daily basis and the people didn't seem to bat an eye at the strange predictions. Of course, Green couldn't know for sure what the reactions of the people living in the late eighteenth century would have been, but that is not the point. Instead, the point is that Green observed an irreconcilable break with the past and present, one of the characteristic features of modernity according to Koselleck.

The acceleration of change was also reflected in the 1934 article, "Industry on the Move". The article also made it clear that this was something unprecedented, something that had never happened before in the history, as far as they were aware of. "Industry is on the move; the pace becomes faster and faster. Never before have so many revolutionary ideas been forthcoming. Tomorrow, we may awaken to find an entire industry changed almost beyond recognition. How little resemblance the latest model automobile bears to the car of a few years ago. How dissimilar the proposed all-steel house of tomorrow will be compared to the present conventional design."¹²⁹ Heber D. Curtis, a noted American astronomer, echoed the approach of Edward Bellamy's highly popular novel *Looking Backward*, in which the protagonist looked back from the year 2000 to the year 1887. "And what of 1962 as it shall look back on 1932? Of one thing only can we be certain – that our present achievements will then seem as crude as those of 1902 now do to us. For 1962 will certainly be ten thousand years ahead of 1932 in

¹²⁸ PSM, vol. 104, no. 5, 1924, 135, Green, Fitzhugh, "Can Science Save a Crowded World?".

¹²⁹ PSM, vol. 125, no. 6, 1934, 118, "Industry on the Move".

scientific progress; no limit whatever can be set to that phase of man's development."¹³⁰ These visions clearly show that many of the authors were acutely aware of the accelerating pace of change. The only way that could have become aware of it is through the experience of change, whether it was experienced directly or mediated through some other sources.

Some of the writers wrote with such vigor, that today their visions might seem undesirable, naïve or even humorous. One of the most optimistic and extreme visions of the future was published in an aforementioned 1924 PSM article "Can Science Save a Crowded World?" Green wrote that in the future "men will live in a super-world" where "the human element will be eliminated from many [...] phases of life."¹³¹ That super-world would include coal-saving super-power, "the super-automobile, costing but a song, that will never need repairing; the super-radio bringing lifelike talking movies into our homes; the super-plane and dirigible, both safe and swift; the super-surgeon, who will rid us of our useless organs at birth; the super-government to deprive us of the morning daily's vivid headlines."¹³² Another original, and utopian, vision of the future was presented in a 1928 article, "The Inventions of the Future". The article cited businessman Roger W. Babson, introduced as "internationally known statistician", on his views on the future: "The next half century will see wonders more amazing than Jules Verne or H. G. Wells ever dreamed of becoming realities."¹³³ He envisioned that in fifty years "our milk and butter will be derived from kerosene instead of cows, while most of our other food will be served to us in concentrated or pill form."¹³⁴ Babson prophesied that power would be so abundant that it would be practically free and that it would be broadcasted wirelessly. The weather would be controlled by meteorologists "by the simple means of pressing a button."¹³⁵ The human lifespan would be lengthened considerably. People would own private helicopters and travel the world in airplanes.¹³⁶ In fact, Babson gives a rather extensive listing of the many recurring tropes of the interwar future.

¹³⁰ PM, vol. 57, no. 4, 1932, 511, Curtis, Heber D., "1902–1932–1962".

¹³¹ PSM, vol. 104, no. 5, 1924, 133, Green, Fitzhugh, "Can Science Save a Crowded World?".

¹³² PSM, vol. 104, no. 5, 1924, 133, Green, Fitzhugh, "Can Science Save a Crowded World?".

¹³³ PM, vol. 49, no. 4, 1928, 536, Brady, John T., "The Inventions of the Future".

¹³⁴ PM, vol. 49, no. 4, 1928, 537, Brady, John T., "The Inventions of the Future".

¹³⁵ PM, vol. 49, no. 4, 1928, 537, Brady, John T., "The Inventions of the Future".

¹³⁶ PM, vol. 49, no. 4, 1928, 536–542, Brady, John T., "The Inventions of the Future".

Some articles presented views that seemed opposed, even hostile, towards the past which was seen as obsolete. They argued that the past should be left in the past and nostalgia should be done away with. Instead, they felt that people should embrace the spirit of the machine age in all aspects of life. One such article was published in PSM in 1935, “This Changing World”, which focused on architecture.

The machine age is tackling a long-neglected job – modernizing the exteriors of homes and buildings. [...] With steel, stone, concrete and glass, architects the world over are designing and building structures to remind people that they are living in the day of streamline trains and air transports. [...] The job of making multiple houses, commercial and public buildings harmonize with the spirit of our time has spread all over the world and promises to leave an indelible mark on civilization. The new architecture is closely allied with the machine age, which has standardized building materials and made possible the mass-production house. [...] Useless ornament, decoration, and adaptations from Greek, Roman and Spanish architectural styles are strictly taboo these days. Architects have decided that a modern man can’t live in an Italian Renaissance house or mid-Victorian flat and feel that he belongs to the twentieth century.¹³⁷

Change had become constant and almost unnoticeable to the contemporary observer. Some writers emphasized that they were in fact living in an age of unsurpassed wonders. Writing in 1934 issue of the PM, Earl C. Hanson took a role of a visitor from another planet to accentuate just how wondrous their world had become:

A thinking creature reaching this earth from another planet would surely ask, “How did you get this way?” What way? Up in skyscrapers, for example. And swimming in the air 300 miles an hour. Traveling over continents in swift caravans. Listening to music 10,000 miles away. Looking at moving images plucked out of space. Eating fresh food out of cans. Lighting cities at the touch of buttons. The modern young man scarcely wonders at these performances. He grew up with them. Nothing on the street suggests that skyscrapers evolved from log cabins.¹³⁸

The modern man had grown up with constant change and that led to the expectation of constant change. The change to which they had become accustomed to was mostly identified as desirable change, that is, as progress. There was a widely held belief that science would keep advancing and that people would keep benefiting from it.

¹³⁷ PM, vol. 64, no. 1, 1935, 26, “This Changing World”.

¹³⁸ PM, vol. 55, no. 4, 1931, 570, “A Museum Comes to Life”. A Museum Comes to Life

One of the ways in which people would benefit from the continuing technological advance was the expected release from drudgery. Automation was almost unanimously regarded as good thing in PM and PSM. Here it is safe to say that the opinions of PM and PSM differed greatly from those of the displaced workers, for example. The writers of PM and PSM, as technological enthusiasts and sympathizers of technocracy, seemed to believe that although the technological unemployment was a bad thing, it was a necessary part of restructuring the economical system to fit the needs of the future. They believed, to paraphrase Segal, that technological progress would be deterministically followed by social progress. They believed that in the future, because scarcity would be more or less eliminated, even the workers who had been displaced by technology would also get to enjoy the benefits of progress later, in the form of more time for leisure. A concrete example of this was provided in Green's aforementioned article:

And yet, for all its seeming complexity, tomorrow will be an infinitely simpler life than that we lead at present. For we shall have learned our awful lesson of slums and filth and nervous wreckage. Such a thing as the human treadmill will be abolished forever. Education will have become the popular pastime, and healthful games, with just enough of workdays now and then to keep the mind alert, will be the monthly diet. So shall Science, eventually, thus save us from ourselves. And Science alone shall bring the universal peace we so pathetically long for now. [...] Improved methods of machinery and more efficient utilization of the world's sources of power will by that time have reduced the working day to but a few hours." Gradually the working day would be replaced by the "working interval"; "a man will work three days a week or 10 days a month and be free to enjoy life the remainder of the time."¹³⁹

Jay Winter has written, also inspired by Koselleck, that the link between past and future can be broken or fractured by "war and other forms of collective violence." When this happens, he argues, the space of experience becomes "radically altered", and with it, the horizon of expectations changes as well. However, as Winter notes, this does not happen every time or to everyone. Some groups and communities are resilient enough to live through these tumultuous times relatively unscathed.¹⁴⁰ Are the Wall Street Crash of 1929 and the resulting Great Depression comparable to war in this sense? Could they too fracture the link between past and future, between experience and

¹³⁹ PSM, vol. 104, no. 5, 1924, 133–135, Green, Fitzhugh, "Can Science Save a Crowded World?".

¹⁴⁰ Winter 2006, 8.

expectation? Based on the contents of PM and PSM, it doesn't seem so; there is no radical change observable in the contents of the magazines before and after the crash. The horizon of expectation remained relatively unaltered. In fact, the belief in progress and in the future showed remarkable resilience even through the darkest years of the Depression. The faith in technology and its power never faltered. This was obviously not true of the whole country. As the Lynds' wrote, the working classes, who had lived precariously even before the Depression, had never shown the kind of faith in the future as the upper classes did in the first place. Then, if we accept Winter's premise and decide that the Great Depression did in fact fracture the link between past and future, the logical conclusion is that the writers of PM and PSM were shielded by their belief in technological progress.

We must remember that PM and PSM were written by and to technological enthusiasts. In other words, the writers and readers of PM and PSM were the kind of people that had the most faith in technology and the future to begin with. Furthermore, a fair share of the revenues of these magazines came from advertising and one of the biggest advertisers was the technological industry. Indeed, many of the articles examined in this study were not written by the editors of PM or PSM but by representatives of big corporations. It is safe to say that this played a part in why the future looked so bright; it sold magazines and products. Marchand has actually called advertisers the heralds of modern technology who "brought good news about progress"¹⁴¹.

If the Great Depression didn't reshape the expectations for the future expressed in PM and PSM, the beginning of the Second World War did. It marked a significant change in the tone and contents of the magazines, as many of the articles now dealt with war and military technology¹⁴². Despite the New York World's Fair of 1939 and 1940, the horizon of expectations had started to change. According to Hughes, technological enthusiasm was also "dampened" as a result of the prolonged depression and the "violence and destruction made possible by modern technology" during the Second World War¹⁴³. To sum up, the Great Depression did not seem to have quite as noticeable destabilizing effect on the sense of historical continuity as has been thought.

¹⁴¹ Marchand 1985, 1.

¹⁴² Zeman 2008, 698.

¹⁴³ Hughes 1989, 11.

The utopian visions of the 1930s did not seem that different from those of the previous decades, except for the particular technologies discussed.

3.1. THE RADICAL OTHERNESS OF THE FUTURE

The accelerating pace of change rendered past experiences more and more inadequate as the basis of reliable expectations for the future. Koselleck writes that “It became a rule that all previous experience might not count against the possible otherness of the future.”¹⁴⁴ And in fact, many of the articles actually brought forth the difficulty in predicting the future in a rapidly changing world. One of the striking things about the many visions of the future proposed in PM and PSM is how different and unfamiliar they seemed compared to time in which they were presented. I will refer to this unfamiliar quality with the term “otherness”. Some of these visions were probably written with a tongue-in-cheek attitude, but it is hard to say which for certain. Sometimes the optimism and downright utopianism seem so alien that it’s hard to take it seriously. Often these articles dealt with matters of which there was no previous experience available, such as the promise of a new technology like nuclear power for example, thus making the formation of specific expectations a much harder job. The less experience there was of a particular thing, the more imagination entered into the expectations of it.

New inventions were often received enthusiastically and the fact of their novelty produced the most imaginative visions of their use. The fact of their novelty often brought forth utopian hopes, as the public didn’t yet fully comprehend the limitations of any such technology. The editors of PSM alluded to this in 1930:

When any revolutionary invention is placed before the public, the first flush of enthusiasm over the idea often produces amazing results. The new device is put to uses for which it isn’t in the slightest degree adapted, uses that anyone with a grain of common sense would see could be handled better by methods and apparatus already well known.¹⁴⁵

In the future, almost anything was possible. This was reflected in a 1929 article, “Can Man Control the Weather?” The author of the article, Calvin Frazer, wrote that “The

¹⁴⁴ Koselleck 2004, 267; Zammito 2004, 127.

¹⁴⁵ PSM, vol. 117, no. 5, 1930, 76, “Editorials”.

achievements of science and invention” had no limits; “The ‘impossibilities’ of one generation become the commonplace accomplished facts of the next.”¹⁴⁶ Some went so far in their expectations that they thought that in the future people would no longer need to eat or sleep. “Sleep will be more a pleasure than a necessity in the future”, writes one article from the 1924¹⁴⁷. In the future, fatigue would instead be taken care of by the use of chemicals; similarly with food. The rationale behind chemical food was evident: “Eventually, the food supply no longer will be a problem of straining every nerve to rush great quantities of inefficient human fuel like meat and bread into the home, for the problem of chemical nutrition will have been solved.”¹⁴⁸ Chemical food was in part inspired by the Malthusian fear of the accelerating rate of the population growth, the fear that there simply wasn’t going to be enough regular, old-fashioned food for everyone. It was also inspired by the machine age ideology that embraced the artificial, the man-made as better than what the nature provided. As there would be no need to sleep or to eat regular food in the future, there would be no need for such things as kitchens or bedrooms. When people wanted to rest they would go to “a secluded corner of the home with talking-movies, opera, and photographic news (up-to-the-minute) to make the lazy hour a pleasant one.”¹⁴⁹ Furthermore, the future would include such fantastic things as, communication with the other planets, weather control, plentiful energy, and crops that would only take one day to grow. “How fanciful it all sounds!” Green wrote, “More like the romantic dream of a mind like H. G. Wells’. Yet how cleanly logical in every single item herein promised for the future!”¹⁵⁰

Logical or not, we’ve yet to enjoy the fruits of these prophecies. Furthermore, according to Nye, as technological advance is not deterministic, revolutionary inventions are in essence unpredictable¹⁵¹. This point is also shared by Koselleck; earlier experiences can’t shed light on revolutionary inventions¹⁵². To be able to predict without precedent, one must fill in the gap between the lack of experience and expectation with imagination. The less experience there is about any particular thing, the more

¹⁴⁶ PM, vol. 52, no. 5, 1929, 822, Frazer, Calvin, “Can Man Control the Weather?”.

¹⁴⁷ PSM, vol. 104, no. 5, 1924, 134, Green, Fitzhugh, “Can Science Save a Crowded World?”.

¹⁴⁸ PSM, vol. 104, no. 5, 1924, 134, Green, Fitzhugh, “Can Science Save a Crowded World?”.

¹⁴⁹ PSM, vol. 104, no. 5, 1924, 134, Green, Fitzhugh, “Can Science Save a Crowded World?”.

¹⁵⁰ PSM, vol. 104, no. 5, 1924, 135, Green, Fitzhugh, “Can Science Save a Crowded World?”.

¹⁵¹ Nye 2006, 33–34.

¹⁵² Koselleck 2002, 113.

expectation requires imagination, leading to some highly imaginative visions of the future. This also illustrates Schinkel's notion about the role of imagination in bridging the categories of experience and expectation.¹⁵³

Robert E. Martin's aptly titled article "An Amazing Vision of the Future" features one of the most radically utopian visions of the future examined in this study, epitomizing the otherness of the future. The article cited the views of Archibald Low, a known British inventor and engineer. He, too, thought that the "present is only the very beginning of an age of discovery – and the next century will mark the greatest advance in the world's history."¹⁵⁴ Radio played a crucial part in Low's vision. It must be clarified that by radio he didn't mean the radio receiver, but rather the wireless transmission of electromagnetic signals. "The typical man of the future," Low thought, "will be called by a radio alarm clock in the morning to take a few moments' radio light treatment or massage. Then he will jump into his synthetic felt one-piece suit. He will wear his hat almost continuously, because everyone will be bald. He will have to watch out lest he put on his wife's clothing by mistake, for men and women will dress most alike."¹⁵⁵ This man of the future, Low thought, would travel mostly by air and spend his weekends in Africa or Australia. The cities would include office buildings which would have "moving stairways, the streets moving sidewalks and the stores moving floors."¹⁵⁶ Television would be used both for transmitting and receiving, making long-distance business conferences and university lectures possible. Wireless transmission of power was one of the staples of the visions of the future and it was also included in this article. However, Low went even further than this in his speculations. "But all this is nothing to what may be accomplished by control of the electronic emanations. 'If matter is the result of defined electric vibration [...] could we not transfer our tables, our chairs and ourselves, in effect, by a knowledge of the forces which produce these oscillations?' Future man may watch a bale of goods being whirled through space from Europe to South America, traveling, so to speak under its own power!"¹⁵⁷ Despite this wonderful vision, however, the "greatest marvel of all" in Low's vision according to Martin was

¹⁵³ Schinkel 2005, 48–50.

¹⁵⁴ PSM, vol. 110, no. 6, 1927, 29, Martin, Robert E., "An Amazing Vision of the Future"

¹⁵⁵ PSM, vol. 110, no. 6, 1927, 29, Martin, Robert E., "An Amazing Vision of the Future"

¹⁵⁶ PSM, vol. 110, no. 6, 1927, 29, Martin, Robert E., "An Amazing Vision of the Future"

¹⁵⁷ PSM, vol. 110, no. 6, 1927, 29, Martin, Robert E., "An Amazing Vision of the Future"

“the transfer of power to the Earth from other planets.”¹⁵⁸ Low saw “nothing fantastic in the idea of interplanetary communication. [...] There is no limit to the adventure of men into the terrific realms of science!”¹⁵⁹

Unsurprisingly, the long-term predictions are usually also the most radical. The reason for this is quite simple; if one assumes a linear trend of extrapolation on the basis of past experience of change, the difference between the time of prediction and the time predicted grows year by year. An example of this kind of long-term prediction is given in the 1936 PSM article which urges the reader to imagine how the world will be in hundred years:

Project your mind a hundred years into the future: imagine yourself in the year 2036. [...] Strange, shallow lakes, filled with chemicals and covered with glass, are turning sunlight into electric power. Underground pipes, radiating from coal centers like the threads of a vast steel cobweb, carry gaseous fuel to smokeless cities. Automobiles scoot along the highways leaving no trail of carbon monoxide fumes. Midget radios, worn like watches in vest pockets, bring in programs and transmit messages. And television flashes world-wide news in natural colors. Such may be the world of the year 2036, if research can solve but a few of the many problems that are now listed as the unfinished business of science.¹⁶⁰

At first glance, this vision seems quite eccentric and fits the definition of the radical otherness rather nicely. However, the vision also contained some rather conservative elements as well. For example, it would appear that the people of 2036 for some reason are still using coal as a fuel, despite the fact that they seem to have mastered the use of solar energy. The article also referred to pocket watches – although in the future they have changed into miniature radios – illustrating the point that the visions of the future take rarely into consideration such things as trends of fashion or societal changes brought on by the changes in the material world. Depictions of cultural change are indeed rare and superficial in most visions of the future. This is perhaps most evident in the case of women and their static roles in the otherwise highly imaginative visions of the future. One of the major pitfalls in predicting the future is that things that are not essential or central to a particular vision are often ignored. Many times in the study of

¹⁵⁸ PSM, vol. 110, no. 6, 1927, 29, Martin, Robert E., “An Amazing Vision of the Future”

¹⁵⁹ PSM, vol. 110, no. 6, 1927, 29, Martin, Robert E., “An Amazing Vision of the Future”.

¹⁶⁰ PSM, vol. 128, no. 3, 1936, 13, Teale, Edwin, “Challenge to Inventors...”.

history, an omission, a lack of a mention, of a thing is as telling as its inclusion. This is particularly obvious in the case of women.

It is worth to note that none of the articles examined in the course of this study were written by women. Taken that into consideration, it is hardly surprising that the gender roles seem particularly static in the visions of the future. No matter how advanced the technology, the housewife was still in charge of the home. To be fair, this did reflect the actual experience of the time, although it probably does not bear much on the reasons for the lack of change in the perceived gender roles of the future. As Winter states, “Envisioning the future is frequently a way of trying to break with the past while unwittingly revealing the hold of the present on the way we think and live.”¹⁶¹ The invisibility of women in the visions of the future certainly tells many things about the writers and readers of the magazine as well as the role of women in the society.

Some of the visions of the future examined in this study embraced the artificial, regarding it as superior to natural. Critics of the increasing artificiality of the environment were rarely represented in PM or PSM, Oswald Spengler and Lewis Mumford, two important contemporary thinkers among them¹⁶². However, there were those who had a different view, magazine editor and chemist such as Edwin E. Slosson. In 1920 Slosson had written an article for a New York based magazine, *The Independent*, which displayed this spirit of the machine age, titled “Back to Nature? Never! Forward to the Machine.” In the article he chastised those who he saw were trying to go backwards in time. He believed that the “cult of naturalism” represented “a reactionary spirit, antagonistic to progress and destructive of civilization. Science and Christianity are at one in abhorring the natural man and calling upon the civilized man to fight and subdue him. The conquest of nature, not the imitation of nature, is the whole duty of man.”¹⁶³ It was the destiny of man to “substitute for the natural world an artificial world, molded nearer to his heart’s desire.”¹⁶⁴ Interestingly, a PSM article, “They’re Creating a New World”, quoted these exact words in 1927 but attributed them to “the great German pathologist,” Robert Koch: “It is not the conquest of nature, not

¹⁶¹ Winter 2006, 7.

¹⁶² Williams 2008, 6.

¹⁶³ Cited in Pursell 2007, 229.

¹⁶⁴ Cited in Pursell 2007, 229.

the imitation of nature, which is the whole duty of man. [...] We must overcome nature, or rather, harness her – improve upon her. That way, only, can we rise.”¹⁶⁵

Some articles envisioned even underground cities. The idea of living permanently underground had become more and more viable as science and technology progressed as food, light, and air must all be produced with the aid of technology. As Rosalind Williams has stated, “Subterranean surroundings, whether real or imaginary, furnish a model of an artificial environment from which nature has been effectively banished. [...] The underworld setting therefore takes to an extreme the displacement of the natural environment by a technological one. It hypothesizes human life in a manufactured world.”¹⁶⁶ One of the reasons behind the fascination with the underground cities was the fear of aerial warfare. In 1927 PM published an article titled “Bomb and Gas-Proof Cities of Future” which shed some light as to why living in underground cities was seen as a possible, sometimes even a preferable future. The article, in fact, stated it very frankly: “Men may have to go back to their cave-dwelling ancestors and live a large part of their lives underground; big cities may have to be decentralized and spread, in low lying buildings, over vast areas, broken up by parks and open spaces, if the threatened horrors of aerial warfare really materialize.”¹⁶⁷ Another vision of the underground city was discussed in a 1934 PSM article “Cave Cities of Tomorrow”, which presented the reader with an artist’s depiction of what an underground city of the future could entail. Outside, or above, the city the chosen mode of transportation was the airplane as the city featured underground hangars with a bombproof entrance on the surface. The city also featured a bombproofed elevator entrance and air intake, making the “underground city impregnable against air raids.”¹⁶⁸ However, the city wasn’t merely portrayed as a glorified bomb-shelter as it also boasted “equable year-round temperatures,” “artificial sunlight,” and a variety of recreational activities and venues including a theater, an athletic arena, a swimming pool, tennis courts and a gym.¹⁶⁹

¹⁶⁵ PSM, vol. 111, no. 4, 1927, 35, van Norman, Louis E., “They’re Creating a New World”.

¹⁶⁶ Williams 2008, 4, 11.

¹⁶⁷ PM, vol. 48, no. 6, 1927, 924, “Bomb and Gas-Proof Cities of Future”.

¹⁶⁸ PSM, vol. 124, no. 6, 1934, 27, “Cave Cities of Tomorrow”. See Appendix 1.

¹⁶⁹ PSM, vol. 124, no. 6, 1934, 27, “Cave Cities of Tomorrow”.

In 1928, PSM featured a short article describing “How Folks Will Live in 1978”. Despite its brevity it is actually one the rarer visions of the future that showed marked cultural change as a result of technological advance. According to the article, the people of the future will live in houses whose rooms would all have a southern exposure and whose walls could be rearranged by a push of a button. The people would eat from disposable cartons thus saving the effort of washing dishes. Furthermore, every family would own a “limousine-airplane”. However, perhaps the most curious change in customs described in the article would be the clothing of the future: “For convenience and better health, people are expected to live customarily in garments not unlike bathing costumes of today, and to bathe more or less constantly under huge electric lamps shedding the health stimulating ultra-violet rays.”¹⁷⁰

Also in 1928 Slosson was cited in PSM further elaborating his beliefs on the superiority of the artificial. “Belief that man-made living beings eventually will be created artificially in the laboratory finds another supporter in Dr. Edwin E. Slosson, nationally known chemist, editor and author, who recently declared the chemist of the future will not only create life, but will find ways of altering personal character by chemical compounds.”¹⁷¹ Slosson, among others, believed that chemistry would play an ever increasing role in the human life. His vision featured the common idea of the chemical food of the future, but also a more recent idea known as “chemurgy”, the farming of chemicals, or the use of farm waste or surpluses, for other purposes than food production such as plastics, fabrics, and paints to name a few. Henry Ford had notably even proposed to build a car entirely out of soybeans.¹⁷² As Slosson was cited to say: “Farms of the future will be devoted to producing chemicals instead of fruits, grains, and vegetable; they will raise the raw products for the chemist’s laboratory to convert into table foods, and yields will be spoken of in term of carbohydrates, acids, and chemical compounds instead of so many bushels of corn, potatoes, or wheat per acre.”¹⁷³

¹⁷⁰ PSM, vol. 113, no. 1, 1928, 60, “How Folks Will Live in 1978”.

¹⁷¹ PSM, vol. 112, no. 2, 1928, 49, “Chemist-Made Personalities”.

¹⁷² Belasco 2006, 176.

¹⁷³ PSM, vol. 115, no. 4, 1929, 47, “Farming for Chemicals”.

The promise of chemistry was in many ways connected to the topic of radioactivity. Marjorie Malley has written about the history of radioactivity in popular culture in her book *Radioactivity: A History of a Mysterious Science*. According to Malley, the mysterious new power of radioactivity seemed to be bursting with untapped potential. She writes that the discovery of radioactivity inspired, among other things, “desires for power and longevity, hope for healing, yearning for transcendence, identification with beauty [and] romance of the mysterious.”¹⁷⁴ These themes were also reflected in the many different names used of radioactivity. Some of these names include wonder ray¹⁷⁵, magic-ray¹⁷⁶, mystery ray¹⁷⁷, and finally, life and death ray¹⁷⁸.

A 1933 PM article, “Power from the Invisible World”, explored these rays in depth. The article then recounted a story about recent discoveries which seemed to suggest that scientists were “on the threshold of tremendous achievements and that man’s coming control of cosmic forces will dim all that science has done in the past century and a half.”¹⁷⁹ The healing powers of radioactivity were highlighted in a following manner:

London recently witnessed a remarkable demonstration of newly ‘sterilized’ rays – the healing and beneficial rays in sunshine from which the lethal energies have been eliminated. [...] The secret lies in the fact that the light was really an extract of the most beneficial part of sunlight. With the lethal octaves of the rays removed, the light, when used by medical experts, has almost immediate curative powers.¹⁸⁰

However, there was also a darker side to these rays. As well as having mysterious healing powers, radiation had also destructive qualities; if there were such things as life rays surely that suggested the existence of death rays as well. It also made an absurd-sounding claim that these death rays had “been used by certain air departments in the European war, when they were employed to stop, suddenly and unaccountably, hostile airplanes in transit across frontiers to bomb cities.”¹⁸¹ However, as the article continued, the whole story of their use in the aforementioned war was yet to be revealed. The

¹⁷⁴ Malley 2011, 208.

¹⁷⁵ PM, vol. 56, no. 5, 1931, 712–714, Wilkins, Harold T., “Wonder Ray Stops Food Decay”.

¹⁷⁶ PM, vol. 60, no. 1, 1933, 58–61, 120A, 124A, “Magic-Ray Farmers”.

¹⁷⁷ PM, vol. 54, no. 4, 1930, 564–567, “Secret of Life Sought in Mystery Ray”.

¹⁷⁸ PM, vol. 59, no. 6, 1933, 890, “Power From the Invisible World”.

¹⁷⁹ PM, vol. 59, no. 6, 1933, 890, “Power From the Invisible World”.

¹⁸⁰ PM, vol. 59, no. 6, 1933, 890, “Power From the Invisible World”.

¹⁸¹ PM, vol. 59, no. 6, 1933, 891, “Power From the Invisible World”.

article also aimed to make it clear that the death rays were not simply war stories. To grant further credibility to its claims, the article recounted a recent story from Berlin where a chemist had allegedly “exploded a small mine by the use of such rays projected from an apparatus located 250 yards distant.”¹⁸² Based on this and other articles of a similar nature, it might be plausible to assume that the less is known about a subject the more imagination goes into it. Because the invention was experienced as wholly new and without a precedent, the expectations for its future were based more on imagination and the general experience of technological advancement.

Perhaps the biggest factor behind the enormous changes that have happened in the world since the late nineteenth century, has been the utilizing of increasing amounts of energy through the use of fossil fuels which led to radically rising levels of production. The future demanded ever more power and energy and PM and PSM published many interesting articles with prophecies and predictions about the energy sources of the future. The holy grail of energy production was considered to be the harnessing of the abundant solar energy. A 1927 article “Age of Wonders Still in Future” discussed the visions of one of the most notable American inventors and engineers and a long-time head of research at General Motors, Charles F. Kettering. “The time will come”, Kettering stated, “when we must use the sun power given us every day. The world will use more and more power, and gradually our natural resources will give out. Not in our lifetime certainly, but, geologically speaking, just a short time ahead. Then we must turn to the sun and to the spots on earth where the sun is most active.”¹⁸³ In other words, Kettering theorized that in the future mankind would have to move to the tropics. He also warned about complacency, believing it to be “the greatest danger in the world.”¹⁸⁴ “When man first learned to fashion knives and hatches of flint, he thought that he lived in a wonderful age,” he pointed out¹⁸⁵. Then the next generations discovered the usage of bronze and “considered themselves wonderful, and so on through the ages. Now we have automobiles, radio, steam engines, airplanes and radium and we go around boasting about our wonderful age. But we are just learning to walk! [...] We must quit

¹⁸² PM, vol. 59, no. 6, 1933, 891–892, “Power From the Invisible World”.

¹⁸³ PM, vol. 48, no. 3, 1927, 353, “Age of Wonders Still in Future”.

¹⁸⁴ PM, vol. 48, no. 3, 1927, 354, “Age of Wonders Still in Future”.

¹⁸⁵ PM, vol. 48, no. 3, 1927, 354, “Age of Wonders Still in Future”.

saying we are living in a wonderful age, for the wonderful age is yet to come.”¹⁸⁶ Here, too, was a clear manifestation of a belief in progress. Solar power was also discussed in a 1932 article titled “Electricity from the Sun”: “Sooner or later we shall have to go directly to the sun for our major supply of power. [...] Here is a promise of enormously more power than mankind shall ever use and from the source of all energy – the sun. Its possibilities are as great as the application of the expansive power of steam to engines, or of wireless.”¹⁸⁷

The idea of nuclear power was also starting to gain some popularity during the late 1930s and early 1940s, although the first commercial nuclear power plants would not be built until the 1950s. The tremendous power of nuclear energy inspired many utopian expectations for the future, although the golden era of the so called atomic age was yet to come. One of these utopian visions was written by Churchill in his aforementioned article, which also discussed nuclear energy as the future source of power. Writing in 1932 he explored the possibilities of nuclear fusion in great depth:

High authorities tell us that new sources of power, vastly more important than any we yet know, will surely be discovered. Nuclear energy is incomparably greater than the molecular energy which we use today. The coal a man can get in a day can easily do five hundred times as much work as the man himself. Nuclear energy is at least one million times more powerful still. If the hydrogen atoms in a pound of water could be prevailed upon to combine together and form helium, it would suffice to drive a 1,000-horsepower engine for a whole year. [...] The discovery and control of such sources of power would cause changes in human affairs incomparably greater than those produced by the steam engine four generations ago. Schemes of cosmic magnitude would become feasible. Geography and climate would obey our orders.¹⁸⁸

A 1941 article, “The Miracle of U-235”, discussed many visions of the nuclear-powered future. The article featured nuclear-powered and passenger-carrying flying wing, a nuclear-powered automobile of a teardrop design and a nuclear-power train engine. Nuclear power, it was envisioned, would not be restricted to the huge power plants that would produce cheap energy for everyone. Instead, people would also own their own

¹⁸⁶ PM, vol. 48, no. 3, 1927, 354–355, “Age of Wonders Still in Future”.

¹⁸⁷ PM, vol. 57, no. 3, 1932, 418, 421, Coblentz, W. W., “Electricity from the Sun”.

¹⁸⁸ PM, vol. 57, no. 3, 1932, 395–396, Churchill, Winston, “Fifty Years Hence”.

small, typewriter-sized power plants.¹⁸⁹ “A power plant the size of a typewriter will be available. Its heart will be a one-pound package of uranium that contains the same amount of power that we extract from 250,000 gallons of gasoline. With such a power pack in a car you could drive 5,000,000 miles without refueling. Obviously, at \$1,000 a pound, U-235 will be cheap.”¹⁹⁰ It is obvious that the dangers of radioactivity hadn’t dawned on the general populace or even to the majority of the scientists just yet. This was further demonstrated in a later passage from the same article:

The readers of *Popular Mechanics* will play an important part in putting U-235 to use. There is no end to the practical applications that amateurs can work out once the energy source is available. For instance, it easily may become practical to melt our highways instead of building them as we do now. With intense heat available a road-building machine would be able to fuse all the dirt in its path into lava, making in one operation a wide rock highway ideal for smooth travel. There will be many advantages to living underground, including the dead quiet.¹⁹¹

3.2. ECHOES OF PESSIMISM

Worry, like hope, is an emotion which is directed towards the future and thus it is also a form of expectation. Pessimistic visions of the future were rarely discussed in the articles examined in the course of this study. As mentioned above, the main reasons for this were probably that the writers and readers of the magazines were both technological enthusiasts and that optimism was thought to sell better. Even when the articles alluded to any such worries about the future, it was usually only as a rhetorical device designed to show that such worries were unfounded. These articles were among the few which discussed the societal impact of technology at length.

One of the worries which was discussed was the issue of technological unemployment. In 1932 *PM* published an article, “Machines – Masters or Slaves?”, written by George W. Gray which started with the kind of rhetorical device described above. “Machines”, Gray began, “are held responsible for unemployment and all the ills which today afflict the world.”¹⁹² However, as the article was quick to point out, the machines had also

¹⁸⁹ *PM*, vol. 75, no. 1, 1941, 1–5, 150A, Langer, R. M., “The Miracle of U-235”.

¹⁹⁰ *PM*, vol. 75, no. 1, 1941, 2, Langer, R. M., “The Miracle of U-235”.

¹⁹¹ *PM*, vol. 75, no. 1, 1941, 150A, Langer, R. M., “The Miracle of U-235”.

¹⁹² *PM*, vol. 58, no. 2, 1932, 226, Gray, George W., “Machines – Masters or Slaves?”.

“called into being millions of people who otherwise would not have been born. For these hundreds of millions they are the sole means of support. Stop the machines, and half the people in the world would perish in a month.”¹⁹³ Technological unemployment was not to be feared and technology not to be blamed. After this first worry was dealt with, the article then cited a question about whether the modern American was considerably happier than the ancient Greeks or Babylonians. Gray wrote that “In those days there was more leisure, less pressure, more opportunity for the exchange of ideas, less emphasis on material things. There is little that a man can get today which he could not have had in Athens.”¹⁹⁴ Again, keeping with the preferred method of such articles, Gray was quick to point out that unlike the United States, Athens was a slave society where only the aristocrats could enjoy such things. The modern Americans didn’t need slaves, because they had machines that had “taken from the overloaded muscles of men and women innumerable burdens and labors, and transferred them to the steel muscles and electric nerves of machinery.”¹⁹⁵ Gray didn’t deny the fact that technology displaced labor, but he was also quick to point out that the advancing technology also created new jobs and disciplines.¹⁹⁶ As was customary for articles of this kind, which raised alarming questions about technology and its advancement, in the end, every pessimistic statement was answered optimistically.

Another article that discussed technological unemployment was published in 1931 in PSM. The article’s headline asked the reader: “Will You Lose Your Job Because of a New Machine?” Again, the question mark at the end of a negative headline is revealing; usually the answer too was given in the negative. Indeed, the article related a story of an automobile factory that before automatization had employed 2000 workers and after automatization only 200. “On the face of it this looks like a final argument against the machine and justifies you in branding it as a man eater. But the fact is not a single man has lost his job in the Smith plant because of the new automated machinery. On the contrary it has given work to many more men.”¹⁹⁷ The point of the article remains clear: the more technology the better. Only grudgingly the article admitted that the United

¹⁹³ PM, vol. 58, no. 2, 1932, 226, Gray, George W., “Machines – Masters or Slaves?”.

¹⁹⁴ PM, vol. 58, no. 2, 1932, 226, Gray, George W., “Machines – Masters or Slaves?”.

¹⁹⁵ PM, vol. 58, no. 2, 1932, 227, Gray, George W., “Machines – Masters or Slaves?”.

¹⁹⁶ PM, vol. 58, no. 2, 1932, 226–231, Gray, George W., “Machines – Masters or Slaves?”.

¹⁹⁷ PSM, vol. 118, no. 3, 1931, 20, “Will You Lose Your Job Because of a New Machine?”.

States suffered from unemployment, even during its most prosperous periods. The reason for this was relatively simple; “we do not know how to adjust ourselves to the machine age.”¹⁹⁸ Although the article otherwise seemed to echo the ideas of technocrats, they differed in one important aspect; the article treated unemployment as a social issue, unlike technocrats who aimed to treat every problem as an engineering problem:

Whatever the cure, it will be not found in doing away with labor-saving devices. [...] No benefit can be derived from halting progress. The present problem, as a famous economist puts it, is the result of ‘mankind’s spiritual development failing to keep pace with the rapidly developing elements of science and technology.’ This means that unemployment is not an engineering problem but one that must be solved by the economist, the sociologist, and the expert in the science of government. It is their duty to devise methods whereby progress may continue unchecked until all have an opportunity to enjoy a safer, fuller and happier life.¹⁹⁹

One of the more critical articles even raised questions about the economical effects of continuing technological progress. The author observed that building ever more durable products would result in a decrease in demand. "In the matter of durability and freedom from troublesome repairs, the car of today is far superior to the car produced years ago. It is hard to predict however, just what the future will produce in the way of durable cars, for, if automobiles are never to wear out, where are the manufacturers to sell the millions of cars they now produce annually?"²⁰⁰ As we now know, the manufacturers later solved this problem with the aid of planned obsolescence.

Some articles expressed a perceived fear that there was nothing worthwhile left to discover or invent. In 1930 PM published an article, “The ‘Brain Wave’ Room”, which discussed inventing. The article cited Sir Alfred Ewing, introduced as the principal of Edinburgh University, who had a few months before the publishing of the article spoken that “We cannot maintain our astounding pace of discovery and invention. Engineers of the future will not be able to accomplish developments comparable to those of the last hundred years.”²⁰¹ As usual, the very next sentence gave a different view on the subject.

¹⁹⁸ PSM, vol. 118, no. 3, 1931, 136, “Will You Lose Your Job Because of a New Machine?”.

¹⁹⁹ PSM, vol. 118, no. 3, 1931, 136, “Will You Lose Your Job Because of a New Machine?”.

²⁰⁰ PSM, vol. 115, no. 5, 1929, 51, Hamilton, E. H., “Next – Sixteen-Cylinder Autos”.

²⁰¹ PM, vol 53, no. 4, 1930, 578, “The ‘Brain Wave’ Room”.

The article confidently assured that “No evidence of a decline in inventive ability, however, is to be found in the “Brain Wave” room in London.”²⁰²

An article from 1932 presents us with a very similar case: “As to the future, we often hear the remark made, ‘The days of the big discoveries are over. What could anybody find in the years to come comparable with the metal aluminum or with the audion?’ My own belief is diametrically opposed to this. [...] Yes, we feel most optimistic as we look into the future. We firmly believe that we are at the very threshold of the greatest era in science and engineering.”²⁰³ And again in 1936: “So amazing has been the progress of the last century – with its radio, its moving pictures, its automobile, its airplane, its advance in every field of experiment – that many people have the vague feeling that science is a worked-out mine, that most of the great inventions and discoveries have been made, that opportunities for discovery will be fewer in the future.”²⁰⁴ What do these articles tell us about the times in which they were written? For one thing, although the writers of these articles didn’t believe that progress was coming to a halt, it is reasonable to assume that some people did. As has been mentioned above, PM and PSM presented a viewpoint of technological enthusiasts and utopians, not of the general populace.

In 1940, PM had once again published an article written by none other than the head of research of General Motors, Charles F. Kettering. It is interesting to note that in his 1927 interview he had warned about complacency, but here, thirteen years later, he seemed more concerned about a perceived lack of belief in progress. “The reason people are prone to regard progress as over and done, is because man loves a show. He wants a celebration, excitement, thrills. Research just isn’t done that way. Every day spells progress. But since we don’t keep a brass band in the laboratory to strike up a fanfare at the close of each day’s work, people think we aren’t getting along.”²⁰⁵ In a later passage he chastised people of being too passive and preoccupied with the past:

The trouble with most of us is that we seek to back into the future, like the famous bird that always flew backwards because it wasn’t interested in

²⁰² PM, vol 53, no. 4, 1930, 578, “The ‘Brain Wave’ Room”.

²⁰³ PM, vol. 57, no. 4, 1932, 522, Fink, Colin G., “Achievements To Come”.

²⁰⁴ PSM, vol. 128, no. 3, 1936, 13–14, Teale, Edwin, “Challenge to Inventors...”.

²⁰⁵ PM, vol. 74, no. 4, 1940, 502, Kettering, C. F., “The Age of Opportunity”.

seeing where it was going, just wanted to see where it had been. You can't go through life on a Futurama. Too many of us just want to sit down and ride along surveying the world that is to come. Well, if many of us do that, the sights we'll see will still be those of the world today.²⁰⁶

Kettering's point was clear; progress didn't come for free nor was it deterministic. If people wanted to realize the utopian promise of the future they would have to work for it. As long as people kept working towards the realization of that wonderful age to come, there was no reason for pessimism about the future.

²⁰⁶ PM, vol. 74, no. 4, 1940, 504, Kettering, C. F., "The Age of Opportunity".

4. THE CITY OF THE FUTURE

This chapter will examine the interwar visions of the city of the future and its evolution as it was imagined in PM and PSM in light of Koselleck's categories of experience and expectation.

The 1920 census had found out that for the first time in the history of the United States, the majority of American's lived in cities or towns with a population of 2 500 or more. American cities were also growing in size; in 12 cities the population was over 600 000, including three cities with a population of over a million. New York City held the highest population of over five million people.²⁰⁷ New York had surpassed London as the world's most populous city in 1925. During the 1920s, the Americans were still adjusting to their new identity as a truly urban nation. As a consequence, Americans became increasingly interested in the city of the future. They encountered images of the utopian cities of the future almost everywhere; in addition to newspaper and magazine articles, images of the future cities were featured in books, movies, galleries, expositions and even in department store exhibitions.²⁰⁸ As architectural historian Gwendolyn Wright has pointed out, many architects tried to take advantage of the public's fascination with the future of the city and sought "to press beyond commissions for individual buildings [by drawing] schemes for the modern cityscapes they hoped to see."²⁰⁹

During this period PM and PSM frequently featured visions of the city of the future which can be sorted roughly into two categories; centrist and decentrist visions. Centrists of the interwar era, for the most part, saw that the city of the future would be a densely built and populated skyscraper city. Decentrists, whose visions were vastly outnumbered by the centrists, envisioned that the city of the future would be more spread out and spacious, generally low-built with the exception of a few high-rising towers. The dense skyscraper cities were especially popular between 1920s and early 1930s. As the 1930s progressed, however, the dense skyscraper visions became

²⁰⁷ Mowry & Brownell 1981, 3.

²⁰⁸ Willis 1986a, 164.

²⁰⁹ Wright 2008, 94.

gradually more spacious under the influence of European modernism and the changing space of experience.

The interest in the city of the future seemed to wane somewhat as the 1930s progressed judging by the decreasing number of articles that were written about the subject. The scope of this study coincides with the later period of what the urban planner, Michael Breheny, has identified as the most important period in the debate about urban form, ranging from 1898 to 1935. The extreme visions of both centrists and decentrists were presented in 1935: Le Corbusier's centrist Radiant City and Frank Lloyd Wright's decentrist Broadacre City.²¹⁰ However, it is interesting that these influential visions did not receive much more than a mention in *PM* or *PSM* during the interwar period. Perhaps the most popular and influential interwar visions of the future city, *Futurama* and *Democracy*, were exhibited just before the second world war at the New York World's Fair in 1939–1940 and received wide coverage in both *PM* and *PSM*.

According to Peter Hall, “the planning of cities merges almost imperceptibly into the problems of the cities, and those in into the economics and sociology and politics of cities, and those in turn into the entire socio-economic-political-cultural life of the time; there is no end, no boundary, to the relationships.”²¹¹ One of the most important problems that the modernist planners aimed to solve was that of congestion. The cities were congested with people, cars and even skyscrapers which were threatening to turn the streets into dark canyons. As a response, one of the observable trends in the image of the interwar city of the future is that it is constantly becoming more spacious, geometric and uniform. The future of the city and the future of transportation are deeply connected to each other and they are often discussed together in many of the articles.

The city of the future had become common imagery in the magazines at the turn of the twentieth century. From 1880s onwards artists had often pictured extremely densely built, even congested, cities filled with skyscrapers. The air above the city was usually teeming with aerial bridges and airships of all forms. In the words of Corn and Horrigan, these cartoonists and illustrators simply “extrapolated from the dizzying pace of skyscraper construction” and the congested streets of New York “to foresee a

²¹⁰ Breheny 1996, 12. I have borrowed the terms centrist and decentrist from Breheny.

²¹¹ Hall 1996, 5.

comically overbuilt city” filled with “airships, aerial tramways, subways and trolleys.”²¹² Willis’ observations concur with Corn and Horrigan: “Most prognosticators around the turn of the century had foreseen a metropolis of giant crowding towers – chaotic, congested, and teeming with technological gadgetry.”²¹³ In the 1910s, the building of ever taller skyscrapers had started to inspire fear that the growth of the city was getting out of control. These fears eventually led to the 1916 New York zoning law which was the first zoning law in the United States.²¹⁴

The zoning laws had unforeseen consequences on the image of the city of the future. Corn and Horrigan have argued that the 1916 New York zoning law had in a way “anticipated the demands for order that came to dominate the urban visions of 1920s.”²¹⁵ However, Willis has argued that the zoning law didn’t only anticipate the more orderly visions of the 1920s, it inspired them. After the zoning law had passed in New York, there were soon zoning laws in almost every major city in the United States. According to Willis, zoning “became the principal tool of city planners.”²¹⁶ Before the zoning laws, architects and planners had had little to no control over the shape of the future city. Understandably, then, many architects welcomed the new zoning laws as a step towards regulating the city’s growth, making it more rational and controllable. Zoning, together with the influence of European modernism gradually started to inspire depictions of the planned and rational city of the future. According to Willis, the architects’ “sense of efficacy and optimism was clearly reflected in the profusion of writings and visionary drawings” of the rational city of the future “that appeared in the 1920s.”²¹⁷ As Willis has eloquently stated: “In assuming that technology could be tamed, the city planned, and the future designed for the benefit of mankind, the visionary architects of the 1920s became the masters of the machine-age metropolis and the creators of America’s first modern conception of the city as utopia.”²¹⁸

The “postzoning mentality”, of the 1920s, as it may be termed, contrasted strikingly with the “pre-zoning mentality” of the years before World War I. A typical postzoning

²¹² Corn & Horrigan 6, 35.

²¹³ Willis 1986a, 164.

²¹⁴ Corn & Horrigan 1984, 41.

²¹⁵ Corn & Horrigan 1984, 41.

²¹⁶ Willis 1986b, 49.

²¹⁷ Willis 1986b, 49.

²¹⁸ Willis 1986a, 184.

conception of the city of the future was a rationally planned high density metropolis with advanced technology. According to Willis, “Optimistic visions of a modern skyscraper metropolis were quickly embraced by the general public and by many in the architectural profession.”²¹⁹ By the mid-1920s the vision of the rationally planned skyscraper city had become to epitomize the urban future. Ultimately the most important change between the pre- and postzoning mentalities was not so much in the new style of buildings, but in the idea of a rational city plan.²²⁰ Corn and Horrigan have also argued in a similar vein, that by the end of the 1920s expectations about the form of the city of the future were extraordinarily unanimous. According to them, the congested and chaotic skyscraper visions from the turn of the century had mixed with the calls for order and reform of the City Beautiful movement and produced a new hybrid; the towering, complex, and rational metropolis of the future.²²¹

According to Carol Willis, the most notable and active American visionary architects and theorists of the 1920s skyscraper city, Harvey Wiley Corbett, Hugh Ferriss, and Raymond Hood among others “believed that change would be evolutionary, not revolutionary.”²²² They believed that as there was no conflict between utopianism and capitalism, with proper planning their visions would eventually materialize within the capitalist system. Willis has termed their philosophy as “passive modernism” in contrast to the “active modernism” of the more revolutionary-minded architects and urban planners such as Le Corbusier who had famously called for either “Architecture or Revolution.”²²³

The pre-1920s views of the future city can be understood as simply extrapolating from the present trends into the future. Willis has compared the early visionaries’ method of projecting the future to the method of H. G. Wells, arguably one the most read and renowned writers of futuristic fiction of the early twentieth century²²⁴. Wells described his method of projecting the future in his 1906 book *The Future in America* as “enlarging the present”. Wells gives the following explanation on his method: “If the

²¹⁹ Willis 1986a, 164–165.

²²⁰ Willis 1986a, 165–166.

²²¹ Corn & Horrigan 1984, 38. See, for example PM, vol. 56, no. 2, 1931, 276, “The Home of the Future”.

²²² Willis 1986a, 183.

²²³ Willis 1986a, 183.

²²⁴ Willis 1986a, 167.

maximum velocity of land travel in 1800 was twelve miles an hour and in 1900 [...] sixty miles an hour, then one concludes that in 2000 A.D. it will be three hundred miles an hour. [...] In that fashion one got out a sort of gigantesque caricature of the existing world, everything swollen to vast proportions and massive beyond measure.”²²⁵ According to Willis, Wells’ method “aptly characterized the method by which most of these pre-1920s prophets arrived at their conceptions.” Their visions “were simply extrapolations of the contemporary city and its problems, not proposals for alternatives.”²²⁶

There is, however, an important distinction to be made between simple extrapolation and utopianism; simple extrapolation leaves the problems of the cities unsolved, whereas utopianism, be it technological or any other kind, would aim to perfect the city. The more organic visions of the early twentieth century may then be understood as springing more from the simple extrapolation of earlier experiences, unlike the post-1920s visions which included the element of planning and were in this sense more utopian in character; they didn’t simply extrapolate or “enlarge the present,” instead they drew the cities anew. The visionaries didn’t simply aim to predict the future, they also critiqued the present, a common trait in almost all utopianism.

4.1. THE CENTRIST VISIONS

Skyscrapers are more than just tall buildings; they are symbols. During the 1920s the skyscraper elicited so much public enthusiasm that Merrill Schleier, the author of *The Skyscraper in American Art, 1890–1931*, has dubbed that enthusiasm as “skyscraper mania.”²²⁷ The skyscraper had by then become a symbol of national pride for the Americans and the skyscraper was widely considered to be the one truly American form of architecture. Most articles published about the city of the future in PM and PSM during the 1920s fall into the category which Willis has termed “the skyscraper utopias.”²²⁸ As Hall noted above, planning and thus visions of the future cities often spring from the perceived problems in the city. The most notable of these problems were the problem of congestion and the fear that the streets were turning into lightless

²²⁵ Wells 1906, 8.

²²⁶ Willis 1986a, 169.

²²⁷ Nye 1994, 100, 108.

²²⁸ Willis 1986a, 165.

canyons as a result of unregulated building of skyscrapers. These problems were certainly reflected in PM and PSM.

In 1924 PM published an article, titled simply “The City of the Future”, discussing the effects of the new zoning laws would have on the architecture of the American future cities. The article featured much-publicized and highly influential illustrations by Ferriss, *The Four Stages*²²⁹, which explored the possible forms and building volumes under the 1916 New York zoning law.²³⁰ These drawing demonstrated the new style of skyscraper design which later came to be known as the setback formula. Willis writes that “Across New York, the setbacks began to transform the urban landscape from an unruly assortment of flat-topped boxes or needle-thin towers into ranges of mountainous masses and jagged cliffs, all with related proportions.”²³¹ In the early 1920s, understanding of the impact of the zoning laws on skyscraper design was still very limited, but by the mid-1920s the setback style had become associated with the future and modernity. Popular magazines and newspapers started publishing increasing amounts of speculative articles about the city of the future and these articles were often illustrated with fantastical visions of the metropolis of the future.²³²

It was this style that came to define the aesthetics of the 1920s centrist skyscraper utopias. As Meikle has written, “Today these skyscrapers seem Gothic with their crenellated towers and their urge to pierce the sky, but to contemporaries they seemed stripped of decoration, almost inhuman in their regularity.”²³³ However, as noted above, Willis has argued that the most radical novelty of the zoning inspired skyscrapers was not their height nor their simplicity of design, but “their placement in a rationalized city plan.”²³⁴ The new ideal of rationally designed modern metropolis was influenced by fascination with technology and the increased optimism among the architects and urban planners that they could control and regulate the growth of the cities. Willis identifies three fundamental factors behind this optimism: “the seminal influence of zoning”; “an

²²⁹ Ferriss 1929, 72–80. See Appendix 2.

²³⁰ PM, vol. 42, no. 2, 1924, 228, “The City of the Future”. Only three of the four stages are shown in the article.

²³¹ Willis 1986b, 48.

²³² Willis 1986b, 52.

²³³ Meikle 2001, 32.

²³⁴ Willis 1986a, 179.

enthusiasm for new materials and technologies; and a fervent faith in progress.”²³⁵ All of these things were regularly witnessed on the pages of PM and PSM during the interwar period.

The stylistic changes that occurred in the typical city of the future during the interwar era were remarkable. This is perhaps best demonstrated by a pair of illustrations by Ferriss. In 1924 Ferriss’ vision of the future city was still undoubtedly historicist; the skyscrapers rose from the ground like modern-day ziggurats topped by classical temples and even amphitheaters²³⁶. In 1941, however, there was nothing left of his earlier historicism, instead, Ferriss had depicted the epitome of modernity combining simple modernist skyscrapers with the decorative style of streamline moderne²³⁷. In other words, whereas most visionary architects of the 1920s still looked to the past for inspiration, by the 1940s they had increasingly turned their gaze towards the new, towards the future, and in doing so, embraced the spirit of modernity.

In 1923 PM published a short illustrated article, “Fairy City of Future Forecast at Exhibit”, which serves as a good starting point for the examination of how the skyscraper city of the future evolved during the interwar era. The article lists almost all of the recurring elements of the 1920s skyscraper utopia; “Overhead thoroughfares supported on great arches between towering skyscrapers, double-decked streets, moving sidewalks bordered by a maze of show windows, stores connected by artistic bridges and covered promenades will serve to crowd the lives of the citizens.”²³⁸ Like so many other articles of its kind, it also laid out the transportation system of the future:

Airships landing at lofty stations will carry the business man and the shopper to the down-town district, where they will be lowered to the streets by speedy elevators. Electrified railroads will enter underground and unload passengers at subterranean depots from whence cars traveling through wide subways will take them to different point of the city.²³⁹

²³⁵ Willis 1986a, 179.

²³⁶ PM, vol. 42, no. 2, 1924, 230–231, “The City of the Future”. See Appendix 3.

²³⁷ PM, vol. 75, no. 3, 1941, 354–355, Kuhler, Otto, “Transportation of Tomorrow”. See Appendix 4.

²³⁸ PM, vol. 40, no. 3, 1923, 437, “Fairy City of Future Forecast at Exhibit”.

²³⁹ PM, vol. 40, no. 3, 1923, 437, “Fairy City of Future Forecast at Exhibit”.

The article also contained an illustration which demonstrated this transportation system.²⁴⁰ The image which still had a pre-zoning feel to it; the skyscrapers pictured are not of the postzoning setback variety and the buildings were very tightly packed allowing very little sunlight to the ground level. Thanks to the new electrical lighting the city would bathe in “a sea of light”, making “the night as bright as day.”²⁴¹ However, the article didn’t tell why it was a good thing. In fact, there seems to be a pattern in making hasty predictions of the usage of new technologies, without thinking them through. It seems that many visionaries simply wanted to imagine how the world would look if the modern technology was utilized to what they believed to be its full extent.

A 1924 PM article made a bold statement: “Cities of the future must be planned for the motor car or there will be bedlam and confusion that will make nearly every metropolis in the country a babel of traffic congestion.”²⁴² Congestion was identified as one of the problems that the cities should solve in the future. Many of the articles examined in this study raised questions about growing population of the cities and the world. As discussed in the previous chapter, one of these articles was the 1924 PSM article “Can Science Save a Crowded World?” which tackled the question of congestion as resulting from the population growth. The article raised the Malthusian question about whether the population of the earth is growing out of control, past its carrying capacity: “The population of the United States has been doubling itself approximately each 30 years during the last century. It was 25,000,000 in 1850, 50,000,000 in 1880, and 100,000,000 in 1910. If this rate of increase continues, it will have grown to 700,000,000 in less than 100 years!”²⁴³

The article was illustrated with Corbett’s vision of a “Triple-deck street corner in the crowded city of the future – a solution of the ever-increasing problem.”²⁴⁴ The image lacks the trademark skyscrapers, but it includes some of the other basic elements of the multi-level city; the arcaded, elevated sidewalks and bridges for pedestrians; cars on

²⁴⁰ PM, vol. 40, no. 3, 1923, 437, “Fairy City of Future Forecast at Exhibit”. See Appendix 5.

²⁴¹ PM, vol. 40, no. 3, 1923, 437, “Fairy City of Future Forecast at Exhibit”.

²⁴² PM, vol. 41, no. 5, 1924, 736, “Cities Planned For Motors Seen As Future Need”.

²⁴³ PSM, vol. 104, no. 5, 1924, 39, Green, Fitzhugh, “Can Science Save a Crowded World?”.

²⁴⁴ PSM, vol. 104, no. 5, 1924, 39, Green, Fitzhugh, “Can Science Save a Crowded World?”. See Appendix 6.

their separate levels. The streets were designed in a way that there wouldn't be any cross traffic by making them go under or over each other at junctions. This solution was later used in many other visions of the future city as well. The article went on to say that "Even today in our large cities, traffic is out of hand. It is evident that we must shift to streets in 'decks' or 'levels,' subways, truckage-ways, motor-vehicle-ways, and on top a way for hordes of pedestrians."²⁴⁵

Indeed, one of the popular methods of solving the problem of congestion was to build the city in multi-leveled streets. Illustrations of the city of the future often featured aerial bridges, especially during the 1920s and the early 1930s. They were, in essence, additional streets in the air: "promenades might be provided far above the din of busy humming thoroughfares. Combined with these ideas in building are suggested plans of elevated sidewalks and sunken streets, that are expected to relieve congestion of traffic in crowded districts."²⁴⁶ In a similar vein, in fact, at the same time when many other architects and urban planners were afraid that the skyscrapers would worsen the congestion in the cities, architect Alfred C. Bossom made claimed the exact opposite; skyscrapers were actually "additional streets, and their occupants travel three or four block up and down in the air instead of traveling three or four blocks in horizontal direction."²⁴⁷

As congestion was seen to be the biggest problem that cities of the future had to solve, many of the visions of the future city were focused on its transportation system. According to Gwendolyn Wright, "All American visions of the future [city] relied on far-reaching transportation infrastructures."²⁴⁸ Elevated sidewalks, aerial bridges, and multi-level transportation schemes were all common imagery in the articles examined in this chapter. Because of the high density and high-rise buildings, many thought that the city of the future would have to be built with highly specialized multi-level transportation system. Pedestrians would use the elevated sidewalks and aerial bridges between the buildings while the whole ground level would be used for vehicle traffic. Some envisioned that most of the traffic would actually be conducted underground,

²⁴⁵ PSM, vol. 104, no. 5, 1924, 40, Green, Fitzhugh, "Can Science Save a Crowded World?"

²⁴⁶ PM, vol. 42, no. 2, 1924, 228, "The City of the Future".

²⁴⁷ PSM, vol. 110, no. 3, 1927, 18–19, Martin, Robert E., "Forty Thousand People Within Four Walls!"

²⁴⁸ Wright 2008, 95.

where there would be different levels for fast traffic, slow traffic, and trains. Intersections would be avoided by building bridges or whole roads on different levels.

Corbett was one of the most prominent proponents of separating different transportation methods on their own levels. He believed that the city of the future would become increasingly crowded and that it was the architects' and planners' duty to plan the cities "with an eye on the problem of handling people and traffic of the future."²⁴⁹ In a 1925 article "The Wonder City You May Live to See" Corbett described that the future city would be divided into at least four levels; one for pedestrians, two for fast and slow motor traffic and one for the electric trains. The article actually contained an interesting article which will be discussed later on.

The city of the future was often multi-leveled. Especially the pre-zoning visions often featured cities that had so many different levels, that you couldn't even see the ground level. Unlike in a typical city where you can normally only move from one building to another on the ground level, in the cities of the future, it seems that people often have the option of using the elevated sidewalks or the aerial bridges. Because in these future cities the people weren't restricted to the ground level, some visionaries proposed that cities should have public elevators so that the people could conveniently move between the different levels. The levels were also often specialized to one mode of transportation, whether it was by foot, car, train, or some aerial vehicle. The planning of the future is by its very nature a highly rational endeavor and the highly specialized traffic systems can be seen as one of its side products. Many visionaries, architects, and urban planners believed that the chosen transportation method of the future was either the airplane or the helicopter and they realized that they needed to plan the cities accordingly; the airplanes and the helicopters required landing strips, helipads, and places to park. The idea of airports on top of skyscrapers reflected the belief that in the near future private airplanes and other aerial vehicles would be common.²⁵⁰ One of the

²⁴⁹ PSM, vol. 107, no. 2, 1925, 41, "The Wonder City You May Live to See".

²⁵⁰ PM, vol. 45, no. 6, 1926, Cover, 892, "Airplane Landings for Cities to Aid Sky Traffic"; PM, vol. 49, no. 1, 1928, 35, "Have Skyscrapers Reached Their Limits?"; PSM, vol. 114, no. 3, 1929, 53, "New Flying Field for Roof Tops"; PM, vol. 52, no. 6, 1929, 970-975, "Sky Harbors of the Future"; PSM, vol. 116, no. 2, 1930, 52, "Airports for the Future"; PM, vol. 56, no. 1, 1931, Cover, 91-92, "A Super-Safe Aircraft"; PM, vol. 57, no. 3, 1932, Cover, 424, "Cradle to Land Wheel-Less Planes on Roofs"; PM, vol. 62, no. 5, 1934, 696-697, "Power to Come by Radio"; PM, vol. 63, no. 3, 1935, 362-365, "Do

examined articles actually features a prediction from the year 1910, already showing landing platforms on top of buildings²⁵¹. Interestingly, one example of the faith in the dirigible as the future's preferred mode of long-distance transport was actually realized in New York in the 1930s; the spire on top of the Empire State Building was originally designed to be a mooring mast for dirigibles²⁵².

The airplane, among other aerial vehicles, played a big role in the visions of the future city. During the first half of the twentieth century many Americans were “airminded”, a contemporary term describing the enthusiasm felt towards aeronautics. Newspapers and magazines often published stories about aviation and the public followed the news intently. Many Americans shared the belief that in the near future every family would have their own airplanes or helicopters. During this period the airplane was regarded as one of the strongest symbols of progress and future.²⁵³ The airmindedness of the Americans was reflected in the number of articles about the city of the future which featured airports on top of skyscrapers. Furthermore, in almost every illustration of the city of the future, there was at least one, usually more, airplane flying dangerously low amidst the tall skyscrapers. Such faith there was in this aerial future that the congestion was not limited to the ground level; some articles predicted that the airspace above the cities would get congested as well. A 1927 PSM article paints a vision of a possible traffic jam scenario: “Our grandchildren and great grandchildren [...] have to fly over the city for miles before they find a single public landing-stage with room left to them to park on.”²⁵⁴ The same article later demonstrated how the expectations of technology had helped to shape the architectural visions of the future: “Airships, in all likelihood, will change the appearance of the city more than any other one thing. The great apartment houses of the future will probably be flat, to accommodate airships.”²⁵⁵

A 1931 article “The Home of the Future” was illustrated with one of Corbett's drawings, depicting New York as it would appear in 1950. The city exemplifies perfectly what Corn and Horrigan called the new hybrid city of the future, mixing

prophecies about inventions come true?”; PSM, vol. 134, no. 6, 1939, 105, “Airport Perches on City-Hall Roof”; PSM, vol. 135, no. 5, 1939, 70–71, “Skyscraper Airport for City of Tomorrow”.

²⁵¹ PM, vol. 63, no. 3, 1935, 362–365, “Do prophecies about inventions come true?”.

²⁵² PM, vol. 55, no. 5, 1931, 812, “Dirigible to Try Mooring to Skyscraper Mast”.

²⁵³ Corn 1983, vii.

²⁵⁴ PSM, vol. 111, no. 4, 1927, 21, Stearns, Myron M., “Babies Born Today May See—“.

²⁵⁵ PSM, vol. 111, no. 4, 1927, 166, Stearns, Myron M., “Babies Born Today May See—“.

modern skyscrapers with influences of the City Beautiful movement. In a typical City Beautiful fashion, the city includes a sizable park with criss-crossing geometrical pathways, all centered around the monumental column in the middle of the park. Although the city itself features rather typical properties of the early 1930s city of the future such as the multi-leveled streets, elevated sidewalks and aerial bridges between the unending lines of towering skyscrapers fading into the horizon, it lacks the airplanes, zeppelins, autogyros and helicopters usually seen in the skies of the future.²⁵⁶ In fact, the article also features a modernistic depiction of the downtown Manhattan and a rendering of the Temple of Music which was being built for the 1933 Chicago World's Fair²⁵⁷; further evidence that the European modernist influence was gradually seeping into the American popular magazine and public consciousness.

None of these centrist visions went further than those visionaries who proposed housing entire cities within huge skyscrapers – or megastructures as they have come to be called²⁵⁸. Megastructures are essentially the epitome of centrist logic; the whole city is centralized and compressed into one building. Robert E. Martin's 1927 article, "Forty Thousand People Within Four Walls!" falls right into this category. The article dealt with the ever increasing scale of the skyscrapers. Martin began the article with uncharacteristically pessimist rhetoric, citing Thomas A. Edison's warning about the disaster that would wait American cities unless they called "a halt to the building of mighty skyscrapers."²⁵⁹ Edison and the other decentrists shared a concern about the possible congestion caused by thousands of people rushing to and from the same place at the same time. However, the centrists and skyscraper enthusiasts had the diametrically opposite view. Bossom, who along Corbett was introduced in the article as one of the "nation's foremost skyscraper architects", claimed that "skyscrapers, far from being the cause of traffic congestion, really offer the most practical form of traffic relief: for the divert traffic from the city streets into the air, from the horizontal to the vertical."²⁶⁰ In fact, Bossom predicted that skyscrapers would grow even taller than they were at the time. He envisioned buildings that would be like small cities in themselves,

²⁵⁶ PM, vol. 56, no. 2, 1931, 276, "The Home of the Future".

²⁵⁷ PM, vol. 56, no. 2, 1931, 276, "The Home of the Future". See Appendices 7 & 8.

²⁵⁸ Willis 1986a, 177.

²⁵⁹ PSM, vol. 110, no. 3, 1927, 18, Martin, Robert E., "Forty Thousand People Within Four Walls!".

²⁶⁰ PSM, vol. 110, no. 3, 1927, 18, Martin, Robert E., "Forty Thousand People Within Four Walls!".

featuring stores, banks, offices, schools, hotels, and apartments, even hospitals. The buildings would even have hanging gardens and trees which grew hundreds of feet above the ground level. Bossom, like a true technological utopian, went so far as to say that because of these megastructures, “Men will be able to live healthier and happier lives. The time now wasted in traveling between home and office will be saved for recreation.”²⁶¹

There was a lot of discussion about whether the height of the skyscrapers had reached their limit during the late 1920s. As it unsurprisingly turned out, almost no article came to the conclusion that they indeed had reached their limit. Some thought that they shouldn't be built, but that didn't mean they thought it physically impossible. One article which discussed the question was aptly titled “Have Skyscrapers Reached Their Limits?”, published in PM in 1928. The article's main focus was on Corbett's thoughts on the shape of the future city. He too predicted megastructures of immense size, big enough to fit a small city inside:

Some of the skyscrapers will be a half mile high and will house small-sized cities. Stores will occupy lower floors. Then will come banks of floors devoted to offices. Atop of this section will be the residential part, floors where those who are employed in the business division of the structure might live. Schoolrooms, churches, theaters and social features will take over the next section of floors. The roof will be used for airplane landings or station stops for air transit to various sections of the country, or for that matter, the world.²⁶²

The article also contained one of the most meticulous illustrations of the future city, drawn by Frank R. Paul but depicting Corbett's vision for a cross-section of a multi-leveled city street of the future and a part of his megastructural skyscraper. Interestingly, the same illustration had been already been used in a PSM article about Corbett's visions in 1925 and in fact by 1928 the vision looked somewhat dated²⁶³. On a side note, the 1925 article actually works as an illuminative example of Schinkel's theory of the role of imagination in bridging Koselleck's categories of experience and expectation. The article states that “Though Mr. Corbett's vision of the future city

²⁶¹ PSM, vol. 110, no. 3, 1927, 129, Martin, Robert E., “Forty Thousand People Within Four Walls!”.

²⁶² PM, vol. 49, no. 1, 1928, 38, Wilcox, Uthai Vincent, “Have Skyscrapers Reached Their Limits?”.

²⁶³ PSM, vol. 107, no. 2, 1925, 41, “The Wonder City You May Live to See”; PM, vol. 49, no. 1, 1928, 35, Wilcox, Uthai Vincent, “Have Skyscrapers Reached Their Limits?”. See Appendix 9.

contains much imagination, it is in no sense fantastic. [...] A picture of the present-day metropolis, with its skyscrapers and subways, would have seemed scarcely more remarkable 50 years ago than his conception of the future city seems today.”²⁶⁴ The writer’s experience, whether it is collective or personal, of the city’s rapid growth and modernization during the previous 50 years, gave credibility for Corbett’s expectation of continuing growth. In fact, Corbett himself made a similar notion in 1927. He explained his reasons for thinking that there would be no definite height limit for skyscrapers by drawing from his own experience. In 1890, Corbett told he had been present at the party held in honor of the completion of the then tallest building of New York, the Pulitzer Building²⁶⁵, where he recalled that “several of the great architects of that day” had agreed that “the building marked the limit of the height that skyscrapers could attain.”²⁶⁶ However, as Corbett pointed out, the Woolworth Building, which had been completed already in 1913, was three times as high as the Pulitzer Building. The limit seemingly just shifted with every coming decade.²⁶⁷

The articles published in PM and PSM during the interwar period featured many visions of the future city that might have differed in the particulars but which nonetheless shared the same themes. One of these recurring types was the city of towers-in-the-park or the city of towers, epitomized in the visions of Le Corbusier. Along with other notable European architects such as Mies van der Rohe and Walter Gropius formed the core of the new International Style or the so called modern movement. These modernists explicitly rejected both historical and contemporary visions of the urban form and eagerly embraced the skyscraper as well as modern transportation technologies. Led by Le Corbusier, the modernists turned their gaze towards the future. As Corn and Horrigan sum up their views: “Nothing of the present city would remain; the brave new world of the future would require a *tabula rasa*.”²⁶⁸ Le Corbusier’s ambitious plan, *City for Three Million*, had in 1922 “created the definitive modern image of the city of the future” which resembled “more a game board than a real landscape” with its “widely spaced, rigorously modern skyscrapers of uniform

²⁶⁴ PSM, vol. 107, no. 2, 1925, 41, “The Wonder City You May Live to See”.

²⁶⁵ The building is also known as the New York World Building.

²⁶⁶ PSM, vol. 111, no. 4, 1927, 22, Stearns, Myron M., “Babies Born Today May See—“.

²⁶⁷ PSM, vol. 111, no. 4, 1927, 22, Stearns, Myron M., “Babies Born Today May See—“.

²⁶⁸ Corn & Horrigan 1984, 39; Kumar 1991, 14–15.

height.”²⁶⁹ The rational uniformity and symmetry of the city contrasted not only with the present really existing cities, but also with the past visions for the city of the future. Characteristics for this type of city are enormous skyscrapers set quite far apart from each other thus creating a lot of open, green space. The city is set on a grid and the roads and the buildings are highly geometrical, symmetrical, and rational. However, as Peter Hall points out, the only way to achieve such geometrical cities was either to demolish parts of old cities or either to build on a completely new site.²⁷⁰ Le Corbusier dismissed the Garden City Movement as a “pre-machine age utopia”²⁷¹, but his vision nonetheless retained some of its characteristics; the garden had evolved into a park and the houses into giant towers.

One of the earliest visions of this variety was expressed by one of the most notable visionary architects of the 1920s America, Raymond Hood. His vision for the city of the future was presented in a short but illustrated article published in PSM in 1927. During the early 1920s, he too had “preferred the denser urban landscape” so common to the visions of that period²⁷². However, in 1927 his and many other architects’ style seemed to be changing to a more spacious one: “Future urban buildings must be taller and thinner and occupy, relatively, less space as compared with streets.”²⁷³ The architectural style, it seemed, was gradually changing. Hood’s vision can be seen as a sort of hybrid of the earlier distinctively American skyscraper utopias and the emerging towers-in-the-park variety, although without the parks themselves. What is certain is that the late 1920s and the early 1930s American visions for the city of the future was becoming more and more spacious.

Among architects and planners, Le Corbusier remains a controversial figure even today. If there was one architect who absolutely epitomized the spirit of the machine age, it was Le Corbusier. His influence on the other visionaries, planners, and architects discussed in this study far outshined the actual coverage of his ideas in PM and PSM. In fact, during the interwar era there was only one article in either PM or PSM that dealt directly with Le Corbusier and his ideals. Published in 1936 in PM, the interview article

²⁶⁹ Corn & Horrigan 1984, 38–39.

²⁷⁰ Hall 1996, 204–205, 208.

²⁷¹ Le Corbusier 1935/1967, 94.

²⁷² Wright 2008, 94.

²⁷³ PSM, vol. 110, no. 6, 1927, 50, “Thinner Buildings, Wider Streets, for Future City”.

took its name and featured many excerpts from his 1935 book *The Radiant City*. To Le Corbusier, an apostle of modernity if there ever was one, there simply was no return to the past. He absolutely condemned historicism in architecture: “The last fifty years of progress [...] have changed the face of the world more than the last six centuries. The time is ripe for construction, not for foolery. We cannot live in the same sort of dwellings our forefathers built.”²⁷⁴ Le Corbusier was a relentless critic of the perceived inefficiency of design and congestion of the big cities of the time: “Great cities and their oppressive congestion have sprung up only in the last fifty years; they have created problems which we were never prepared to handle.”²⁷⁵

Le Corbusier has been regarded as the “classic centrist” or the “arch-centrist”²⁷⁶ and one of the main reasons why he has earned this title was his imaginative solution to the problem of congestion. His solution managed to sound simple and absurd at the same time: “We must decongest the centres of our cities by increasing their density.”²⁷⁷ This density was to be achieved by building huge, tall skyscrapers on a small area. This would, Le Corbusier believed, lead to an increase in the amount of open space in the city.²⁷⁸ He argued that the skyscrapers should be set in a park in a geometric pattern. The buildings should be built on stilts so that automobiles and pedestrians could go under them if they so wished. The whole ground level of the city was to belong to the pedestrians and the city would have no streets; cars and public transportation would have their own, separate levels of traffic.

Le Corbusier, in his never-ending quest for rationality, professed no sympathy for any particular style in architecture; he preferred to believe that he was only planning in the most rational way the he could. In fact, in his earlier book, *Towards A New Architecture*, first published in English in 1927, he wrote that “Architecture has nothing to do with the ‘styles.’ It brings into play the highest faculties by its very abstraction.”²⁷⁹ This view was also reaffirmed in the PM article. According to Le Corbusier, the program that he proposed was “neither European, American nor African”; it was

²⁷⁴ PM, vol. 65, no. 2, 1936, 180, “The Radiant City of the Future”.

²⁷⁵ PM, vol. 65, no. 2, 1936, 180, “The Radiant City of the Future”.

²⁷⁶ Breheny 1996, 12.

²⁷⁷ Hall 1996, 207.

²⁷⁸ Hall 1996, 207.

²⁷⁹ Le Corbusier 1931/1986, 45. The title of the book is sometimes translated as “Toward An Architecture”.

“human and universal.”²⁸⁰ In fact, Robert Fishman writes in his *Urban Utopias in the Twentieth Century* that Le Corbusier, along with a few other utopian-minded architects of the early twentieth century, “hated the cities of their time with an overwhelming passion” and that “the metropolis was the counter-image of their ideal cities, the hell that inspired their heavens.”²⁸¹ According to Fishman, Le Corbusier was convinced that proper planning would not only solve the problems of the cities, but the social problems as well. Le Corbusier was no reformer, as evidenced by his views on historicist architecture. As Fishman points out, “These ideal cities are perhaps the most ambitious and complex statements of the belief that reforming the physical environment can revolutionize the total life of a society. [...] Le Corbusier saw design as an active force, distributing the benefits of the Machine Age to all and directing the community onto the paths of social harmony.”²⁸²

Many contemporary readers and viewers were, and still are, put off by the apparent totality of Le Corbusier’s visions, viewing them as megalomaniacal or dehumanizing. These negative or critical views are rarely present in PSM or PS as the articles usually sided with the propagator of any particular idea. Many of the modernists were well aware of the controversial nature of their designs and plans. They believed that they were only seeking to plan and organize the cities in a way that they would meet the requirements of modern life as they saw them to be. However, as Corn and Horrigan have pointed out, “Like most designs with polemical or rhetorical intent, the results were often transmitted to popular culture as prophetic images.”²⁸³ Although Corn and Horrigan state that “By the end of the 1920s, this Corbusian urbanistic formula had become the universal standard and was inevitably adduced as the final step in the progress of urban form,”²⁸⁴ it wasn’t until later in the thirties that this change could be observed in PSM and PM. The majority of the articles published in the late 1920s or the early 1930s which described the city of the future still had the characteristics of the earlier more chaotic and organic visions.

²⁸⁰ PM, vol. 65, no. 2, 1936, 180, “The Radiant City of the Future”.

²⁸¹ Fishman 1982, 4.

²⁸² Fishman 1982, 4.

²⁸³ Corn & Horrigan 1984, 38.

²⁸⁴ Corn & Horrigan 1984, 39.

One interesting view of the future city was presented in the 1930 PM article, “Prophets and their Prophecies”. The article was illustrated with a photograph of the set for the 1930 science fiction film *Just Imagine*. Although the usage of illustrations generally lends the text more emotional impact, it can be argued that the usage of photographs, especially in the context of the visions of the future, might even have some added gravitas compared to the usual hand drawn illustrations. The set design was a three dimensional model of the future city in the vein of Ferriss’ and Corbett’s visions. The city and its wide highways filled with cars seem to stretch on forever. The scale of the city was immense: the unending line of massive skyscrapers stretched all the way to the horizon eventually disappearing into the mist. Elevated sidewalks and aerial bridges were between the buildings, one of the common themes for the future visions of the era. The city’s transportation network is divided into different levels. The only thing missing from this typical vision of the future city is the lack of aerial vehicles, which might be explained by the fact that they would be hard to realize in a photograph of a model.²⁸⁵ Although some of the 1920s skyscraper utopias still prevailed in this vision in the forms of arcaded sidewalks and gothic-looking bridges, the forms and materials of the skyscrapers are a nod in the European modernist direction.

Another example of a city of this transitional, hybrid variety was given in the two illustrations of the 1932 PM article “Fifty Years Hence” which has already been discussed in length in the previous chapter. The illustrations are somewhat stylized, but they nonetheless present the reader with a distinctive early 1930s vision of the future metropolis and actually the visual style might even accentuate the modernity of the vision. The sky was almost congested with different aerial vehicles and aerial bridges criss-cross between the towering buildings. The roads were teeming with cars and a steady stream of people filled the sidewalks.²⁸⁶ Whereas in the later years of the 1930s the city of the future was usually depicted as rather spacious and generally low-built, with the exception of a few very sizeable skyscrapers, from the early twentieth century until the early 1930s the city of the future was usually quite densely built and seemed almost congested with people, buildings and the most imaginative technological gadgetry.

²⁸⁵ PM, vol. 54, no. 6, 1930, 971, “Prophets and their Prophecies”. See Appendix 10.

²⁸⁶ PM, vol. 57, no. 3, 1932, 390, Churchill, Winston, “Fifty Years Hence”. See Appendix 11.

The headline of the 1935 PM cover story asked, “Do Prophecies About Inventions Come True?” Again, the most interesting things about the article are the illustrations, one of which is seen on the cover of the magazine. The article aimed to answer the question it had posed by exploring the changes which had occurred in the actual city of New York and in the visions of its future. The article began with a picture which depicted a city of the future as imagined during the pre-zoning era in 1910. The city now seems almost outlandish; it was comically overbuilt, its skies were filled with a myriad of aerial vehicles and the towering “sky harbors”, which serve as landing platforms.²⁸⁷ The picture corresponds with Willis’ and Corn and Horrigan’s example of the typical view of the future at the start of the twentieth century²⁸⁸. It still serves as a good demonstration of the change that had occurred in American visions of the future city since 1910 as the article also included a set of three pictures, subtitled “The Evolution of a City”, which consisted of a photo of New York City as it appeared in 1884, a photo of New York City at the time of the publishing and finally, an artist’s vision of the city 25 years to the future.²⁸⁹

A brightly colored version of the same vision of the city of the future appears on the cover of the magazine²⁹⁰. Although the streamlined visual style of the picture has a distinct flavor of the 1930s and the airplanes have changed into what appear to be autogyros and helicopters, the contents of the picture are strikingly similar to the 1910 version of the future city; the huge, towering buildings and the aerial bridges connecting them to each other and the sky teeming with the aerial vehicles and their landing platforms. There were, however, some notable differences in these future visions. The illustrations also depicted a common trend in the changing face of the future city: the vision of the 1910 is all about the air; the ground is covered with the chaotic expanse of buildings with hardly a street visible. In the 1935 vision, this had changed dramatically. With its strictly grid-planned wide streets, highways and railroads, the 1935 city of the future appears much more organized than its 1910 counterpart, perhaps reflecting the postzoning mentality which had granted much more control to the urban planners since the first zoning law in 1916. The ground transportation has a much bigger role in the

²⁸⁷ PM, vol. 63, no. 3, 1935, 362, “Do prophecies about inventions come true?”. See Appendix 12.

²⁸⁸ Corn & Horrigan 1984, 6; 35–36; Willis 1986a, 164.

²⁸⁹ PM, vol. 63, no. 3, 1935, 364–365, “Do prophecies about inventions come true?”. See Appendix 13.

²⁹⁰ PM, vol. 63, no. 3, 1935, Cover. See Appendix 14.

later vision of the future, as the car-filled streets and the monorail line demonstrate, no doubt reflecting the automobile's later success.

Although the automobile had been realized around the turn of the century, it wasn't until 1913 that the advancements in the mass production techniques lowered the prices to such a level that "a car for the masses" was made possible. Even then the automobile enjoyed only limited success as it was still rather primitive and suffered from the abysmal quality of roads.²⁹¹ Of course, the same could be argued about the airplane, as they were even rarer than the motor car at the time. It was after all not the automobile, but the airplane that was the quintessential symbol of the future's promise²⁹². The airplane, as it made flying possible, possessed arguably a much stronger utopian element. The automobile did not incite such utopian dreams as the airplane, at least not until the 1950s speculations about a flying car. The automobile's influence was on the visions of the future was indeed more subtle, but perhaps more far-reaching as the 1930s suburban utopias demonstrate.

Furthermore, looking at the pictures taken of New York in 1884 and in the mid-1930s, it is instantly noticeable just how little these photographs have in common. In only 50 years, New York had changed so much that they are almost unrecognizable as the same city, reflecting the almost exponential pace of technological change during the Second Industrial Revolution. Many people had lived through these changes and witnessed them with their own eyes. Even if you had been only born in New York around 1915, you would have witnessed the coming of the car, radio, the first commercial airlines and the refrigerator, amongst other things. When you keep this drastic pace of change in mind, it's not hard to imagine why the images of the future were often so optimistic, so outlandish and so different than the present; experience of constant change and technological advance had led to expectation of further change and technological advancement. Technology had continued to advance even during the Great Depression and although not everyone could afford to enjoy the fruits of it, they nonetheless were aware of it. As Hughes noted in his review of Segal's *Technological Utopianism in*

²⁹¹ Hall 1996, 274.

²⁹² Corn 1983, xiii.

American Culture, “The Great Depression could be seen by the technological utopians [...] as a glitch in the great machine yet under development.”²⁹³

4.2. THE DECENTRIST VISIONS

The automobile was one of the biggest factors that changed the face of the city in the early twentieth century. The interwar period witnessed a drastic rise in automobile registrations. In 1915 there had been just over two million registered cars in the United States; by 1925 the figure had risen to over 17 million and in 1935 to over 22 million. As a result the downtowns of American cities became remarkably congested as they had not been designed for such a rush of automobiles. As Kenneth Jackson has pointed out, although the car made it easier to move about, that ease was cancelled out because it was impossible to find a place to park. The average speed of travel had fallen to under three miles per hour on Manhattan’s Fifth Avenue in 1926 and Los Angeles witnessed a 24 percent decline in the number of people entering the downtown area between 1923 and 1931 despite increased population in the metropolitan area.²⁹⁴ The gradual replacement of the dense skyscraper city of the 1920s and early 1930s with the decentralized city of the late 1930s reflected, among other things, the experience of suburbanization resulting mainly from the prolific growth in car ownership and the ensuing increased mobility which had spread the cities much wider than before²⁹⁵. The 1920s witnessed what Jackson has termed a suburban boom. The hypothesis of this section is that the experience of suburbanization was the main reason leading to the expectation of further suburbanization, just as the experience of continuous congestion of the downtowns a decade earlier had led to the expectation of further congestion and centralization in the forms of the 1920s skyscraper city.

Many architects and urban planners, such as Le Corbusier and Frank Lloyd Wright, strongly believed in the revolutionary force of the automobile. Unsurprisingly, so did Henry Ford, who believed that the American city with its slums and tenements was doomed and so he made his own proposal for the community of the future.²⁹⁶ Ford was well ahead of the curve of the other decentrist thinkers and PSM published an interview

²⁹³ Hughes 1986, 268.

²⁹⁴ Jackson 1985, 162, 174.

²⁹⁵ Scott 1969, 186.

²⁹⁶ Jackson 1985, 174.

article about Ford's thoughts and his concept for the city of the future as early as 1922. Ford's vision was one of the most original ones that were published on the pages of PM and PSM as it also dealt with the future of the countryside. Ford planned to join the city and the countryside into "semi-rural" or "agricultural-industrial" communities. In fact, Ford himself referred to his conception not as a city, but "for lack of a more descriptive name" as "an agricultural-industrial village."²⁹⁷

Ford had a deep appreciation of the countryside, where he had grown up as a boy, which was also reflected in his decision to move to his own 2,000-acre suburban estate near Detroit²⁹⁸. Nonetheless, Ford also saw that the city life had its advantages. In the PSM article he asked a rhetorical question: "Why are boys and girls and men and women of the cities healthier, better read, more progressive, younger for their age, and as a whole more versatile than persons who have spent their lives on old-fashioned farms?"²⁹⁹ The answer was power, Ford explained. Because the cities had more power, living in a city meant shorter working hours and more time to rest and therefore leaving more time for personal improvement:

"When we make power our slave and utilize it as fully as is possible in the light of present understanding, when we reduce the work of feeding and clothing ourselves to the simple formula that is within our grasp, we will enter upon a new and better plan of life – a plan that will not simply make for happiness and general welfare, but one that will enable us to develop ourselves intellectually and morally to a point more nearly in keeping with what it should be."³⁰⁰

But cities had their drawbacks as well: the centralization of power and industry in the cities couldn't be "expanded indefinitely," and as Ford, like a true capitalist, pointed out, "anything that cannot be expanded indefinitely is wrong."³⁰¹ Ford detested the slums and tenements of the city. He feared that out of control centralization would lead to congestion which would, in turn, lead to an out of control workforce: "If you place working people in an unattractive environment, huddle them together in impossible tenements, crowd and pack them layer upon layer in cramped, stuffy, dingy streets,

²⁹⁷ PSM, vol. 101, no. 1, 1922, 24, Ford, Henry, "How Power Will Set Men Free".

²⁹⁸ Jackson 1985, 175.

²⁹⁹ PSM, vol. 101, no. 1, 1922, 24, Ford, Henry, "How Power Will Set Men Free".

³⁰⁰ PSM, vol. 101, no. 1, 1922, 26, Ford, Henry, "How Power Will Set Men Free".

³⁰¹ PSM, vol. 101, no. 1, 1922, 24, Ford, Henry, "How Power Will Set Men Free".

eventually you will get a kick-back.”³⁰² Ford believed that once the farms were sufficiently modernized, the people would flock back to the countryside. He envisioned that all the necessary farm work in one year could be done in three weeks and the rest of the year the inhabitants of these agricultural-industrial villages would focus on the industry.

As Ford stated, “It is not to be imagined that 11 months of idleness will characterize the life of the coming farmer.”³⁰³ The farmer, who would own his own car, wouldn’t have to live isolated on his farm anymore; instead, he would live in the city and “require continuous employment.”³⁰⁴ As one of the biggest employers in the United States, this would have of course suited Ford more than well. In fact, Ford’s vision could be termed to be an employer’s utopia; rather than granting the farmer those 11 months of idleness, they should work in the factories instead. It is safe to assume that this wasn’t the utopian hope of a small farmer and it certainly puts Ford’s statement that “unemployment, poverty, and wasted lives are as unnecessary as the system that makes them possible”³⁰⁵ in a different light. Ford also expressed an adamant belief in the advancement of mankind – or at the least the white race – and warned about standing in the way of progress: “The man who isn’t ready for it, the business that isn’t prepared to adjust itself to it, had better get ready, for it is coming as surely as greater enlightenment, greater happiness, and a greater race are coming.”³⁰⁶

Frank Lloyd Wright, one of the most notable American architects of the twentieth century, also had a vision for the community of the future which was largely based on the automobile; the Broadacre City. Wright’s vision shared many similar characteristics with Ford’s “semi-rural communities” discussed above. Wright too wanted to combine some of the modern with the best of the old and traditional. The idea for the Broadacre City had emerged already in the late 1920s, but an idea it remained until Wright was asked for a counter-proposal to Le Corbusier’s Radiant City, which had just been published in 1932. Wright’s vision proposed ruralism instead of urbanism. In 1935 he built a model of his utopian vision which was on display at Rockefeller Center. The

³⁰² PSM, vol. 101, no. 1, 1922, 24, Ford, Henry, “How Power Will Set Men Free”.

³⁰³ PSM, vol. 101, no. 1, 1922, 26, Ford, Henry, “How Power Will Set Men Free”.

³⁰⁴ PSM, vol. 101, no. 1, 1922, 26, Ford, Henry, “How Power Will Set Men Free”.

³⁰⁵ PSM, vol. 101, no. 1, 1922, 24, Ford, Henry, “How Power Will Set Men Free”.

³⁰⁶ PSM, vol. 101, no. 1, 1922, 24, Ford, Henry, “How Power Will Set Men Free”.

exhibition proved to be so popular that it later even toured the country. Wright's vision sought to take advantage of modern technologies like mass-production and telecommunications and it hailed the automobile as a symbol of freedom. According to Gwendolyn Wright, it was a "Decentralized but synchronized vision of modernity that still remains potent for many Americans."³⁰⁷ The Broadacre City received surprisingly little interest from *PM* or *PSM* during the interwar period, as this short article marks the only time it was mentioned on their pages.

Frank Lloyd Wright has completed a model of a modern self-contained community which he calls "Broadacre City." It is built along horizontal lines and covers four square miles of countryside. The families in Broadacre City would be served by a through traffic. Streamline monorail trains run down the center of the highway. Small shops and factories, as well as garden plots, are attached to the homes. Electric power is "shipped" in and there are no chimneys to pollute the air. Each family owns its plot of land, which ranges from one acre up, depending upon the size of the family.³⁰⁸

Some of the most influential interwar period visions of the American city of the future were presented at the New York World's Fair in 1939 and 1940. The fair boasted two famous and influential visions of the city of tomorrow: Norman Bel Geddes' Futurama and Henry Dreyfuss' Democracy. Futurama was a huge success, enjoyed by the public as well as the critics. As Roland Marchand states, "Each day of the fair, thousands of visitors waited for hours in lines up to a mile in length for the opportunity to experience Futurama."³⁰⁹ The added publicity of the magazine articles further advanced the cultural impact of the exhibitions, spreading their visions of the future for the readers. It could be argued, as Kihlstedt has done, that Futurama and Democracy gave a more concrete form for the otherwise quite fragmentary visions of the future city that were expressed in America during the interwar period³¹⁰. They were, in a way, the most complete depictions of the 1930s city of the future.

One of the fair's major designers, Walter Dorwin Teague, was also featured in *PM* in the 1939 article "Planning the World of Tomorrow". Teague began the article with a

³⁰⁷ Wright 2008, 122.

³⁰⁸ *PM*, vol. 64, no. 1, 1935, 26, "This Changing World".

³⁰⁹ Marchand 1992, 24.

³¹⁰ Kihlstedt 1986.

proclamation that “a better world than we have ever known can and will be built.”³¹¹ The future that Teague painted out for the reader was an optimistic one; he wrote that “our better world may be expected to make equally available for everybody such rare things as interesting, stimulating work, emancipation from drudgery and a gracious setting for daily life, freedom of movement, free exchange of thought, bodily well-being and mental equanimity.”³¹² However, Teague’s optimism wasn’t completely unrestrained for he also lamented the fact that this future still seemed distant to the majority of people, as even such basic things as modern kitchens and bathrooms had not yet become available to every American.

The article was illustrated with Teague’s visions of the future transportation systems and with photographs of a diorama depicting a metropolis of the future designed for his U.S Steel exhibition³¹³. The metropolis of the future depicted in the article was a rather typical specimen of the late 1930s decentrist visions. The city had a distinctively modern outlook: it was very well-ordered and spacious, its humongous skyscrapers standing far apart from each other, creating a distinctively dramatic skyline. The city’s appearance was almost machine-like, its cross-shaped skyscrapers reminiscent of the designs and ideas of Le Corbusier’s earlier work. The traffic system was multi-leveled and highly specialized depending on the vehicle’s destination and speed. In this model of the city of the future, everything had its purpose. As noted earlier, articles about the future cities published in PM and PSM during the 1930s often paid a substantial amount of attention to the future of transportation, of which this article is also a good example. Teague summed up his vision:

The city will become a place of business, barter, intellectual and artistic exchange, social enjoyment and amusement, rather than a place of residence, in our better world. It will be sparsely built, a collection of tall towers separated by gardens and greensward, crossed by transport systems moving at different levels. The air will be clean, for coal will not be burned within its limits. [...] The country will become urbanized [...] The apartment house, or living tower, will be built in areas where there is a reason for congestion of population [...] Not more than ten per cent of the

³¹¹ PM, vol. 74, no. 6, 1940, 808, Teague, Walter Dorwin, “Planning the World of Tomorrow”.

³¹² PM, vol. 74, no. 6, 1940, 808–809, Teague, Walter Dorwin, “Planning the World of Tomorrow”.

³¹³ PM, vol. 74, no. 6, 1940, 808–809, Teague, Walter Dorwin, “Planning the World of Tomorrow”. See Appendix 15.

ground area will be occupied by buildings. Space between living towers will be used for playgrounds, parks and gardens.³¹⁴

Teague's vision also stressed the importance of the social life and well-being of the people. As the city was primarily a place of business, the people were expected to live in "villages or towns numbering 4,500 to 10,000 individuals", which Teague considered to be "small enough for mutual acquaintance and a coherent social life"³¹⁵. Teague envisioned that the sparsely built city would allow more space for recreational use and that banning the burning of coal within the city would solve the problem of pollution. Congestion and pollution still were perhaps two of the most common problems that the architects and planners battled at the time and it's reflected in their designs. This is a good example of the notion that visions of a better future are often born out of the problems in the present.

Dreyfuss' Democracy was the second most popular exhibit of the fair. According to Nye, "The fair as a whole presented a harmonious community, a world apparently without inequality, in which farm, factory, and city fitted neatly together."³¹⁶ Democracy, as the theme exhibit of the fair was the epitome of all this. Democracy was essentially a 200 foot diorama of the American city of the future. Visitors to the exhibit were presented with a generally low-rise river-front city, which was planned in concentric circles around the towering skyscraper in the center of the city. Much like in Futurama, an extensive highway system connected the city to satellite towns of the countryside.

Dreyfuss' vision was discussed in depth in an interview article published in 1939, "The City of Tomorrow". Democracy was, above all, a peaceful and harmonious place to live. Compared to the earlier visions of congested skyscraper cities of the 1920s and early 1930s, Democracy was serene: "The city of tomorrow is going to stretch and take a deep breath and be a healthier and happier community because of that."³¹⁷ He envisioned that people should live in satellite towns close to where they work and

³¹⁴ PM, vol. 74, no. 6, 1940, 161A, Teague, Walter Dorwin, "Planning the World of Tomorrow".

³¹⁵ PM, vol. 74, no. 6, 1940, 161A, Teague, Walter Dorwin, "Planning the World of Tomorrow".

³¹⁶ Nye 1990, 371.

³¹⁷ PM, vol. 71, no. 3, 1939, 321, Leggett, Julian, "The City of Tomorrow". See Appendix 16.

similarly to Teague's vision, these communities would also have their own schools and movie theaters:

The resident of the satellite town will get up in the morning in a house pleasantly surrounded by green. He can walk to work and his children can walk to school in complete safety because they will never cross a vehicular street. When his wife goes to market, she can walk if she wishes, through a park, and she will shop in a park, since the stores will be situated around pleasant green belts. She might drive, but she never would run the risk of killing anyone because no one will cross the highways.³¹⁸

The transportation system had been designed in a way in which traffic could flow freely and cross streets were eliminated as far as possible. As a result the city would have no need for traffic lights. The ground level of the city was to be reserved for the pedestrians, a feature which bears a striking resemblance to Le Corbusier's designs, especially that of the Radiant City. In fact, the city actually resembled more a big park than the hectic visions of only a decade earlier. The similarities with the Radiant City were also reflected in the circular design of Democracy. The towering skyscraper, around which the city was centered, as Dreyfuss explained, was built mostly for dramatic effect: "There will be only one tall building in the hub. This is a city of low buildings and our only reason for putting in a tall building is a dramatic reason – an architectural accent which points up the city."³¹⁹

The article finished with an ode to planning, summing up the thoughts of many interwar period visionaries and once again reiterating the view of the industrial designers and technocrats; the view that the attainment of the utopia was not merely an impossible dream:

All these things will be possible through planning. To create the 'City of Tomorrow,' which is the theme exhibit at the 1939 New York's World's Fair, has been a tremendous task. It has meant research into the projects of city planners. We have worked with experts in every phase of modern life, and incorporated the best features that each had to offer in this city. The result is a community which if the funds were available, could be built

³¹⁸ PM, vol. 71, no. 3, 1939, 322, Leggett, Julian, "The City of Tomorrow".

³¹⁹ PM, vol. 71, no. 3, 1939, 150A, Leggett, Julian, "The City of Tomorrow".

tomorrow. This is no visionary city of the future; it is a practical suggestion of how we should be living today.³²⁰

In some aspects Dreyfuss' vision differed greatly from the visions that had been propagated at the Chicago World's Fair only a few years before. Whereas Dreyfuss wrote and spoke about constructing low buildings to allow more sunlight into the city, the designers at the Chicago Fair had lauded the benefits of all things artificial, symbolizing man's control over nature. As Dreyfuss had said, Democracy wouldn't have "many tall buildings, and thus no man-made canyons where people will be forced to work by electric lights. [...] We will not have windowless buildings [...] the purpose of the window is to let in light."³²¹ This stood in stark and decided contrast to the visions of artificially lighted windowless buildings that had been presented in Chicago³²². The visions of the Chicago Fair are explored more deeply in the next section.

Norman Bel Geddes' Futurama exhibit, the most popular exhibit of the whole fair, was commissioned by the General Motors, went beyond just predicting the future; it aimed to make it a reality. It would appear that they actually succeeded in this task fairly well. Among the more accurate claims were that the population of the major cities would double by 1960 and the amount of traffic would triple. Also, the decentrist idea of building skyscrapers that covered entire city blocks and the separation of the housing from the commercial and industrial districts more or less came true in the following decades. However, as Christopher Innes has pointed out, while this might have seemed utopian from the perspective of the 1930s, the actual "social results have been less than desirable, to say the least."³²³ Futurama proved to be one of the most accurate predictions made of the future in the interwar era, predating the national highway system by decades.

The automobile played a central role in Futurama's vision of the future, which was hardly surprising given that its sponsor was General Motors. The exhibit displayed and promoted vast networks of multilane superhighways, teeming with the teardrop shaped

³²⁰ PM, vol. 71, no. 3, 1939, 153A, Leggett, Julian, "The City of Tomorrow".

³²¹ PM, vol. 71, no. 3, 1939, 150A, Leggett, Julian, "The City of Tomorrow".

³²² PM, vol. 58, no. 2, 1932, 179, Burnham, D. H., "Skyscrapers of the Future"; PM, vol. 58, no. 3, 1932, 353, Farrier, C. W., "The Home, Sweet Home of Tomorrow".

³²³ Innes 2005, 148.

cars of the future. The city centers still showed signs of the typical imagery of the 1920s multi-level traffic systems, but they were more spacious than their earlier counterparts. The decentralist leanings of Futurama were also evident in that it included vast areas of the countryside as well, although mainly as a background for the proposed highway system. Nonetheless, the inclusion of the countryside showed that it too would have a future to expect for.

Considering the popularity of Futurama, it expectedly also got more exposure in *PM* and *PSM*. Futurama was featured in three *PM* articles between July of 1939 and August of 1940. The first of these articles focused mostly on the technical aspects of the exhibition itself and it doesn't tell the reader much about the content of the exhibition itself. However, the article is illustrated with two photographs of the exhibition's diorama. The diorama depicts the future metropolis from a distance, with its tall buildings being amongst the city's most characteristic landmarks along with a huge circular airport.³²⁴ One of the more curious things about the article is that the airport still featured a base for dirigibles. The dirigible – or the zeppelin as it is and was more commonly known – was a popular concept in the visions of the future of aviation during the early twentieth century, but it is a common assumption that after the Hindenburg disaster in 1937 the airship had lost a lot of its appeal, but it certainly belonged to Bel Geddes' vision of the America in the year 1960.

In the August of 1940 *PM* delved a little deeper into Futurama's images of the future. The article takes the reader to visit the world of Futurama in the year 1960: "It is 4:15 o'clock on the afternoon of a pleasant June day in 1960. You [...] in your modest home on the outskirts of Washington D.C., are planning to drive over for a day with Aunt Lillian in San Francisco."³²⁵ The article dealt mostly with the future of traffic systems and transportation, which had a prominent role in the exhibition which was commissioned by the General Motors. The article was illustrated with photographs of the diorama.³²⁶ The photograph on the first page of the article showed a rather typical late 1930s American metropolis of the future: the city was spacious and its enormous skyscrapers were streamlined and the traffic system was multi-leveled and in extremely

³²⁴ *PM*, vol.72, no. 1, 1939, 32, "Tomorrow's America Modeled in 'Futurama'".

³²⁵ *PM*, vol.74, no. 2, 1940, 188, "Super-Speed Roads of Tomorrow".

³²⁶ *PM*, vol.74, no. 2, 1940, 188, "Super-Speed Roads of Tomorrow". See Appendix 17.

heavy use. Some of the cars themselves were of a radical, futuristic, and streamlined teardrop design. The city was undoubtedly modernist; there was not a single building that looked familiar or traditional. The implication being that the city was either built from scratch following the rational guidelines of modernist architecture or the old city had been completely demolished and a new city had been built on top of its ruins. However, there was one thing missing from this otherwise so typical image of the future – the multitude of aerial vehicles in the sky. However, it would be hasty to assume that this reflected Americans’ waning interest in the airplanes. Instead, the missing airplanes might be explained by the fact that they would have been quite hard to realize in a diorama. Furthermore, as Morshed among others has pointed out, the visitors themselves assumed the role of the airplanes, looking down at the exhibit as it would appear to a low-flying airplane.³²⁷

Photographs were quite rarely used as illustration in the articles that discuss the future for understandable reasons; it is very difficult to photograph the future and much easier to draw it. However, the photographs taken of the Futurama exhibit really brought the utopian future into life for those who couldn’t physically visit the exhibit themselves, perhaps better than any other type of illustration. Bel Geddes’ model of the utopian America of the 1960 had been produced in immense detail and scale; it was one acre in size and it contained approximately 50,000 automobiles, of which 10,000 were made to move along the fourteen-lane multispeed interstate highway, over 500,000 buildings that were individually designed and a 1,000,000 trees.³²⁸ Photographs captured the realism of the model much in the same way that the visitors of the exhibit had witnessed them in person. The psychological impact of using photography was in that it, much like the whole fair itself, further cemented the implication of the reality and attainability of the utopia.

4.3. THE BUILDING MATERIALS OF THE FUTURE

Many of the articles which were examined in the scope of this study contained discussions of the building materials of the future. Architects and other visionaries of the interwar era were fascinated by the promise of new materials as they emphasized the

³²⁷ Morshed 2004, 74.

³²⁸ Morshed 2004, 74.

modernity of their designs and visions. New and unfamiliar materials were often given rather utopian qualities in the press. Glass and different metals such as aluminum and steel were among the most common materials of the future, but some proposed to use even plastics³²⁹.

Advances in the architectural glass inspired many visionaries during the interwar period as demonstrated by visions of skyscrapers and entire cities made of glass that were seen on the pages of PM and PSM. Hugh Ferriss discussed the new possibilities in glass construction in his 1929 book, *The Metropolis of Tomorrow*:

The new types of glass, which modern ingenuity is already manufacturing, make it quite certain that before long this material will be utilized not simply as windows but as walls. [...] While the thought of a glass building seems to some to be extreme, the material has, in fact, solid advantages. There is an obvious gain in natural light and (with those forms of glass which admit the ultra-violet ray) an increase in the modified rays of the sun. (A possible cooperation appears to be implied between architects and physicians.)³³⁰

Ferriss' visions for skyscraper cities of glass and steel were discussed in a short illustrated article published in PM in 1926, although for some reason the article didn't actually name him and referred to him only as "an eastern architect."³³¹ As noted in the quotation above, as well as emphasizing the modernity of their design, the glass skyscraper would also have actual health benefits: "The problem of light in city areas is now more acute than ever, that its healthful qualities are generally accepted, so that architects not only realize the importance of buildings that will afford natural light, but see in glass tremendous possibilities for artistic and utilitarian effects not yet approached."³³²

As mentioned earlier, architects and planners viewed the lack of light as the one the biggest problems of the contemporary city, which was also one of the main reasons behind the zoning laws. This was reflected in the interest shown in different lighting schemes throughout the interwar era. One of the most interesting consequences of this fascination with proper lighting was the many proposals of constructing with "special

³²⁹ PM, vol. 73, no. 5, 1940, 658, Leggett, Julian P, "The Era of Plastics".

³³⁰ Ferriss 1929, 100.

³³¹ PM, vol. 45, no. 6, 1926, 953, "Glass Skyscraper on Horizon Architect Declares". See Appendix 18.

³³² PM, vol. 45, no. 6, 1926, 952, "Glass Skyscraper on Horizon Architect Declares".

glass” which permitted ultraviolet radiation, which was viewed as highly beneficial at the time, to pass through. It proved to be a staple in articles dealing with building materials of the future. One example of this was in a 1928 article “Glass House to Save Your Eyes”, which predicted a house built out of the aforementioned special glass which let ultraviolet radiation inside, which was thought at the time to have almost utopian health benefits. The article actually gives a very good demonstration of the spirit of technological utopianism, which as noted in the introduction is understood as bringing about utopia or utopian consequences, as a direct result of technological change. Rather than just say that the new technology was an improvement over the old, the article went on to say that as a result of the widespread implementation of the new technology, “future generations may become a stronger race of human beings, more efficient workers, endowed with greater resistance against disease, and will live much longer than the normal man of the present age.”³³³ All of these remarkable feats were to be achieved by simply using a new type of glass in homes and factories.

In 1930 PM featured an article discussing Frank Lloyd Wright’s vision of making skyscrapers of this special glass. The entire exterior of these skyscrapers was to be built with glass, making the most of this new material’s benefits. As the author of the article, Robert E. Martin, stated, these buildings “will have no windows, and they won’t miss them. Their walls from the ground floor to the top will be of clear plate glass.”³³⁴ Albert Frey’s Aluminaire House was featured in a 1931 article which asked “Will the suburbanite of the future sit in his living room behind walls of aluminum, while sunbeams stream in through ultra-violet-transmitting glass?”³³⁵ The article also contained an illustration of the modernistic design of the house along with a description of its unusual structure. During the night time the house was to be lighted with neon tubes, which were widely regarded as the lighting choice of the future during the early 1930s³³⁶. In fact, this short article featured many of the common material choices in futuristic housing; new type of glass, thin aluminum walls, and neon lighting. Some houses even featured furniture fashioned out of metal.

³³³ PM, vol. 50, no. 6, 1928, 933, “Glass House to Save Your Eyes”.

³³⁴ PSM, vol. 116, no. 6, 39, Martin, Robert E, “Glass Walls Now Used in Building”. See also PM, vol. 53, no. 1, 1930, 79, “Glass Skyscrapers Planned”.

³³⁵ PSM, vol. 119, no. 3, 1931, 58, “Plans Homes of Aluminum and Glass”.

³³⁶ PSM, vol. 119, no. 3, 1931, 58, “Plans Homes of Aluminum and Glass”.

In 1936, when the visions of glass construction had passed their peak, PM published two articles written by H. W. Magee which served as a swan song to the utopian promise of glass as a building material. Magee invited the reader to “visualize a city of shining glass” which contained such things as glass pavements, colorful glass skyscrapers, glass elevators, offices “with glass floors, walls and ceiling,” glass furniture and clothes made of fiberglass.³³⁷ The uses of glass seemed almost endless. However, as the 1930s progressed glass construction was starting to lose the allure of its novelty and this was reflected in the rising popularity of plastic and other unspecified synthetic materials and methods. Whereas most visions of the 1920s and early 1930s had regarded natural light as a good thing, this seemed to change around the time of the Chicago World’s Fair in 1933 and 1934. Many visionaries discarded natural light and the need for windows altogether, preferring artificial lighting instead, but even they, it seems, agreed about the health benefits of ultraviolet radiation. It is interesting to note that so many of these articles regarded ultra-violet or health rays as essentially a good thing. The fascination with different types of radiation was quite common during the early twentieth century, as was already discussed in chapter three.

The synthetic materials reached the height of their popularity in PM and PSM around the time of the Chicago World’s Fair. This was, of course, no coincidence as the designers of the Fair were themselves among the main propagators of the advances of these new and synthetic materials. Furthermore, the environment itself was and had been becoming ever more artificial as a result of continuing electrification among other things. According to David E. Nye, this vision of the controlled environment had become popular by the 1930s. Many believed that science could provide “better heat, air, and light than nature.”³³⁸ One of the most influential proponents of this vision was Matthew Luckiesh, a pioneering lighting researcher for General Electric. Luckiesh had in his 1930 book *Artificial Sunlight* expressed his belief in that “science could improve upon sunlight, which was inconstant and at times too strong for the skin.”³³⁹ Artificial sunlight, Luckiesh argued, would be better than natural light because it would be under total control. In a workplace it would lead to more efficiency, at home to all around

³³⁷ PM, vol. 66, no. 3, 1936, 330, Magee, H. W., “New Tasks for Glass Part II”.

³³⁸ Nye 1990, 365.

³³⁹ Nye 1990, 364.

better life. The similarities between the article and Luckiesh's views don't stop there; Luckiesh's desire for controlled environment had also led him to argue for windowless buildings. According to Luckiesh, windows were mostly just wasted space; they handicapped architecture and led to heat loss. By the time of Chicago's Century of Progress exhibition in 1933, Luckiesh's views had become widely known and accepted in the corporate circles and many of the pavilions at the exhibition were windowless.³⁴⁰

One example of a windowless home of tomorrow was published in 1933 in PSM and it painted an interesting picture of the neon lighting schemes of tomorrow's homes:

Imitation windows set into the walls of homes of the future, and lit by concealed glow lamps, will fill a room with soft, artificial daylight. The synthetic sunshine will contain invisible ultra-violet or health rays. This is no flight of fancy; synthetic daylight today lights the interior of an ultra-modern windowless factory at Fitchburg, Mass., where it has proved thoroughly practical. In a home, an imitation window with a painted landscape may replace an unsightly outlook, and give healthful sunshine twenty-four hours a day if desired.³⁴¹

These themes were particularly present in the August and September issues of PM in 1932, when both the director of works D. H. Burnham and the assistant director C. W. Farrier, of the Chicago Fair published their separate articles on these matters. PM was actually based in Chicago at the time and it followed the progress of the fair closely. It doesn't seem likely that it was just a coincidence that Burnham and Farrier published their visions of the future in PM only six months before the official opening of the fair. The Chicago Fair featured an exhibit called The Homes of Tomorrow Exhibition which was decidedly anti-traditionalist in its architectural philosophy and Burnham's and Farrier's articles reflected this. The exhibition buildings represented progress and therefore they were designed to be radically modern in their outlook. To achieve this look of radical modernity, the designers of the fair experimented with different styles and materials which had never before been used in building construction.³⁴² It could be argued that this conscious striving for modernity, which these two articles so well exemplify, reflected, albeit on a deeper level, the accelerating pace of technological advancement. Unlike so many others before them, Burnham and Farrier were not

³⁴⁰ Nye 1990, 364–365.

³⁴¹ PSM, vol. 122, no. 4, 1933, 41, Armagnac, Alden P., "Glow Lamps for Home Lighting".

³⁴² Innes 2005, 104–105. Ganz 2008, 69.

interested in monumental buildings which would last for centuries or millennia. Instead, they both envisioned that the designs they were espousing would remain in use for only a few decades at the most, after which they would be either stylistically obsolete or too badly deteriorated. As Farrier wrote in his article, “This ultra-modern home will be designed to last only as long as its appointments are likely to endure without becoming hopelessly out of date and obsolete. It will be built with the idea of salvaging its parts and replacing or rejuvenating it in fifteen or twenty years.”³⁴³

Burnham explained that the reason for building such short-lived buildings was a result of pure economic necessity. They would be stripped of all unnecessary ornament and decoration and built from new materials such as asbestos cement. The materials for the buildings would mainly be “pre-fabricated in shops, cut into standard shapes and sizes.”³⁴⁴ The Synthetic Skyscraper, as it was called, would be almost windowless and its interiors illuminated by neon lights. Artificial lighting, as Burnham stated, gives “better illumination than nature can offer” as it is not dependent of the weather and the same goes for artificial ventilation as well³⁴⁵. For the present-day reader, there is something striking about Burnham’s belief that the occupants of these windowless buildings with their asbestos lined walls would live “in more healthful and comfortable surroundings than are possible in the most luxurious office buildings” of the day³⁴⁶. Burnham also recognized that not everyone would embrace this vision of the future immediately, because as he put it, the “human nature is opposed to change.”³⁴⁷

The vision put forth in the article is in many ways opposed to the visions of the 1920s massive and sculptural skyscrapers. In fact, Burnham went so far as to state, that the new skyscrapers would be so cheap to construct that it would lead to such low rents “that many commercial structures built prior to 1930 are today competitively obsolete.”³⁴⁸ The article comes across as a sort of an ode to artificiality and the ever accelerating pace of progress. Burnham wrote that “Science, mechanization and factory methods are entering the building industry. There has been more advance in the past

³⁴³ PM, vol. 58, no. 3, 1932, 354, Farrier, C. W., “The Home, Sweet Home of Tomorrow”.

³⁴⁴ PM, vol. 58, no. 2, 1932, 178, Burnham, D. H., “Skyscrapers of the Future”.

³⁴⁵ PM, vol. 58, no. 2, 1932, 179, Burnham, D. H., “Skyscrapers of the Future”.

³⁴⁶ PM, vol. 58, no. 2, 1932, 120A, Burnham, D. H., “Skyscrapers of the Future”.

³⁴⁷ PM, vol. 58, no. 2, 1932, 177, Burnham, D. H., “Skyscrapers of the Future”.

³⁴⁸ PM, vol. 58, no. 2, 1932, 118A, Burnham, D. H., “Skyscrapers of the Future”.

eighteen months through the use of new materials and new methods than in any previous hundred years in the history of the world.”³⁴⁹ First of all, Burnham claimed that in the near future skyscrapers could be built in only 180 days and they would be replaced in only twenty years. These skyscrapers of the future, he goes on to explain, would be “built to last just so long as their elevators, plumbing and other mechanical fixtures may be expected to remain serviceable, and no longer.”³⁵⁰ After the building had outlived its expiration date, it would be demolished and its materials would be salvaged for future use.

However, it must be noted that Burnham’s vision was exceptional in that it admitted that the materials he propagated would only last for a few decades. Most other articles about the building materials of the future rather promoted the durability of the materials. One example of this was found in a short article published in 1937 about the advantages of plastic construction: “Houses of the future will be built of plastic and synthetic materials that should outlast materials used today, industrial chemists predict.”³⁵¹ A 1940 article, “The Era of Plastics”, also painted a picture of a plastic-filled future, bearing much resemblance to earlier visions of glass: “Clothed in plastics from head to foot, the American of tomorrow will live in a plastics house, drive a plastics auto and fly in a plastics airplane.”³⁵²

In conclusion, all of these articles about the different building materials of the future can be seen as rather typical examples of forecasting the possibilities of new and workable innovations. As Nye has pointed out, “Once a workable device exists, however, venture capitalists, engineers, and consultants busy themselves with forecasting its possibilities.”³⁵³ In fact, it could be argued that a large part of this fascination with the artificial might have resulted of the need to propagate and find use for these new advances in technology.

³⁴⁹ PM, vol. 58, no. 2, 1932, 118A, Burnham, D. H., “Skyscrapers of the Future”.

³⁵⁰ PM, vol. 58, no. 2, 1932, 177, Burnham, D. H., “Skyscrapers of the Future”.

³⁵¹ PM, vol. 68, no. 2, 1937, 200, “Homes Built of Plastics Promise Lower Costs”.

³⁵² PM, vol. 73, no. 5, 1940, 658, Leggett, Julian P., “The Era of Plastics”.

³⁵³ Nye 2006, 34. See Table 1.

5. THE HOME OF THE FUTURE

According to Timothy Mennel, during the 1920s the American dream house was still very much directed towards the romantic past rather than the future. However, by the 1940s a notable change had occurred in the image of the American dream house; it had “come to incorporate technological wonder.”³⁵⁴ Guided by Koselleck’s categories of experience and expectation, this chapter aims to shed some light on how this change came into being.

Predictions about the home of the future were commonly featured in magazines, world’s fairs, and department store exhibitions throughout the interwar period. There was a stark contrast between the contemporary reality and the idealized visions of the home of the future, partly caused by the implementation of the new visual styles and aesthetics of the machine age. As mentioned earlier, these allusions to the future in the forms of new visual styles were often aimed to stimulate consumption. According to Horrigan, the visionaries of the home of tomorrow consisted of architects, engineers, and businessmen who all “espoused the idea of the house as a technologically perfected artifact.”³⁵⁵ Some of these visionaries were merely trying to predict the future, whereas others used the visions of a better future to stress and demonstrate the possibilities of new building materials or as a way of criticizing the present.³⁵⁶

Horrigan has categorized the homes of the future into three ideal types: the version of the architects, who “would transform the house into a paradigm of modern elegance”; the version of the engineers or industrialists, who “would clone thousands of cheap dwellings from a single prototype”; the version of the “purveyors of consumer goods and gadgets.”³⁵⁷ As is common for such typifications, these types were not mutually exclusive and did not follow each other chronologically; sometimes they were mixed together and also incorporated other elements of the American culture during the interwar period.³⁵⁸

³⁵⁴ Mennel 2005, 340.

³⁵⁵ Horrigan 1986, 137.

³⁵⁶ Horrigan 1986, 137.

³⁵⁷ Horrigan 1986, 138.

³⁵⁸ Horrigan 1986, 138.

To properly understand the fascination with technology in the visions of the homes of the future, they must be considered them in their proper context. It should come as no surprise that the technological aspects of the homes of the future were emphasized on the pages of PM and PSM because of the very nature of the magazines. Furthermore, Horrigan has observed three main factors which led to the popularity of the visions. First, although housing construction was booming during the 1920s, the demand still greatly exceeded the supply and the coming of the Great Depression further deepened this disparity.³⁵⁹ During the New Deal, there were attempts by the government to address the housing problem but they soon proved inadequate³⁶⁰. Wright writes that due to pressure from realtors and reformers to clear the slums, they demolished “at least one existing unit for every new one.”³⁶¹ The rising standard of living together with the growing economy of the 1920s had also created ever higher demand for durable consumer goods. As Horrigan states “At the head of the list of suddenly indispensable symbols of middle-class status – automobiles, radios, home appliances – was the most durable and elusive good of all, the single-family home.”³⁶²

Second, as has been already mentioned, the interwar period was also marked by the rise of industrial design and modernism. The modernists abhorred tradition and according to Horrigan, “identified their aim as a renunciation of past forms and solutions, and emphatically insisted that design reflect contemporary reality.”³⁶³ Rationality, above all, was held in the highest regard and the modernists, championed by such thinkers as Le Corbusier, weren’t satisfied with piecemeal changes or nominal revolutions. They demanded nothing less than “a total reconsideration of the form and function of the dwelling.”³⁶⁴ Their revolutionary views were epitomized by Le Corbusier’s infamous announcement that “The house is a machine for living in.”³⁶⁵ The radical visions of the modernists were thought to be just what they professed to be, the way of the future³⁶⁶.

³⁵⁹ Horrigan 1986, 138.

³⁶⁰ Wright 2008, 131.

³⁶¹ Wright 2008, 132.

³⁶² Horrigan 1986, 138.

³⁶³ Horrigan 1986, 138.

³⁶⁴ Horrigan 1986, 138.

³⁶⁵ Le Corbusier 1931/1986, 4.

³⁶⁶ Horrigan 1986, 139.

Third and final, the interest in the homes of the future was also strengthened by the advent of the so called machine age and the success of mass production which both enticed engineers and architects alike. After the success of automobiles, many Americans believed that mass-produced housing was the next logical step; affordable houses could now be industrially prefabricated on assembly lines by the thousands.³⁶⁷ Those architects and urban planners who revered rationality and control above all, again most notably Le Corbusier, saw mass-produced housing as an immense possibility of filling whole cities and towns with properly planned and standardized housing. In fact, Le Corbusier dedicated a whole chapter to mass-produced housing in his influential book, *Towards a New Architecture*. He summed up his views on the matter in his unmistakably dramatic custom in the following words:

We must create the mass-production spirit. The spirit of constructing mass-production houses. The spirit of living in mass-production houses. The spirit of conceiving mass-production houses. If we eliminate from our hearts and minds all dead concepts in regard to the house, and look at the question from a critical and objective point of view, we shall arrive at the 'House-Machine,' the mass-production house, healthy (and morally so too) and beautiful in the same way that the working tools and instruments which accompany our existence are beautiful.³⁶⁸

This attitude was shared also by many American architects. Horrigan cites an architecture critic Theodore Morrison who was apparently inspired by Buckminster Fuller's influential and futuristic design of the Dymaxion House. Morrison wrote in 1929 that "Until our houses can be made in the factory, by machine, we shall have no true economy of housing comparable with the economy prevailing throughout industry generally. Until they can be installed, not built, we cannot expect them to be truly efficient and rational adaptations of means to an end."³⁶⁹ The Dymaxion House wasn't a big commercial success, but it nonetheless continued to pique the interest of readers at least until the early 1940s³⁷⁰ and paved the way for other unusual designs such as A.

³⁶⁷ Horrigan 1986, 139.

³⁶⁸ Le Corbusier 1931/1986, 6–7.

³⁶⁹ Horrigan 1986, 138–139.

³⁷⁰ PM, vol. 76, no. 2, 1941, 27, "Prefabricated Steel-Wall House Has Canvas Partitions".

Lawrence Kocher and Albert Frey's Aluminaire House³⁷¹ and George Fred Keck's House of Tomorrow³⁷².

Horrigan states that by 1930, Americans were faced by two rivaling images of the home of tomorrow; "the luxurious 'machine for living' of the modern movement" and "the cheap, identical, machine-made house of Fuller and other proponents of mass production."³⁷³ However, it seems that Horrigan presents here a false dichotomy as the two types weren't always seen as mutually exclusive. As evidenced by the earlier quotation from Le Corbusier, at least some of the modernists thought that the luxurious "House-Machine" and affordable mass-production were in fact dependent on each other. Nonetheless, Horrigan's types represent two aspects that generally appealed to different markets; affordability and luxuriousness. There was a big demand for both of these aspects in the United States during the Great Depression; those who had money to spare wanted the luxury of modern appliances and automation and those who were short on money, nonetheless needed a home.³⁷⁴

Fuller's Dymaxion designs were featured in a 1929 article "Plans to Move Homes by Airship" by John E. Lodge. The article painted a scene in an American city fifty years hence: "A family is leaving on a vacation. Over the house hovers a huge dirigible. Cables are lowered and made fast and away sails the airship, the dwelling dangling below with its occupants undisturbed! At the seashore, the house is lowered and anchored to a twelve foot square concrete foundation. On the return to the city the process is reversed."³⁷⁵ The structure of this revolutionary building was to be made out of futuristic materials such as translucent casein glass and aluminum. Fuller imagined that the house would have been mass-produced and sold at the reasonable price of \$3000 and as the article demonstrated, he also emphasized the mobility of the design. He also claimed that the design could be expanded on to produce even apartment houses and tall office buildings, featuring even such amenities as a swimming pool.³⁷⁶

³⁷¹ PSM, vol. 119, no. 3, 1931, 58, "Plans Homes of Aluminum and Glass".

³⁷² Smiley 2001, 43.

³⁷³ Horrigan 1986, 145.

³⁷⁴ Horrigan 1986, 145.

³⁷⁵ PSM, vol. 115, no. 3, 1929, 47, Lodge, John E., "Plans to Home Move Homes by Airship".

³⁷⁶ PSM, vol. 115, no. 3, 1929, 47, Lodge, John E., "Plans to Home Move Homes by Airship". See Appendix 19.

As noted above, there was a considerable demand for affordable housing in the United States during the interwar period. Many believed that the best way to meet this demand was to follow the example of the automobile industry. After all, it was only after the success of Ford's affordable Model T that car ownership became possible for the American masses. Visionary architects and businessmen then decided to implement the assembly line production and interchangeable parts of the automobile industry to the housing industry. This development was further encouraged by the onset of the Great Depression which served as an incentive for prefabrication, which, as Wright writes, had by then become "a catchword for an array of processes and products."³⁷⁷ The car metaphor was also employed by the writers of *PM* as well, as was seen in a 1932 article which predicted that buying a home would soon be remarkably similar to that of purchasing a car:

When newlyweds a few years hence start out to buy a home, they probably will find the task as simple as purchasing a car today. After picking a location, they may go to a dealer and inspect the current models, selecting the one that suits their fancy and fits their purse. The following week, they will find the house completed and ready to occupy.³⁷⁸

This wasn't the only time that the car metaphor was used. In 1935 it was the writers of *PSM* that made the connection: "The trend in American home architecture is toward the pre-fabricated house. This, a special product of the machine age, is now on the market and may be purchased in convenient payments by the home owner, just as he would buy an automobile."³⁷⁹ Comparing buying a house to that of buying a car had at least one function, it highlighted the affordability and simplicity of purchasing prefabricated houses.

According to Horrigan, there was considerable buzz about prefabrication during and after the Chicago World's Fair. This was reflected at the unveiling of Motohome, a new prefabrication design by American Homes, Inc., where none other than the president's mother, Sara Delano Roosevelt, cut "the ribbon on a house wrapped in cellophane, that newest and most futuristic of materials."³⁸⁰ Motohome was also featured in a 1935 *PM*

³⁷⁷ Wright 2008, 129.

³⁷⁸ *PM*, vol. 58, no. 3, 1932, 353, Farrier, C. W., "The Home, Sweet Home of Tomorrow".

³⁷⁹ *PSM*, vol. 64, no. 1, 1935, 28, "This Changing World".

³⁸⁰ Horrigan 1986, 150.

article “The House that Runs Itself” and the article didn’t fail to mention the cover of cellophane, in fact it was even written with a capital letter. “With a mechanical ‘heart’ that runs everything necessary for comfortable living, the ‘packaged home’ no longer is a dream.”³⁸¹ With prices ranging “from \$3,800 for a five-room bungalow to \$9,900 for a two-story house”, it was clear that these houses weren’t marketed to the poorest of the poor, although the article made a claim that the possibility of adding extra rooms was a feature that would adapt “the ‘motorized home’ to the average American family.”³⁸² The Motohome wasn’t marketed merely as a simple prefabricated home, but rather as an essentially modern one, equipped with all the imaginable luxuries.

As affordability was perhaps the main reason to build a prefabricated house it is rather interesting that so many visions tried to combine the elements of the luxurious electrical homes of tomorrow with the mass-produced prefabricated designs. PM and PSM, of course, also featured some of the more inexpensive designs, such as a \$500 dollar home that was made out of plywood which reminded more a trailer than a real house³⁸³. As already suggested in the previous chapter, the manufacturers of prefabricated houses often experimented with unorthodox building materials and construction methods in order to save money and time. Prefabricated housing inspired research on new and different materials and according to Gwendolyn Wright, “By 1935, 33 private companies had generated unique systems based on stressed-skin plywood, modular steel frames or steel frames with asbestos-cement panels.”³⁸⁴ Other designs proposed to replace nails by gluing the whole house together, as a 1937 article reported that extensive laboratory tests had shown “that glued houses are more rigid than conventional structures.”³⁸⁵

Another example of unorthodox materials was in a 1936 article which offered its solution to the housing crisis with an all-steel design: “One possible answer to the problem of low-cost housing is found in an all-steel home designed to sell for less than \$4000 including a \$300 lot, the foundation, heating plant plumbing, wiring, paint and

³⁸¹ PM, vol. 63, no. 6, 1935, 805, “The House that Runs Itself”.

³⁸² PM, vol. 63, no. 6, 1935, 805, “The House that Runs Itself”.

³⁸³ PSM, vol. 131, no. 4, 1937, 43, “Ready-Made House Costs \$500”.

³⁸⁴ Wright 2008, 129–130.

³⁸⁵ PSM, vol. 130, no. 1, 1937, 37, “Glue Replaces Nails in Prefabricated Wooden Houses”. See also PM, vol. 72, no. 1, 1939, 54, “Three-Room Plywood House Is Built in a Day”.

cost of labor all together.”³⁸⁶ As the higher price suggests, this house even included some of latest amenities such as air conditioning and modern plumbing. Another article which explored the house made of steel variety promised that “The advantages of a steel framework like that used on towering skyscrapers are brought to the small home by a new system that combines the metal with concrete and wood.”³⁸⁷ By comparing the building of an affordable single-family home to that of building a skyscraper the writer evoked images of the prefabricated house as an essentially modern dwelling. Such faith there had been in the prefabricated house during its heyday in the mid-1930s that in 1935 a PM article presented a plan for a truck which had been specifically designed to deliver ready-made houses to all parts of the United States. The article further illuminated the scale of the endeavor in a later passage: “According to plans, each of the 1,500 proposed vehicles will carry one complete house ready for assembly, two drivers, a master mechanic and a building supervisor. Sleeping accommodations above the seat will enable the crew to travel night and day, speeding up the movement from one site to another.”³⁸⁸

As noted above, there was also another, a more luxurious, strand of thought in the visions of the homes of the future which preached the promise of the electrical home of tomorrow. One especially illuminating article of this variety was published in 1934 in PSM, titled “First Fully Electrified House Runs Itself”. The article gave a particularly clear and comprehensive description of the home of the future, complete with a housewife:

Simply by pressing a button and speaking into a wall microphone, a housewife converses with front-door callers from any part of the house. An electric wagon brings dinner to the table; when its reeled cord is plugged in an outlet, hot and cold compartments keep food at the right temperature throughout the meal. The door to the kitchen, responding to her weight on a foot treadle, opens as by magic when the housewife approaches it, hands full of dishes. A concealed motor whisks the elevator-type panels into the wall. Dishes wash themselves and towels are dried electrically in the kitchen. Should the housewife scratch her finger on a pin, an electric cell in

³⁸⁶ PM, vol. 65, no. 6, 1936, 846, “Five-Room Welded Steel Home at Low Cost”.

³⁸⁷ PSM, vol. 131, no. 5, 1937, 16, “Novel Building Materials Shown”.

³⁸⁸ PM, vol. 63, no. 6, 1935, 880, “Giant Truck Will Carry ‘Mail Order’ House”.

the laundry manufactures fresh chemical antiseptic. A weather factory in the basement warms the house in winter and cools it in the summer.³⁸⁹

The language of this and other articles of its kind is noteworthy. The door which “opens as by magic”, the “dishes that wash themselves” and the “weather factory in the basement” are all quite powerful turns of phrases and there would have probably been more toned down ways of expressing them. Many articles that dealt with novel inventions were not technically writing about the future, but the language that those articles use could only be described as utopian. In fact, the term “air conditioning” had been coined in 1907, but first truly practicable air conditioning was achieved in 1931. The novelty of the invention reflected in the terms in which it was described. Air conditioning was often described with terms like “machine-made weather for the home”, “automatic weather machine” or just plain “weather control.”³⁹⁰ The 1929 PM article “Can Man Control the Weather?” also contains a good example of the use of utopian language. The article began with the dramatic proclamation: “The artificial control of weather is far from being a mere dream of the future. It is already accomplished to vast extent in all parts of the world.”³⁹¹ However, this dramatic proclamation was undermined only a few lines later; the author of the article counted clothing and housing as forms of weather control.

This strand of thought is connected with what Ruth Schwartz Cowan has termed the “industrial revolution in the home” which more or less coincided with the interwar period. As Cowan writes “The change from the laundry tub to the washing machine is no less profound than the change from the hand loom to the power loom; the change from pumping water to turning on a water faucet is no less destructive of traditional habits than the change from manual to electric calculating.”³⁹² This industrial revolution in the home and the ongoing electrification of the society had inspired expectations of an automated “push-button world” of the future in which “tomorrow’s housewife

³⁸⁹ PSM, vol. 124, no. 4, 1934, 32–33, “First Fully Electrified Home Runs Itself”.

³⁹⁰ PM, vol. 60, no. 2, 1933, 232, “Home-Made Weather Regulated by Dials”.

³⁹¹ PM, vol. 52, no. 5, 1929, 822, Frazer, Calvin, “Can Man Control the Weather?”.

³⁹² Cowan 1976.

[would] do most, and perhaps all, of her work by pushing buttons and flipping switches.”³⁹³

The continuing advance of electrification seemed to produce an appliance after appliance to relieve the housewife of her drudgery. This prompted many visionaries to write about the automated world of tomorrow. One of these visionaries was none other than Thomas Edison. Belasco writes that Edison himself predicted that automation “would turn manual laborers into ‘superintendents watching the machinery to see that it works right.’” Citing Edison, Belasco continues that due to “electric cooking [...] the housewife of the future will be neither a slave to servant nor herself a drudge, [but] rather a domestic engineer [...] with the greatest of all handmaidens, electricity at her service.” As a result, he expected that women would be released from this “debilitating drudgery” and that they would actually “be able to think straight” and participate more fully in the society.³⁹⁴ The home, as is clear also in Edison’s writing above, was seen as the domain of women. In fact, the role of women in the visions of the future examined in this study was very limited; if women were mentioned at all, they were almost without exception housewives. The articles about the home of the future are often particularly revealing of the tendency of predictions to overlook secondary effects of new technologies such as social change.

One of the catchphrases in the articles discussing the automated homes of the future was “a house that runs itself.” Despite the houses running themselves pretty much automatically, housekeeping was still perceived exclusively as a woman’s job, even if it only meant pushing buttons and overseeing the machinery. Many of the visions professed to liberate the housewife from her drudgery, but they seldom offered them any alternatives to housework. An article published in *PM* in 1928 suggested that “most women would turn out better homemakers if they were given the equipment to make better homes with. [...] Labor-saving and timesaving machinery; anything that will take the drudgery out of housekeeping and save time for other things. What things? [...] To save time for what?”³⁹⁵ The two questions are quite telling. However, this article is actually one of the rare articles examined in the scope of this study which expressed that

³⁹³ *PM*, vol. 61, no. 5, 1934, 698, “The Electrical Home”.

³⁹⁴ Belasco 2006, 173.

³⁹⁵ *PM*, vol. 50, no. 5, 1928, 879, “Build a Home that Runs Itself”.

women had something more to their lives than housekeeping, as it listed the things women needed more time for: “the call of the great out-of-doors, week-end excursions in the new car, camping, picnics, recreation, club work, community service and a long list of privileges which women are entitled to just as much as men.”³⁹⁶

There were many similarities in the discourses about the proposed homes and farms of the future. Belasco has written about the visions of electrification and automation of rural communities and farms. By 1930 just one out of ten farm homes were electrified, while in the towns and cities the number was almost nine out of ten. This prompted the noted science popularizer Edwin Slosson, whose views were already discussed in chapter three, to think about the effect that the advancing electrification would have on the farmer and his family. As cited by Belasco, Slosson asked: “Will he continue his commendable habit of early rising if he can milk a dozen cows at a time by simply turning on the juice? Will not the farmer’s wife lose the well-rounded arms that she developed by long hours at the churn and the rosy complexion that she acquired over the cook stove? Will the tennis racket adequately take the place of the buck-saw in the development of the muscles and the sense of duty?”³⁹⁷ Slosson, like so many other visionaries, failed to see the undesired consequences of his vision. To pay for the electricity, the farmer would have to take on more cows or a second job and many small-scale farmers wouldn’t have the money to pay for the electrification in the first place. Belasco argues that the promise of this push-button future blinded many visionaries from seeing that it would also lead to the triumph of “bigger farmers and manufacturers, particularly Edison’s conglomerate, General Electric, which promoted the ‘all-electric farm’ boasting one hundred appliances.”³⁹⁸ Another example of undesired consequences of technological change has to do with the household appliances becoming more common throughout the interwar era. Studies have found that the new household appliances had a very surprising effect: they actually modestly increased the time women spent at housework instead of reducing it, although it might be safe to say that the work got at least somewhat less strenuous.³⁹⁹

³⁹⁶ PM, vol. 50, no. 5, 1928, 879, “Build a Home that Runs Itself”.

³⁹⁷ Belasco 2006, 173.

³⁹⁸ Belasco 2006, 173–174.

³⁹⁹ Cowan 1976, 15. Bittman, Rice, & Wajcman 2004.

The impact that a new technology or technologies will have on the society and culture is hard to evaluate beforehand and, in fact, often it is not even seriously attempted. This is particularly evident in the case of women. PM and PSM were marketed almost exclusively at a male audience and this was, of course, reflected in their contents. In the visions of the future examined in this study women were generally reduced to the role of a background extra if they were present at all. When women were given a bigger role in any vision, they were most likely cast as housewives and mothers. This led to a curious incongruity in the visions depicting the automated home of the future; in almost all of these visions the role of the housewife remained unchanged. In fact, perhaps it would be more correct to say that the role of housewife was reduced even further, as the only thing she would have to do in this push-button world of the future was just that – to push buttons. This serves as a good illustration of the tendency to underestimate or ignore the more subtle social impacts of the advancing technology.

This, of course, in part reflects the aforementioned fact that the new household appliances rather increased the time women spent on housework, but it is very unlikely that this observation had much impact on the visions of the future. Rather, it seems to illustrate that it is much easier to imagine a future that is materially and technologically different than it is to imagine a change in the social order. This is implicit in the 1934 article “The Electrical Home” which listed the duties of the housewife: “Cooking, washing dishes, answering the doorbell and the telephone, tending furnace, doing the laundry – all these tasks, and more, will be performed quickly and efficiently with the assistance of mechanical and electrical servants devised by science for the family of moderate means.”⁴⁰⁰ As mentioned earlier, even though the aim and purpose of these new home appliances was to relieve the housewife of drudgery, taking care of the home was still seen solely as the responsibility of women. As Pursell has perceptively argued, “The revolutionary potential of household mechanization was thwarted by social norms that needed the market for consumer goods that women represented, encouraged them to look on appliances as evidence of material progress and personal fulfillment, but ultimately wished to preserve the traditional gender distinctions and limitations on women.”⁴⁰¹ The way in which the author of the article chose to demonstrate the

⁴⁰⁰ PM, vol. 61, no. 5, 1934, 698, “The Electrical Home”.

⁴⁰¹ Pursell 2007, 247.

usefulness of the new intercom system, playfully dubbed as the “the doorman”, was also rather telling. With the help of the intercom, housewives of the future would be able to “carry on a conversation without leaving her work.”⁴⁰² One must wonder, how much work there could possibly remain to be done, as the author had earlier pointed out that “if all the switches in this [...] house should be turned on at the same time, electrical capacity equal to the efforts of 864 trained servants would be set to work.”⁴⁰³

⁴⁰² PM, vol. 61, no. 5, 1934, 124A, “The Electrical Home”.

⁴⁰³ PM, vol. 61, no. 5, 1934, 698, “The Electrical Home”.

6. CONCLUSIONS

The aim of this study was to examine the visions of the future in the period between the world wars in the United States. This has been done by examining and analyzing the articles discussing the future published in the American popular science and technology magazines, *PM* and *PSM*. The contents of the articles widely reflected the themes of technological enthusiasm and utopianism, modernity and the idea of progress. This study has attempted to answer two questions: what the magazines wrote about the future and why they wrote what they wrote. To answer these questions, this study used an explanatory framework inspired by Reinhart Koselleck's philosophy of historical times combined with the methodology of historical image research. This study set out to test a hypothesis inspired by Koselleck's categories of experience and expectation, which claimed that the optimistic expectations of the future were born out of the experience of radical acceleration of change and technological advancement during the so called Second Industrial Revolution, lasting from the latter half of the nineteenth century until the First World War. It is, of course, impossible to conclusively prove any hypothesis, but as this study has shown, mainly in chapter three, the hypothesis appears to be well supported by the research. The dialectic of experience and expectation has indeed proved to be a very useful analytical tool in the study of past futures.

The writers of *PM* and *PSM* repeatedly expressed awareness of living in an unprecedented era in human history throughout the interwar period. They often emphasized the perceived changes for the better by comparing the past to the present and expressed a belief that progress would continue also in the future. Furthermore, many writers also expressed an awareness of the accelerating pace of change, leading many to believe in a future that was radically different than the present. The attitudes towards technology and the future it promised ranged from mild optimism to full-blown utopianism, although sometimes pessimism about the future or a certain technology was used as a rhetorical device, as a straw man to be knocked down.

The onset of the Great Depression didn't reveal any radical break in contents of the articles. Explicit discussions of politics were extremely rarely even during the Depression, save for some remarks which sympathized with the technocratic movement. That is not to say that the Depression didn't have an impact on the visions of the future.

One of the most visible impacts that the Depression had on the visions of future was the increased corporate interest in the future as observed in the articles about the two major World's Fairs of the decade, The Century of Progress International Exposition held in Chicago during 1933–1934 and the New York World's Fair of 1939–1940. After the prosperous 1920s the corporations had temporarily lost their hold on the public imagination to politicians, reformers, and technocrats and they tried to reassert their hold with promises of a better future through material consumption and commercialism. Allusions to the future, it was thought, helped to sell products as diverse as home appliances and automobiles. The rise of the industrial design as a profession coincided with these endeavors and gave birth to the visual style of streamlining which came to symbolize future and progress. Streamlining was applied to pencil-sharpeners and skyscrapers alike, in hopes to make them more modern and marketable.

Visions of the future city in the early 1920s still had elements of the simple extrapolation method of the early twentieth century; it was still mostly based on an extrapolated version of New York and its problems. In fact, visions of a better future were often born out of the problems in the present. The passing of the first zoning laws of the United States also shaped both the actual and the future cities. The zoning laws gave architects and urban planners more control over the city's future and this was reflected in the visions of the future as highly specialized and rational planning, particularly in the transportation schemes. Often the chosen method of transportation in the city of the future was an aerial vehicle of one sort or another, most commonly the airplane. This was reflected in the design of the cities in the forms of airports built on top of huge megastructural skyscrapers.

The image of the city of the future evolved throughout the interwar period and they could be roughly divided into two categories: the visions of the centrists and decentrists. Centrists of the interwar era, for the most part, saw that the city of the future would be a densely built and populated skyscraper city. Centrists' densely built skyscraper city was at the height of its popularity during the 1920s and early 1930s. Decentrists, whose visions were vastly outnumbered by the centrists, envisioned that the city of the future would be more spread out and spacious, generally low-built with the exception of a few high-rising towers. Their visions eclipsed the centrists' as the 1930s progressed.

In the latter part of the 1930s, depictions of the future cities became more and more detached from any actual city, preferring the blank slate approach to city planning of Le Corbusier. Both Futurama and Democracy, arguably the most prevailing visions of the 1930s cities of the future, shared this character. The decentrists were inspired by the automobile and its possibilities. As a result of accelerating urbanization and the increasing rates of car ownership the cities had become progressively more congested. This led many to leave the city which resulted in the suburban boom of the 1930s which was reflected in the rising popularity of the visions of the decentrists.

Many articles about the city and home of the future also discussed the building materials of the future. Architects and other visionaries were fascinated by the possibilities of the newly discovered materials as they emphasized the modernity of their designs and visions. New types of architectural glass, metals, and even plastics were all attributed some rather utopian qualities. Articles about the building materials of the future can be seen as typical examples of forecasting the possibilities of new and workable innovations. Taking this into consideration, it is possible that the utopian qualities attributed to these materials were at least partly a marketing tactic.

Predictions about the home of the future were commonly featured in magazines, world's fairs, and department store exhibitions throughout the interwar period. There were many competing visions of home of the future. Architects often emphasized the modernity of their designs, industrialists and Le Corbusier wanted to build mass-produced houses and they all wanted to fill the homes with modern technology and appliances. The interwar period coincided with what has come to be called the industrial revolution in the home, meaning the electrification of the home and resulting widespread usage and ownership of home appliances. Indeed, the most common image of the home of the future was the electrical and automated home of the future. Because visions of the automated homes of the future made the housewife all but redundant, it was all the more intriguing that these articles were practically the only articles that featured women in any meaningful role. Indeed, gender roles and other subtle cultural elements remained particularly static in the visions of the future examined in this study.

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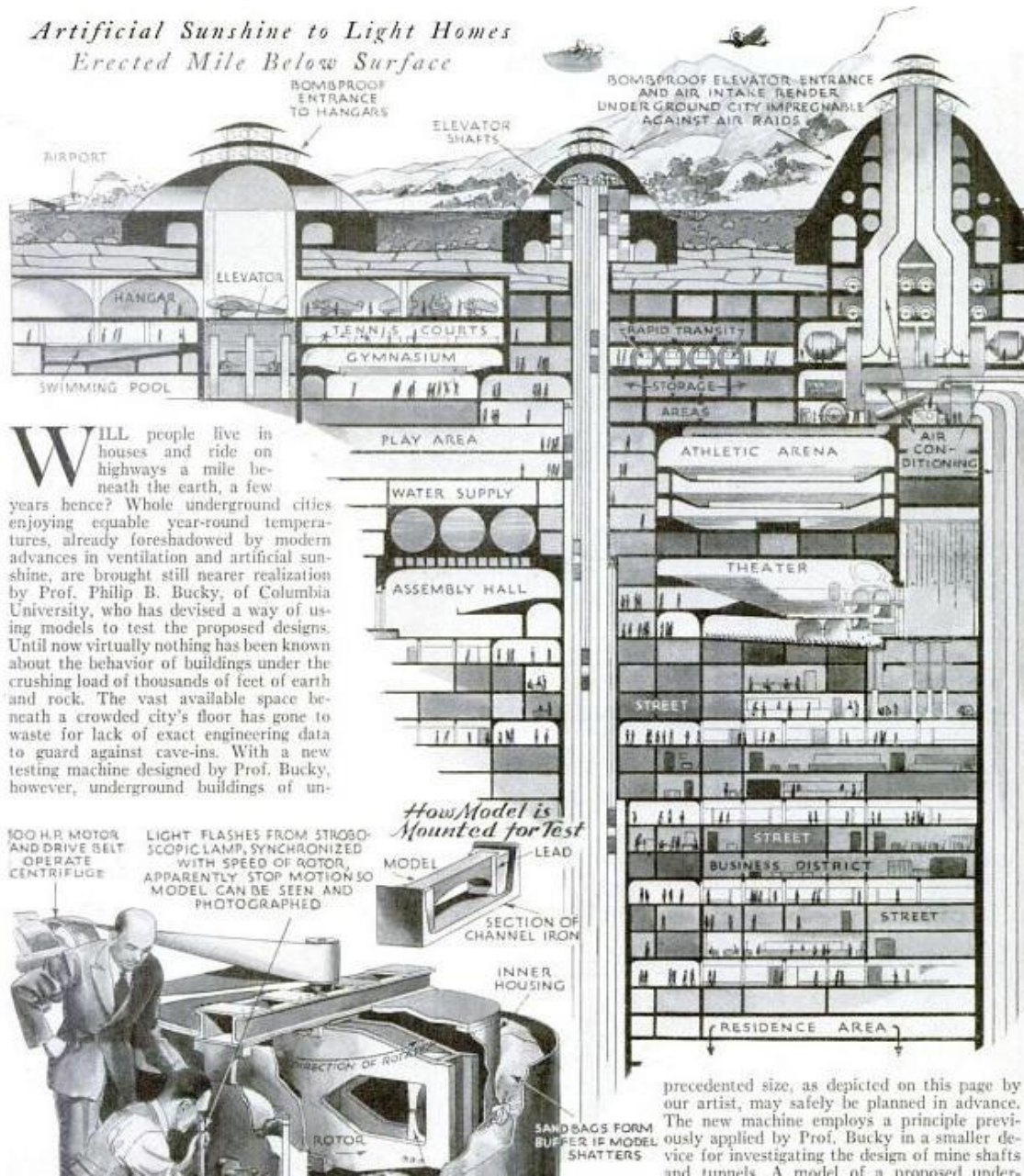
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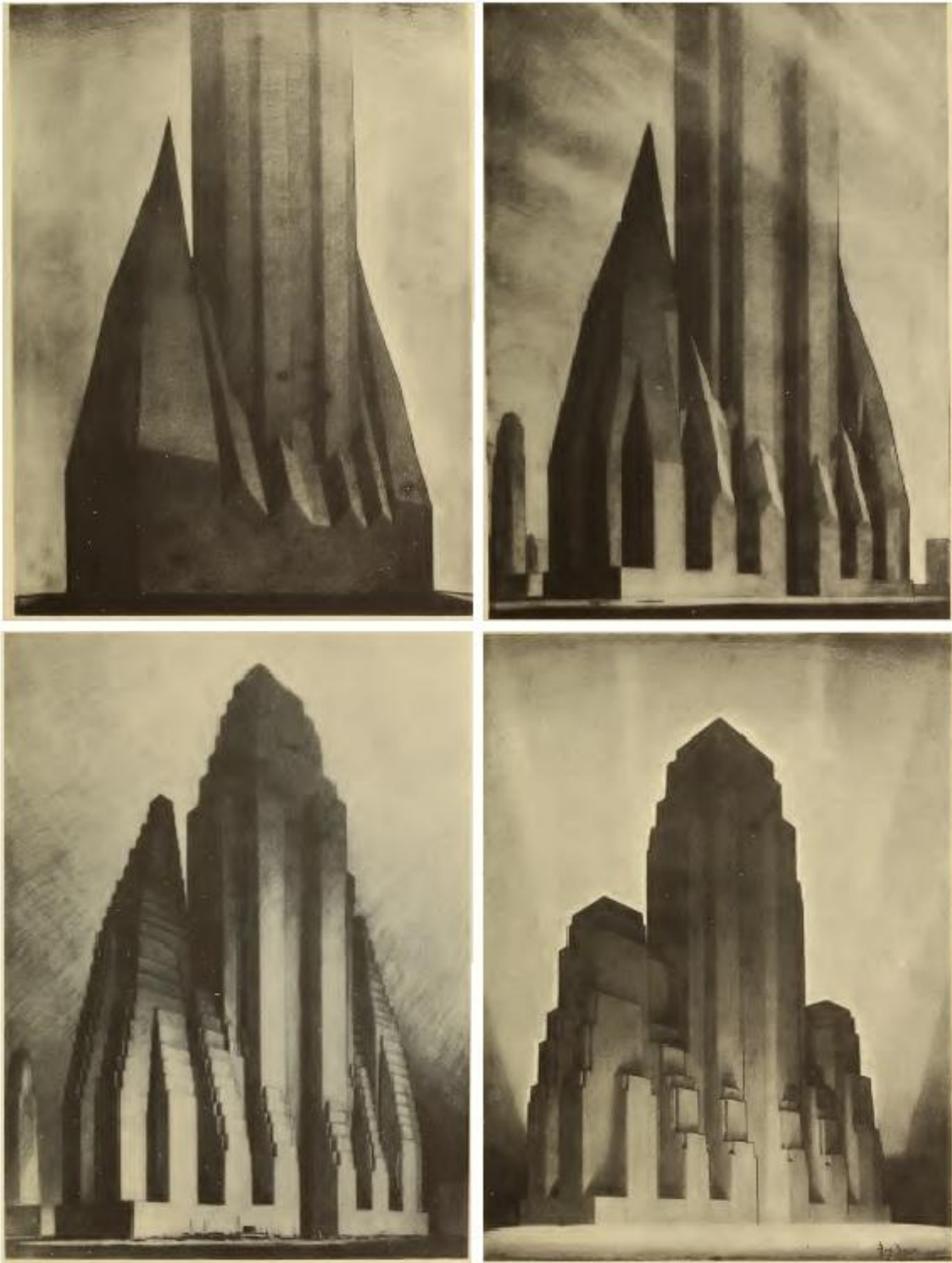
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APPENDICES

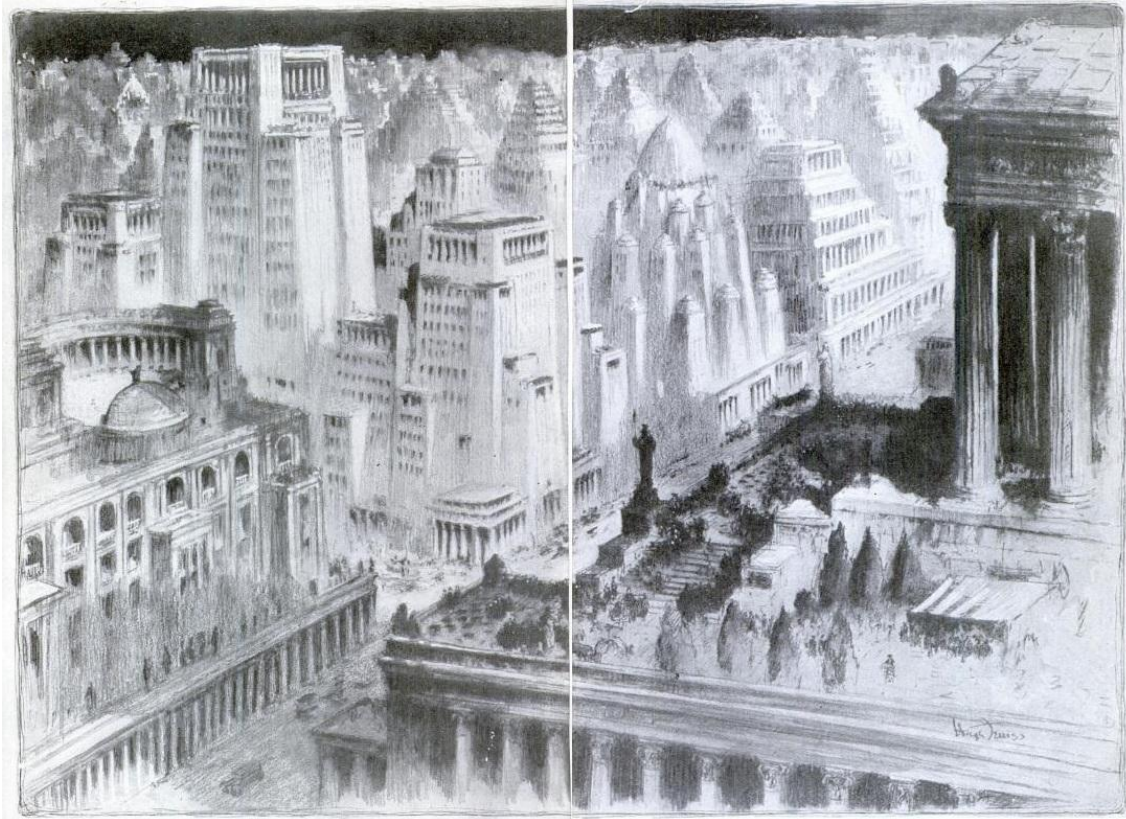
Appendix 1. PSM, vol. 124, no. 6, 1934, 27, "Cave Cities of Tomorrow".



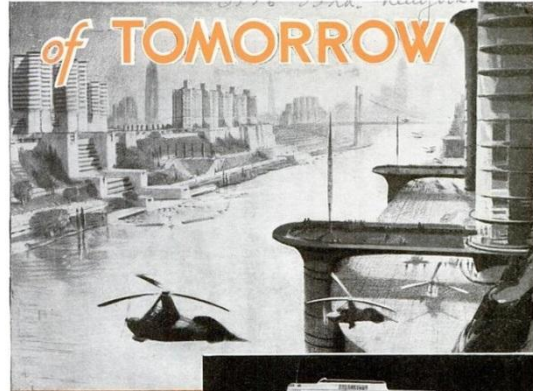
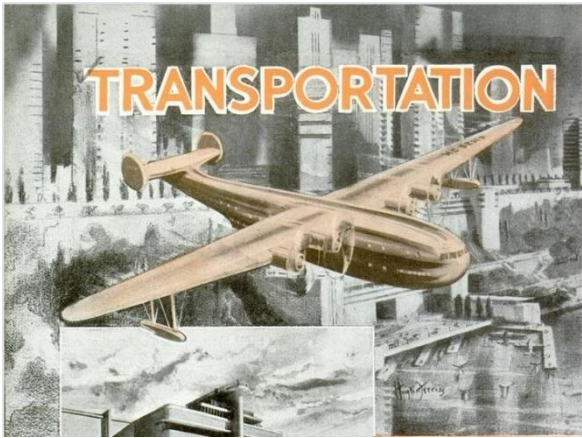
Appendix 2. Ferriss 1929, 72–80. “Four Stages” by Hugh Ferriss.



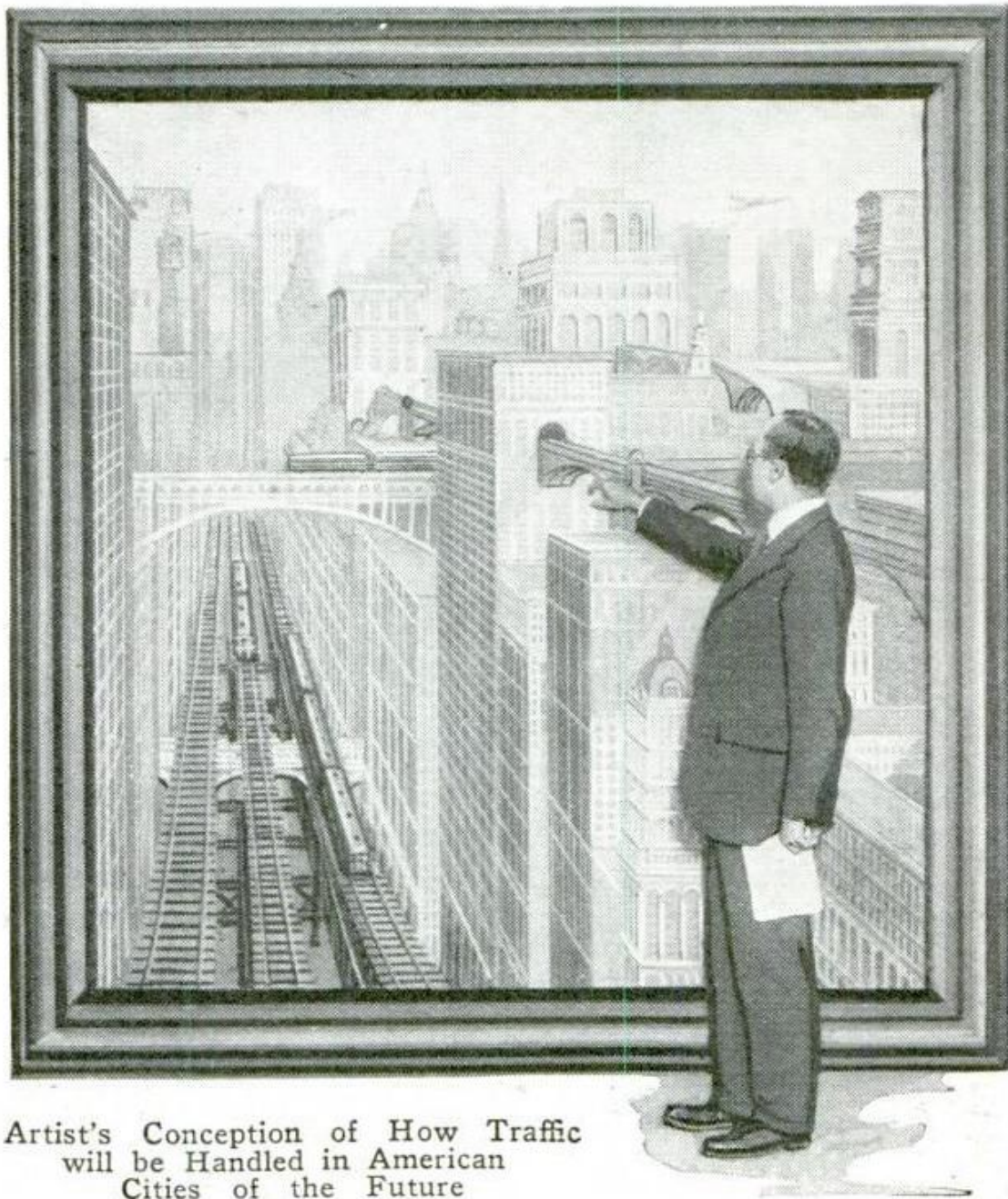
Appendix 3. PM, vol. 42, no. 2, 1924, 230–231, “The City of the Future”.



Appendix 4. PM, vol. 75, no. 3, 1941, 354–355, Kuhler, Otto, “Transportation of Tomorrow”.



Appendix 5. PM, vol. 40, no. 3, 1923, 437, "Fairy City of Future Forecast at Exhibit".



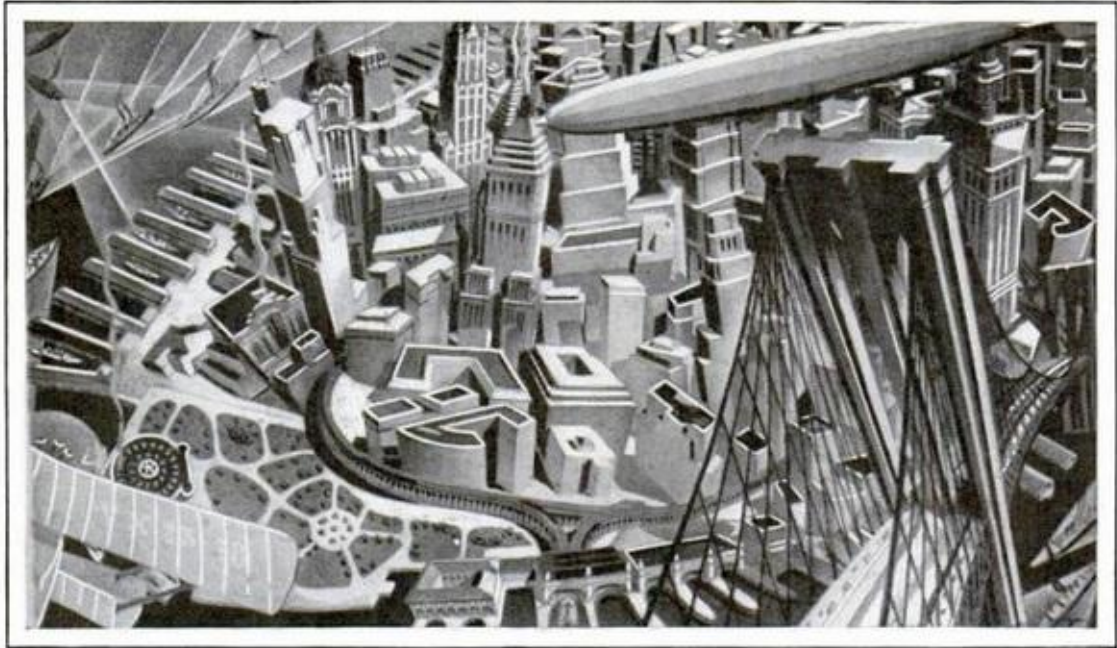
Artist's Conception of How Traffic
will be Handled in American
Cities of the Future

Appendix 6. PSM, vol. 104, no. 5, 1924, 39, 133, Green, Fitzhugh, "Can Science Save a Crowded World?".



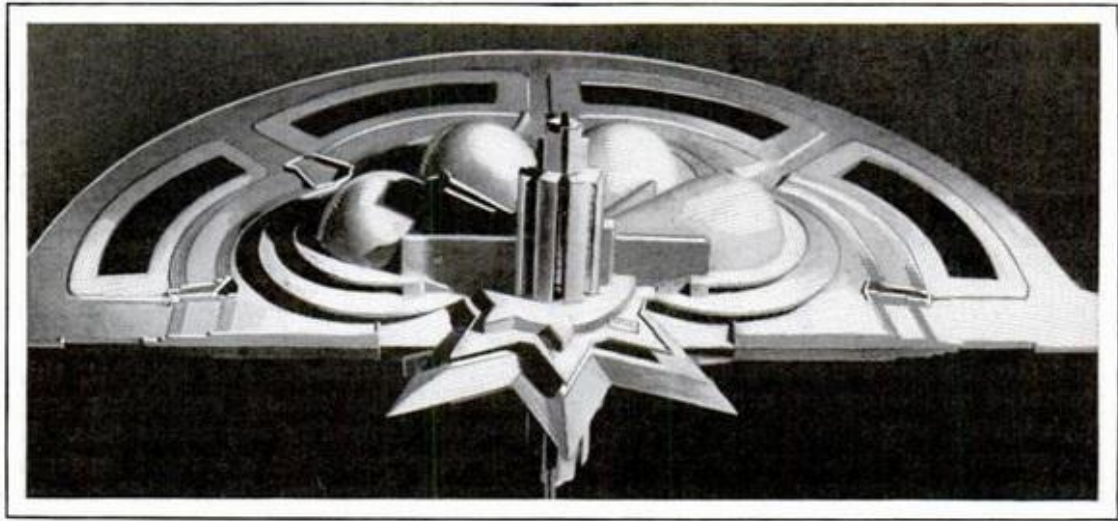
Triple-deck street corner in the crowded city of the future—a solution of the ever-increasing traffic problem proposed by Harvey Wiley Corbett, president of the Architectural League of America. Streets would cross one under the other, thus eliminating cross currents of vehicular traffic. Pedestrians would use an elevated sidewalk, bridged at all streets in both directions, ending the clash of foot and wheel traffic

Appendix 7. PM, vol. 56, no. 2, 1931, 278, "The Home of the Future".



"Downtown," a Mural Depicting Three Different Districts of Manhattan; the Painting Is Modernistic in Keeping with the Architecture and the Interior Decorative Scheme

Appendix 8. PM, vol. 56, no. 2, 1931, 278, "The Home of the Future".

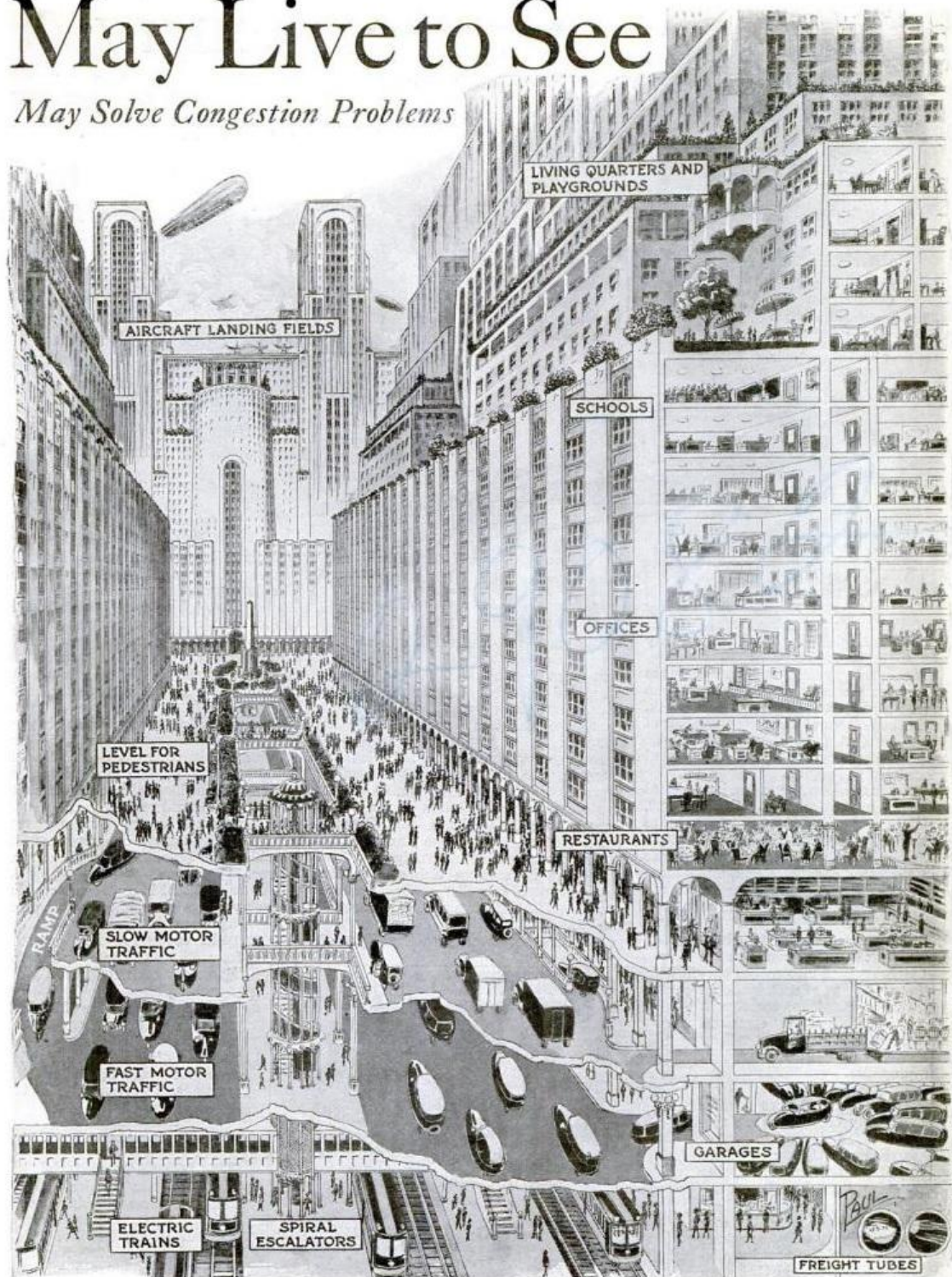


© Norman Bel Geddes
The Temple of Music, One of the Beautifully Modernistic Buildings Now in Course of Construction for the World's Fair at Chicago in 1933

Appendix 9. PSM, vol. 107, no. 2, 1925, 41, "The Wonder City You May Live to See".

May Live to See

May Solve Congestion Problems

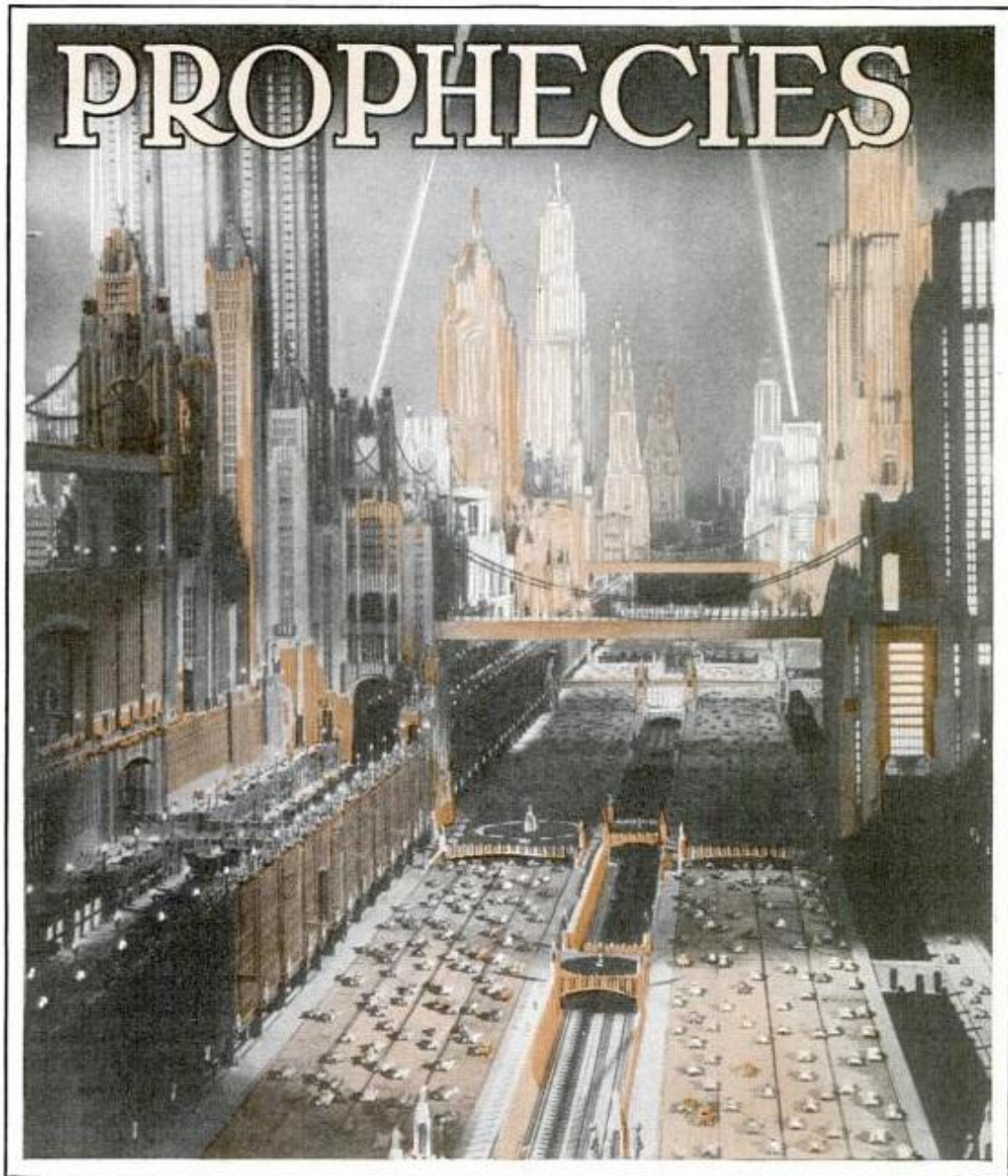


How You May Live and Travel in the City of 1950

Future city streets, says Mr. Corbett, will be in four levels: The top level for pedestrians; the next lower level for slow motor traffic; the next for fast motor traffic, and the lowest for electric trains. Great

blocks of terraced skyscrapers half a mile high will house offices, schools, homes, and playgrounds in successive levels, while the roofs will be aircraft landing-fields, according to the architect's plan

Appendix 10. PM, vol. 54, no. 6, 1930, 971, "Prophets and their Prophecies".



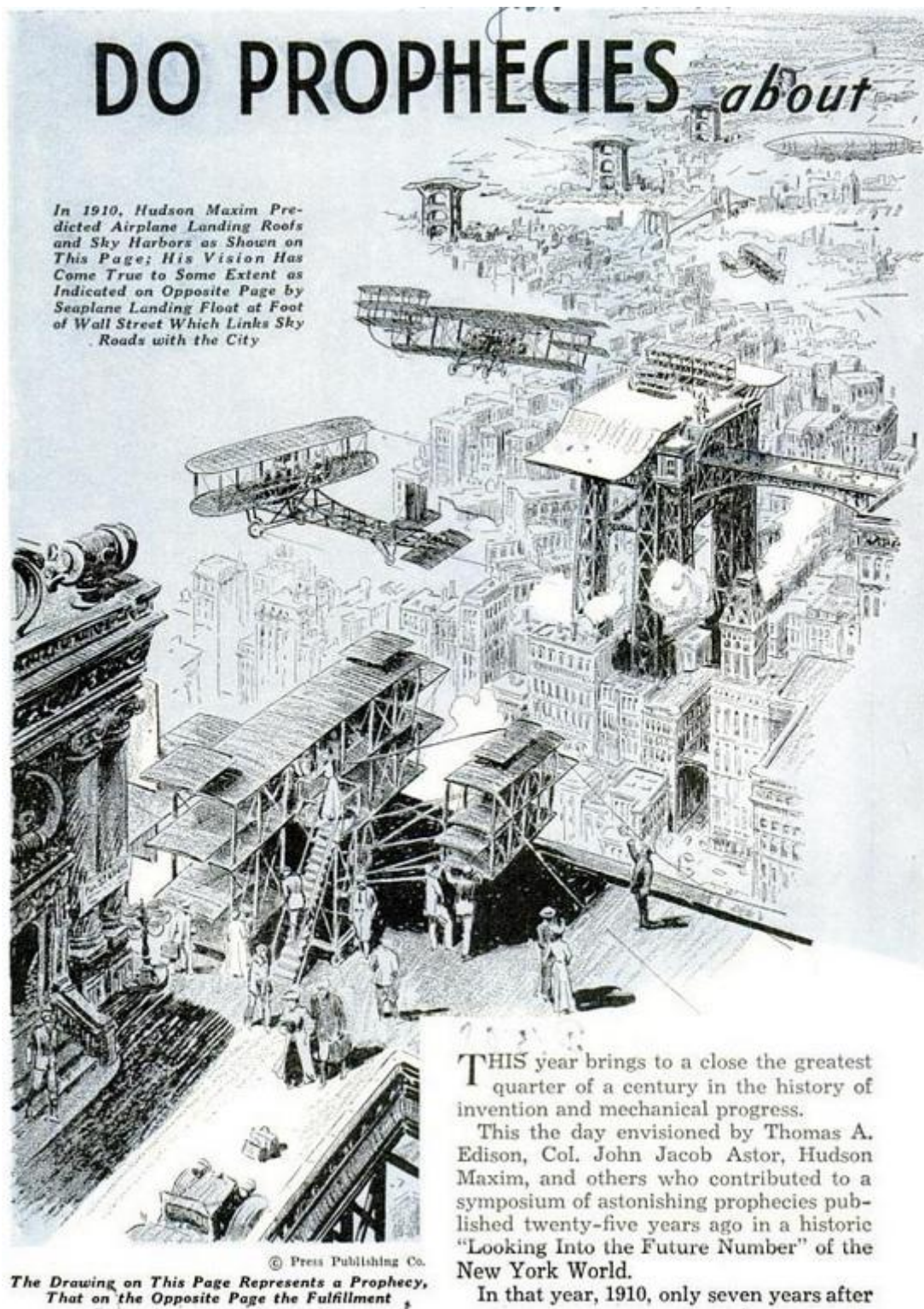
Model in Miniature of the City of the Future as Conceived by the Staff of a Musical Production; This Model, with Nine Traffic Levels and Sky-Piercing Buildings, Cost \$250,000

Appendix 11. PM, vol. 57, no. 3, 1932, 396, Churchill, Winston, "Fifty Years Hence".

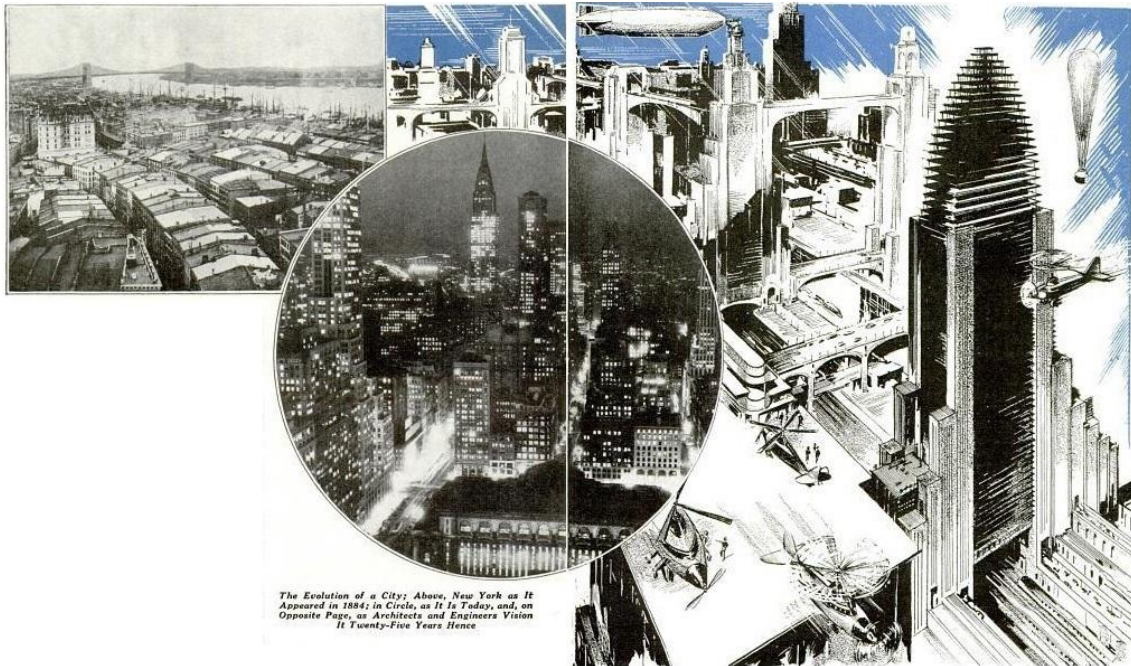


The Metropolis of the Future May Contain Set-Back Structures
Like These and Elevated Streets

Appendix 12. PM, vol. 63, no. 3, 1935, 362, "Do prophecies about inventions come true?"



Appendix 13. PM, vol. 63, no. 3, 1935, 364–365, “Do prophecies about inventions come true?”.



Appendix 14. PM, vol. 63, no. 3, 1935, Cover.



Appendix 15. PM, vol. 74, no. 6, 1940, 808–809, Teague, Walter Dorwin, "Planning the World of Tomorrow".

PLANNING *the*




Drawing of transportation system suggested by the author. Above, six-lane system in silhouette. Left, future metropolis as designed by Mr. Teague for U. S. Steel exhibit at New York World's Fair

By Walter Dorwin Teague
Industrial Designer and Author of "Design This Day: The Technique of Order in the Machine Age," published by Harcourt Brace

A BETTER world than we have ever known can and will be built. But the builders must feel into the future, groping carefully, ready to adapt their plan, at any moment, to new truths and unforeseen conditions that may be revealed as they progress.

Our better world may be expected to make equally available for everybody such rare things as interesting, stimulating work,

WORLD of TOMORROW



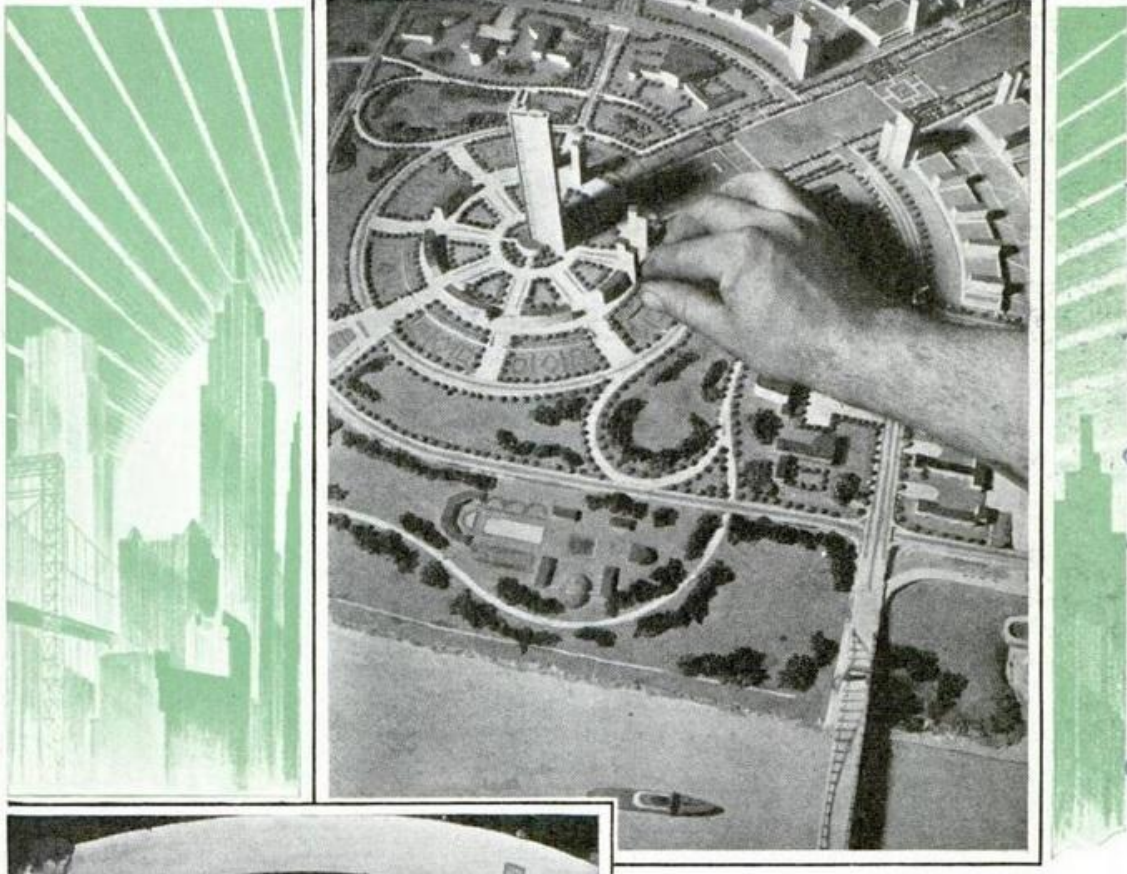

emancipation from drudgery and a gracious setting for daily life, freedom of movement, free exchange of thought, bodily well-being and mental equanimity. But since even such simple conveniences as modern kitchens and bathrooms have not yet become general in America, attainment of these more difficult objectives by a majority of our people is far in the future.

The reform of our railroads is certainly among the most pressing problems confronting us today, because our social and economic system, if it persists, will continue to be based on the free movement of goods and men. Railroads maintain broad

Note that the rail car travels on a single wheel, with supporting wheels at either side. Inset, the car in silhouette. Note tail fin which would make for stability at high speed

Appendix 16. PM, vol. 71, no. 3, 1939, 321, Leggett, Julian, "The City of Tomorrow".

The CITY *of* TOMORROW



Appendix 17. PM, vol.74, no. 2, 1940, 188, "Super-Speed Roads of Tomorrow".




Super-Speed

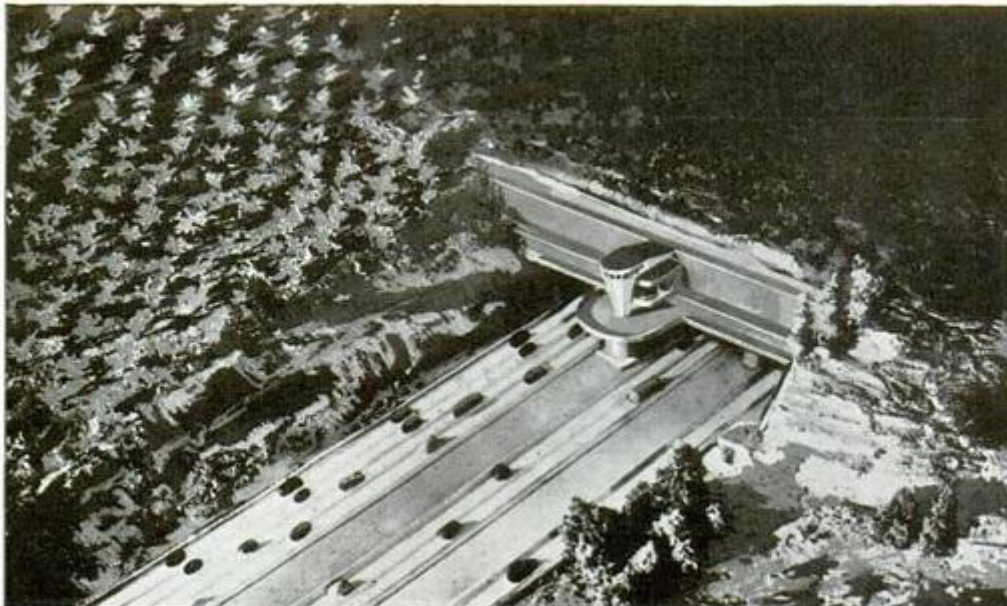
IT IS 4:15 o'clock on the afternoon of a pleasant June day in 1960. You, the wife and the children in your modest home on the outskirts of Washington, D. C., are planning to drive over for a day with Aunt Lillian in San Francisco.

You promised Aunt Lillian over the short-wave telephone that you would surely drop in for supper tomorrow night and it was good to see the happy smile on her face as she talked across the states.

With more than twenty-four hours to span the continent in 1960 at the wheel of your little old teardrop model, aluminum-alloy sedan you shouldn't be late, in the

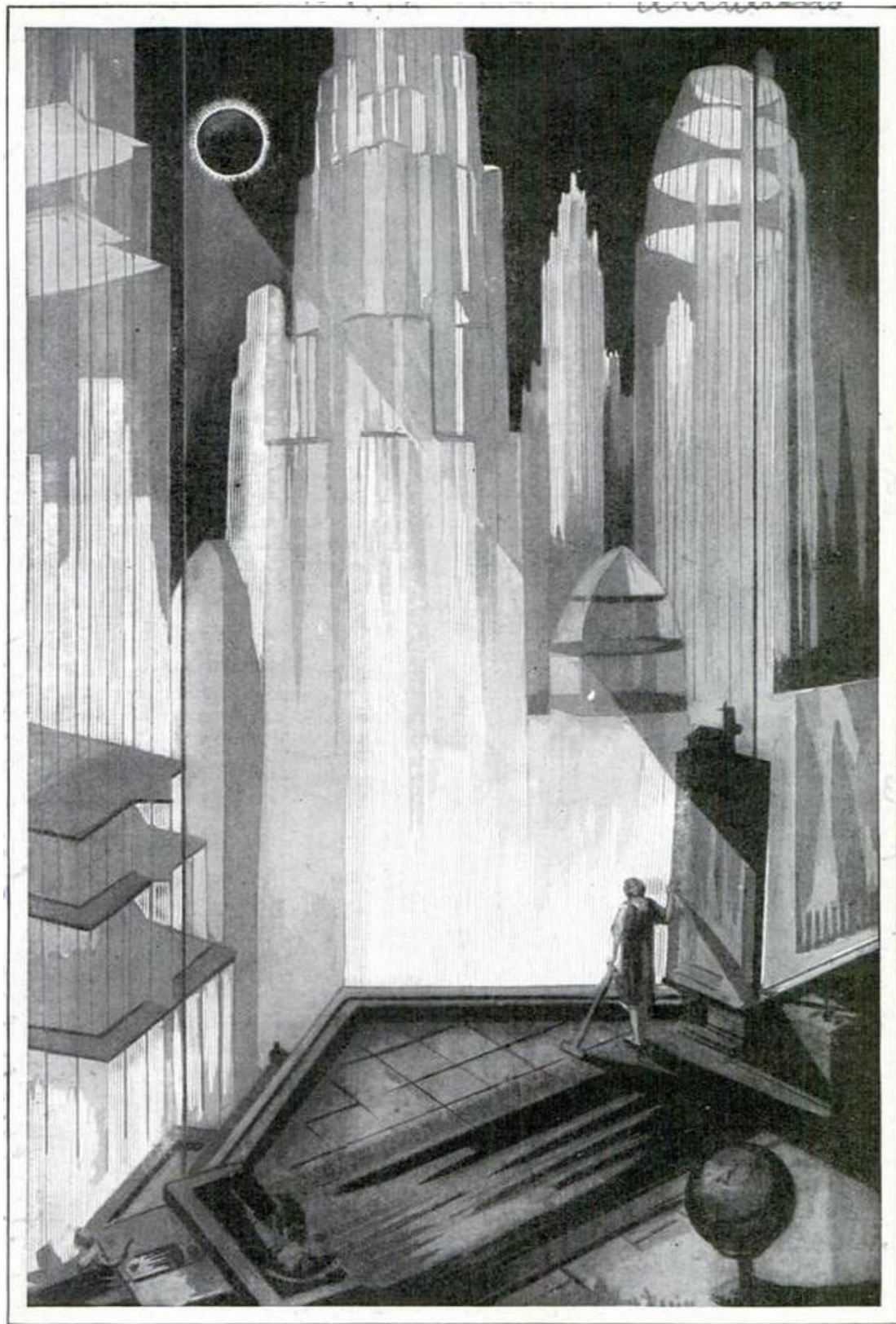


Future highway pictures and sketches copyrighted 1940 by Norman Bel Geddes; photographs by Richard Garrison

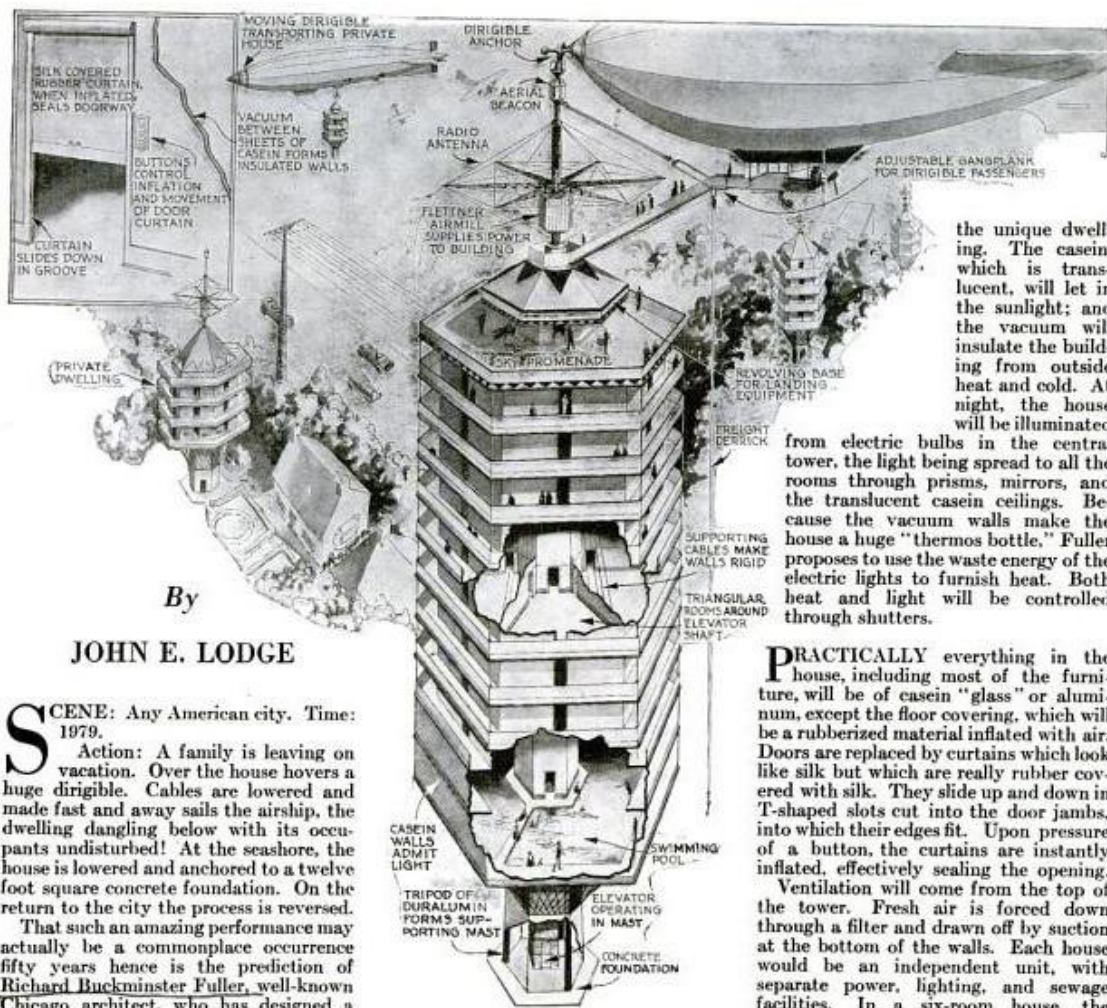


Boulevards in the air (top), with no meeting of cross traffic or pedestrians, would permit fifty-miles-an-hour driving in heart of cities. Center, the teardrop car of 1960. Below, future transcontinental motorway enters mountain tunnel, with fifty, seventy-five and hundred-miles-an-hour lanes shown left to right

Appendix 18. PM, vol. 45, no. 6, 1926, 953, "Glass Skyscraper on Horizon Architect Declares". Illustration by Hugh Ferriss.



Appendix 19. PSM, vol. 115, no. 3, 1929, 47, Lodge, John E., "Plans to Home Move Homes by Airship".



By

JOHN E. LODGE

SCENE: Any American city. Time: 1979.

Action: A family is leaving on vacation. Over the house hovers a huge dirigible. Cables are lowered and made fast and away sails the airship, the dwelling dangling below with its occupants undisturbed! At the seashore, the house is lowered and anchored to a twelve foot square concrete foundation. On the return to the city the process is reversed.

That such an amazing performance may actually be a commonplace occurrence fifty years hence is the prediction of Richard Buckminster Fuller, well-known Chicago architect, who has designed a startling "thermos bottle" home in which the floors branch from a central

the unique dwelling. The casein, which is translucent, will let in the sunlight; and the vacuum will insulate the building from outside heat and cold. At night, the house

will be illuminated from electric bulbs in the central tower, the light being spread to all the rooms through prisms, mirrors, and the translucent casein ceilings. Because the vacuum walls make the house a huge "thermos bottle," Fuller proposes to use the waste energy of the electric lights to furnish heat. Both heat and light will be controlled through shutters.

PRACTICALLY everything in the house, including most of the furniture, will be of casein "glass" or aluminum, except the floor covering, which will be a rubberized material inflated with air. Doors are replaced by curtains which look like silk but which are really rubber covered with silk. They slide up and down in T-shaped slots cut into the door jambs, into which their edges fit. Upon pressure of a button, the curtains are instantly inflated, effectively sealing the opening.

Ventilation will come from the top of the tower. Fresh air is forced down through a filter and drawn off by suction at the bottom of the walls. Each house would be an independent unit, with separate power, lighting, and sewage facilities. In a six-room house, the ground floor would provide space for the family automobile and airplane. On the

Plan of "thermos bottle" house with moored airship. Inset upper left: draft-proof door.