Living in the Sky
A Utopia for this Century

Maurileno Rosa

2015
But those who hope in the Lord will renew their strength. They will soar on wings like eagles; they will run and not grow weary, they will walk and not be faint.

Isa 40:31
I just like to take this opportunity to thank firstly and foremost God for this year and amazing experiences that I have been living in Ireland. Secondly, I would like to thank CAPES (Brazilian Federal Agency for the Support and Evaluation of Graduate Education) and SWB Program (Science Without Borders) for their support and financing this year at the UL.

Thanks to my family and friends for all encouragement and support, constantly inspiring me and putting me up. Without you, I could not have gotten through the last five years.

A special thanks to Anna Ryan, Andrew Griffin and Merrit Bucholz for their time, advice, dedication and guidance through this thesis year. As well as to Fran and Noel for all their help during this time.

I would also like to thank Declan Costelloe, who helped with the writing of my thesis.

Special thanks to Douglas de Souza, the first professor who helped me to prepare the thesis.

And lastly, I am especially grateful to my classmates for their help, friendship and support.
# Table of Contents

**Thesis Essay**
- Introduction 10
- A Utopian Impulse 10
- The City and the Dimensions of Human Life 11
- A New Spatiality 12
- Energy Resources and Contemporary Cities 13
- Vertical City 14
- Conclusion 16

**Design**
- Location 19
- Context 20
- Current Land Use 21
- Site Plan 22
- Floor plan 23
- Transport 24
- Energy 25
- Sao Paulo Downtown - Before 26
- Sao Paulo Downtown - After 27
- Aerial View 29
- Diagram of Uses 31
- Section 33
- Down to Details 34
- Photographs 39

**Bibliography** 41
New York's favorite young artist talks about his art and his time at Roux

Thesis Essay
Introduction

The world and the various societies within it, are constantly changing in all aspects. Some important aspects include changes in the human perception of time, the organization of space, the structures of social relationships, economic structures and the availability of resources for energy and industry. In this new century, where phenomenon such as the depletion of fossil fuel, population growth, technological development and climatic changes are witnessed, it is vital to review and think over this moment from a social needs perspective in order to discuss and hopefully solve the challenges of the future.

This paper will discuss the utopian impulse within architecture as an aspiration for a better way of life, with a particular focus on the reconstruction of society and the possibility of synthesizing this with the aforementioned social/human needs perspective. This perspective will serve as a way of adjusting some of the important utopian ideas in architecture—such as Le Corbusier’s projects which were more concerned with the rationalization of urban space—in order to create a more environmentally, economically and socially healthy and sustainable urban environment. The particular environment which will be described herein will draw on a modified notion of the skyscraper and propose a new urban element: a vertical city. The history of utopianism within the field of architecture will be briefly discussed, as will some of the many challenges to this utopian project which have emerged since its conception (and continue to emerge into the contemporary moment and beyond). In addition, I will highlight both the positive and negative aspects of the utopian urge within the field and argue that with the advent of new technologies, a more fluid and flexible urban space which retains some of the positive utopian elements is worth consideration and further investigation.

A Utopian Impulse

Historically, there have been many utopian visions which have attempted to reinterpret, modify, improve and understand society at different times. As explained by Levitas (2013), Utopia can be broadly explained as an imaginary reconstruction of society. The intention is to imagine how life could be and then rigorously analyze the new reality drawn from this creative impulse. It thus acts as a way of providing new interpretations and proposing changes to some aspects of society that the utopian idea reveals. Simply put, it is an impulse towards a better world. In addition, Utopia can be seen as a critical vision of society and contemporary culture; it is a way to expose it to judgment. Utopianism can be considered an antidote to the dominant ideologies within a society (Mannhein apud Levitas 2013). The ideologies which serve to maintain the status quo are subverted by Utopian visions which act as a critical and transformative lens. We can see Utopia as a transformative idea, an ideological action which has the potential to change society.

Some of the basic components of the utopian vision are criticism, engaging in contemporary debates, form, and imagining alternatives to contemporary questions; classic utopias such as those of Thomas More and William Morris whose visions addressed many different aspects of life are good examples (Sargisson 2012, 8-9). Furthermore, we can find these traits in different kinds of ‘texts’ for example: novels, paintings and poems which express the desire to amend the world.

In the field of architecture and urban planning, this utopian impulse can also be found. As our societies are always evolving, there are always new challenges that professionals in this area must confront. Some professionals in this field have a critical vision of the space around them, including theories about how life unfolds in urban areas, the relationship between people and also the social impacts caused by different sources. Architects like everyone else, also have a tendency to be influenced by the ideologies which exist within their culture, school of architecture or the group in which they live, thus the utopian drive has also influenced architects to create visions about how to improve the things around them, how life should be and how to facilitate its expression and development (Sargisson 2012, 146-147).

The twentieth century bore witness to a period of constant change from the industrial era onwards with the rapid expansion of urban centers and, culturally, the emergence of new ways of interpreting the world. In addition, new visionary and utopian ways of living in urban centers began to be considered. There are many examples of this, such as Ebenezer Howard and the garden city movement (Image 1), Le Corbusier and modernism (Image 2), to name but a few (Sargisson 2012, 146-147).

While one can witness the utopian elements in the works of these figures, their oeuvre is quite different. From Howard’s vision, it is possible to understand the intentional creation of a new kind of occupation of cities, with a balance between country and city where people could live in an urban area and also immerse in a country atmosphere. Already, in the most rational view of Le Corbusier, there is a tendency towards the complete rationalization of urban
areas with the imposition of strict, prescriptive uses assigned to each area. Despite these differences in the works of both we can see the intention of criticizing their contemporary moment and outline an alternative vision for the cities in their time.

In the 1960s, post-second World War, many developed countries went through a period of technological and economic expansion which also drove the development of transportation and communication. This period gave birth to the space race, the development of satellite services, robotics, domestic appliances and television. These technological changes began to create a new society of mass culture based on new information systems. Following this shift many architects of that generation came to see architecture as something that needed to evolve and shift many architects of that generation came to see architecture as something that needed to evolve and there thus began to leave more traditional concepts behind. Some proposed a revolution within the discipline, wishing to break with tradition and established standards. A great exponent of this revolution was the English group known as "Archigram", formed by recently graduated architects who gathered to publish a magazine of the same name, known for its provocative content. In this publication texts and projects based on the new world of informational development were presented which criticized the obvious and monotonous traditional way of creating architecture (SILVA, 2004). One of these projects, the Plug in City (which was the idea of seeing the city as a system) offered a vision of a more compact city, which through new organizational principles would be more efficient. It was an idealization of an urban structure that envisioned integrating the entire structure and 'equipment' of the city, in a unique mega-structure formed by networks. The proposal was to establish connection and communication routes to all parts of the city in a completely integrated way. Furthermore, this new model had the intention of providing all kinds of services and facilities in nearby areas to city users. This concept goes against the idea of expanding to the suburbs, which was happening in the post World War II era, partially facilitated by the low price of fossil fuels at the time. Despite the fact that this project was not very applicable at that time, it demonstrates the existing notion and desire to reorganize cities, by reducing distances and controlling population density and quality of life (Image 3).

The City and the Dimensions of Human Life

The problem solving methodology adopted by all of the utopian projects mentioned in this paper resonates with the societal needs perspective. Since humanity's experience of reality is constantly changing, it is necessary to understand the material dimensions of human life: space and time being the most fundamental; these being interconnected in both nature and society. In the current historical epoch our experience of both is transformed under the combined effect of information, technology and the social changes that they have engendered (Castells 2010, 370).

According to Lefebvre (2006, 83) there is not a single social space, but various social spaces and even an indefinite multiplicity, from which the term "social space" denotes an uncountable set. Social spaces interpenetrate and / or overlap, but are unlike physical things that overlap or collide. The same place can have several of these social spaces, according to those who are there and the social groups that are part of it.

Time is not perceptible through the senses, it is something we live within as a fish is unaware of the water it swims through. While we can observe the flow of time through the hours of the day, the seasons, the phases of the moon and the aging process which all beings face, we cannot see or read “time” itself nor can we build using time as material. Time is consumed and runs out leaving only traces and marks such as the rings on a tree trunk or the lines on a face. As Lefebvre said time is inscribed in space and space can be seen as the lyrical and tragic expression of time (Lefebvre 2006, 83).

Our perception of time has changed in the modern era and time is now measured and quantified in ever more precise ways. In particular the measurement of time has become an instrument of tyranny in people's working lives. Simultaneously, designed spaces have ever more precise characteristics: and over the last century have become more homogeneous, fragmented and hierarchical—thus tending to uniformity. This is due to the standardization of construction and the modern methods of urban/ social control. However, in reality this homogeneity is not seen in the overall social 'structure' (no matter how rigidly designed) since human nature with all its unpredictability tends to exert itself from within the allotted fragments, blocks and parcels designers create and overflow boundaries. It is this unpredictability which produces ghettos and "pseudo blocks" of habitation which are poorly connected to (or integrated with) cities. This is typical in modern industrial cities where spatial zoning, resulting from modern urbanism and newly structured economies, existed. This also contributed to an increase in hierarchical planning with each activity or occupation assigned a specific place thereby creating contrasts between the well-equipped center and the ill-equipped periphery (SALGADO, 1998, p. 40). This pattern can be identified in large post-war 2 cities, mainly in the 70s, such as New York and Chicago and was due to a wide range of factors such as the development of transport, internationalization of the economy, and the fragmentation of social structures which eventually influenced urban spaces and structures.

Moving into the contemporary moment one sees that all these urban spaces in cities of the post-modern era are linked by a curious pattern. These spaces, while on the surface may appear to be well designed and ‘modern’, are on closer inspection alive

---

Image 3 - Plug in City by Archigram
with conflicts which highlight the failure of their hierarchical, homogenous design. These inadequacies became more apparent over longer periods of time as people interacted within and reacted to these spaces. (Lefebvre 2006, 84). Thus a new perception of the time, design and structure of cities developed with the passage of time. A breakaway from sameness in design is very important to keep urban spaces alive and fresh. The repetition of the: ‘street, block, street, block...’ scenario is unfeasible. It is difficult for a person within a large scale, urban landscape to find a sense of understanding and meaning in a place with such a stifling design. If someone stands in a big city of this century, in certain places the elements of the cityscape become repetitive, dominated by the underlying rational sense of zones and standardization, such as the corridor of glass buildings, which only trap and choke the person on streets which often lack a feeling of identity because everything is suffocated by sameness and pattern.

The underlying problem with this design, is of course the lack of consideration it has for the human subject and the subordination of the human being to the grand utopian vision. A focus on the needs of the individual subject is necessary to balance and humanize the utopian impulse.

A New Spatiality

Since architecture seeks to adapt space for man's needs, then when those needs change over time it is of course necessary for architecture and buildings to adapt to the new reality. Resultantly, any rigid hierarchy of design will be problematic if (and when) it needs to be modified to cater for the changing needs of a population. In addition, it is important for us to understand some of the changes in society in the era of networks and computers and their relationship with the new ways of working and living in order to create more possibilities of how this discipline should be directed to meet the needs of man in this century.

Also, in the context of technological and societal development, and the changes it brings, it is important that architects seek new forms of architecture and urban design which deal with these factors as the crisis of energy resources, and the rapid growth of large cities continues. With this development came both challenges and new opportunities for architects to reinterpret the city and offer better solutions for urban space design. Societal change has always been a source of innovation in architecture. For example, in the early twentieth century, Le Corbusier was inspired by this new urban landscape to develop his utopian visions of cities dominated by skyscrapers as an attempt to organize the modern cities. This idea was further developed by other architects such as Lloyd Wright (1956) (Image 4) and Soleri (1980) (Image 5) (Wong 2001, 3). Their work demonstrates the great interest at the time in this type of development as a way of contributing to urban landscapes (even though these early innovators focused mostly on more pragmatic, concrete issues as opposed to abstract, social ones).

With globalization, development and technological innovation comes the creation of a new spatiality of urban centers. However, this new spatiality cannot be understood as either the end of the urban areas or the creation of new regions characterized by high technology. Neither can it be simplistically understood as creating automation centers and manufacturing with low costs in the periphery. A more accurate understanding of this new spatiality can be reached by examining its source, which is information networks. The development of electronic communication networks allows for a dissociation between spatial proximity and performing tasks of day-to-day life, such as work, shopping, entertainment, health and education. (Castells 2010, 394).

The relationship between distance and function has changed radically with the advent new technologies and communication networks. In the past, one could spend months waiting to receive information from some areas of the globe but these distances have been reduced by technological development. As the last decades have shown, information technology will continue to become increasingly important in the world. We are in a time when real-time communication to every corner of the Earth is possible, breaking down the barriers of distances, making the world into the clichéd Global Village, made up of several communication networks. In cities it is possible to identify this pattern. Soon, perhaps no one will need to leave their home and go through the city to work, spending hours in traffic. People are likely to work from home (or anywhere else of their choosing). As explained by Duarte, 2012 and Castells, 2010 there is a crisis in the space matrix. The spaces of urban centers have begun to loose their relationship with their surroundings. Citizens of cities will be more connected to the world than to their neighbors. Space has become fragmented in a new hierarchy. An individual can feel part of a global structure of networks, but lose their sense of belonging within the city or area where they live as spaces in cities lose their relationship with each other.
This tendency to create everything in networks does not necessarily mean the end of physical spaces in cities. Offices, shopping centers and banks will continue to exist as they do now but with more and more online services being offered. Banking services will not disappear and there will still be centers for assistance to clients. We can take hospitals as another example of space dependent structures. Much of the technology and resources from which they are composed must continue to exist within actual physical spaces, spaces which usually also involve a whole structure around them, such as clinics, laboratories and specialized pharmacies (Castells, 2010, 396-397).

It is important in urban design that professionals begin to address these issues now and explore alternatives in order to make the future life of cities something which will have value and quality. It’s necessary to find a new model which can override the chaos that is increasingly witnessed in large cities, due to both accelerated urban expansion and climate/energy changes.

As we can see, new information technologies have an impact on cities, transforming the layout of urban forms and creating new patterns of interactivity within city spaces. The result is a fluid web that forms a network, a virtual space of flow (Castells, 2010, 398). With this new configuration the reasons why people navigate urban space will change as journeys which were once necessary, will become optional. This phenomenon can already be seen developing in our era, in which the advent of information technology has allowed many to work from home.

The need of people to move through the city depends on how well the urban environment is organized and on the activities which happen within this space. With the rapid growth of urban centers in the last decades and the intense use of individual means of transport comes the disintegration of the main function of cities: ease of mobility and a high living standard. This leads to conflicts and chaos in transportation and spiraling economic costs in order to facilitate the flow of people (Duarte, 2012).

It is important to create the conditions for reducing vehicular traffic and control the process of urban expansion. Discouraging disorderly growth (Image 6), favoring urban density, taking into account the various functions that occur in the city are all necessary. This should also discourage the overspecialization of urban areas into specific zones which generates problematic commuting patterns. It is important to promote the creation of non-specific, multi-functional urban areas with diversified economies that contribute to urban sustainability.

The problems which come through the excessive use of vehicular transport reduce the quality of life in cities, generating restrictions on mobility and accessibility. In large urban centers the area used to circulate, park, sell and maintain vehicles occupies around 50% of the urban space, and in many cases cars start to clutter up sidewalks, parks and green areas (Duarte, 2012). Moreover, in cities with large displacement routes and different modes of transport, 44% of daily trips are made on foot and this percentage is even higher in smaller cities (Vasconcellos, 2002, apud DUARTE, 2012). Therefore by concentrating people in one area and providing all of their daily necessities in that area, one can reduce the use of vehicles and thus lower spending on transport infrastructure, reduce both pollution (including greenhouse gases) and inter-city travel time. This strategy would have an immediate and lasting impact on the quality of city life and consequently on the people who live there.

### Energy Resources and Contemporary Cities

Another problem that will influence the pattern of cities are energy resources. As this is a new problem there have been no long term studies to discover the measures to be taken, and only in the last decades of the twentieth century have policies that actually take the depletion of fuel into account been done. The world’s major energy resource is fossil-fuel. From 1950 to 1999, the increase in the exportation of this resource has increased fivefold, from 1.7 billion to 8 billion tons; an increase of huge proportions considering the time period is only 50 years (Droege, 2001, 531-532).

Non-renewable energy sources represent approximately 85% of all energy consumed in the world. A worrying fact about this is that the predictions are that these sources will end in this century. It is estimated that oil will run out by 2050, natural gas by 2040 and Uranium by mid-2030 (Image 7) (Droege 2001, 533). Even with recent discoveries of new energy sources (such as shale gas in the USA and new sources of oil in Pre-Sal in Brazil among others) it is logical to think that sooner or later non-renewable sources will end and the world should be prepared for this fact.

Modern cities have multiplied and expanded thanks to the availability of fossil fuels. They have become dependent on this resource and increasingly rely on energy. The very logic of global growth
and expansion is based on the availability of fuel in large quantities and at low values. Most of the structures of large cities is based on these sources—such as industry and transport. Major cities in the 19th and 20th centuries such as Manchester were able to expand rapidly due to the availability of such resources as coal which was used to facilitate the expansion of industry (Image 8). Urban centers in the United States and Soviet Union in post-World War II displayed a similar pattern of expansion with the widespread use of energy products from petroleum (Image 9). Contemporary urban areas may be referred to as ‘fossil cities’. The processes of urbanization generally relied on the availability of low-cost energy to be applied to all infrastructure such as transportation, construction, lighting and telecommunications, which made them vulnerable in the event of a decline in these resources. The only viable option to ensure the survival of urban civilizations is to investment in renewable energy sources such as solar, wind, geothermal in large scale (Droege 2001, 534). However, natural resources are not readily available to replace the non-renewable resources upon which we have grown so reliant. So we have to rethink urban design or the ‘fossil cities’ of today will become the dinosaurs of tomorrow, destined to extinction.

It is crucial to reinvent the ways of living in urban environments. As initially discussed by architects from the last century (such as Le Corbusier whom I already mentioned) skyscrapers in compact areas are a way of making urban spaces more efficient. The skyscraper can offer solutions for urban sprawl in cities, but it is necessary to change and reinterpret the design. As discussed by Yeang (2002, 12-13), we must begin to view skyscrapers as extensions of the city which extend from the ground to the sky. The design of all spaces both internal and external is necessary. Furthermore taking the needs of both the current and future users of these spaces into account is essential. Skyscrapers are efficient in terms of having a rational use of materials, use of natural lighting, land use, distribution of internal flows, etc. (Maunsell, 2002). However, we cannot believe that grouping people in a building is the best solution for people in cities. It is only a rationalization of space, and it is not offering quality occupation in cities. Examples, like Building Housing in the US, which contributed to poor quality of life, marginalization and misuse of public areas. As explained by Schipporeit (2011), skyscrapers do not solve social problems as only offering compartmentalized places to live without providing places for all human life activities half a solution at best. Furthermore, another problem related with skyscrapers is a lack of a relationship between the building and the city which causes infrastructural problems in cities due to increased demand for the same service in a smaller area. Not having good control over planning can be detrimental to urban development.

**Vertical City**

Having discussed some of the contemporary problems with urban design, I will now look at the skyscraper model of urban development as a possible solution to some of these issues. Since the first skyscrapers in the world arose, the trend in urban planning has remained basically the same with only minor variations on the same underlying model. This is a shame since with modifications to this original design (by changing from the current pattern of floor over floor to something which takes account of all aspects of human needs, not merely rationalize and optimize the use spaces) a more suitable model could be created. These modifications have now been made possible with changing technologies and thus both current and future problems, such as those which arise from population growth (Graphic 1) and scarcity of resources could be addressed. But it is vital to reinterpret the skyscraper, not just as a building but as a vertical city that could enable a new ‘life in the sky’ which moves beyond the rationalist models and patterns of the past and takes the individual as a

---

*Image 8 - Manchester*

*Image 9 - Los Angeles - 1960*

*Graphic 1 - Population Growth*
social being into consideration and not merely the individual as a rational being. Moving from the current pattern of skyscraper, formed by floor over floor with a single vertical link between them to something that has focused on human life and human needs. Something more organic, which offers quality of life as a city on the ground, but in a new reference and perspective.

One could argue that the experience most commonly shared by those inhabiting a city is a feeling of tension. This tension is caused by the constraints imposed upon those within the urban landscape by the urban design and by necessity. Standing on a street between tall, imposing buildings gives one a very different experience of space than how one feels in a more open vista. Moving outside this urban enclosure allows one to start seeing the city from a new point of view and escape this tension. This more open space can be in the form of a park, a beach or on top of a tower. Changes in scale allow for a sense of relief from such tension and give rise to a clearer understanding of one’s surroundings.

Often, the distance from the surrounding suburban residential areas to the city center is so large that the space between these areas becomes for many commuters a kind of limbo which is bereft of identity or meaning; a space travelled through on public transport and largely ignored. The spaces and places in between begin to seem like irrelevant barriers between the city and surrounding residents. Usually people go through these spaces automatically without consideration for the space through which they are passing (Image 10 and 11).

A new kind of occupation of the city, like a vertical city is perfect for some of the most important challenges of the future. For mobility, because it reduces car displacement, controls the process of ex-

Image 10 - Displacement in a big city
panding the city's perimeter, keeps the largest number of people in one area, and promotes the diverse use of land (Image 12). Furthermore, as explained by Maunsell (2002, 8) skyscrapers also have the positive point of maximizing the use of resources and infrastructure. In other words, the per capita value of each square meter built in a tall building will be much lower than that of a predominantly horizontal building.

As the most common method of locomotion in the city is walking, the vertical city with all its services concentrated, will be more economical than horizontal transport. People will be able to move even further through urban areas in the new society, but this movement will not be from necessity (as we have today such as the necessity to travel to work) but rather as a result of a new freedom. The vertical city is also more in line with the flexible nature of time, because everything is well within reach of residents in the same place. Therefore, they have less need to leave the structure. Moreover when one leaves, it will be through an environment of lower population density than seen today in big cities, and also to a wider variety of destinations.

Today the notion of living in the sky is imagined by the common person as being in a vertical scraper, where one goes up to one place of residence or place of business and then goes back down. We do not consider the possibility that one could not only travel upwards but could in fact remain on this elevated plane for much of one’s life. A new occupation of the sky, in order to create a new way to interpret and see the city and to create an environment that is conducive to living in large urban centers, without compromising the identity of either the place or quality of life. Sometimes our paths through the cities are responsible for creating the identity of the urban space. It is through the links between one place and another that we will experience the subjective ‘boundaries’ of the urban environment, from our individual points of view.

A new way of occupying the urban space, such as that offered by the vertical city concept, may lead to new experiences of human space. The vertical city model offers an escape from the current pattern of hierarchies imposed on urban spaces and an alternative to the traditional model which can provide a new experience of city life. The vertical city is not a fragmented vision, but rather people will be able to see all the vertical city's structures as part of a unique system, without giving up the idea of living in a big city.

Conclusion

In conclusion, in this paper I have discussed how the utopian impulse has manifested itself within the field of architecture and have argued that it is necessary to reinterpret this vision for the new century. I have also discussed the various challenges in this century which face urban planners and designers today such as environmental challenges (posed by pollution and urban sprawl); energy issues (caused by the depletion of fossil fuels and the consequent issues around mobility within cities) and finally social issues which impact on quality of life. The possibility of preserving the overall structure of the city while designing a new way of occupying the space and thereby creating a new spatial identity was put forward.
New York's favorite young artist talks about his art and his time at Roux Design.
Location

Sao Paulo City

Vertical city

2008

2030
Two sides of the Brazilian urban centers: buildings in new and low densely populated areas. On the right side, deterioration of the central areas which have lost their functions.
Image 21 - Site Plan
Creation of New Stations and Subway Lines

Vertical City

Train

Subway

Express Bus

Image 23 - Transport
The temperature difference between the floor and the top is 10 degrees. So, it would be possible to use the air with different temperatures to reduce spending on air conditioning.

There are three energy sources:
- Solar Energy;
- Wind Energy;
- And also energy generated from the movement of the structure
Image 25 - Sao Paulo Downtown - Before

Living in the Sky
Living in the Sky

Maintenance Floors

Health Care

Shopping Area

Offices

Sports/recreation

Education

Apartments
Living in the Sky
pipes for water, sewage and energy

Stairs

Elevator
pipes for water, sewage and energy
Image 34 - Photographs of the models
References


Kean Yeang, Reinventing the Skyscraper: A vertical Theory about urban Design (Chichester: Wiley Academy, 2002).


Images References


Fig.1. Ebenezer Howard, Garden City. 1898. https://scodpub.wordpress.com/2011/03/01/garden-cities-by-ebenezer-howard (accessed may 02, 2015).

Fig.2. Le Corbusier, La Ville Hadieusec. 1924. 1021x840 pixels. Available from: Herança Cultural, http://www.herancacultural.com.br/blog/2013/10/ville-radieuse-le-corbusier (accessed may 02, 2015).


* Other Images produced by the author.