Harold J. Kauffman

Editor

Urbanization

Global Trends, Role of Climate Change and Effects on Biodiversity

NOVA

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GLOBAL TRENDS, ROLE OF CLIMATE CHANGE AND EFFECTS ON BIODIVERSITY

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PREFACE

Urbanization is caused by migration. However, an essential difference exists between migration in the past and that in the present. This book focuses on several topics that include a comparison between an informational city and a smart city; urbanization and human impact on biodiversity in Water's Edge Public Spaces (WEPS); a mathematical-modeling approach to urbanization caused by migration; sustaining urbanization in a developing economy; and urbanization and cardiomyopathy vulnerability in an African male cohort.

Chapter 1 – At the end of the twentieth century, with the emergence of communication technologies in urban space, new towns begin to emerge seeking a new way of living through paradigms of flexibility, sustainability, diversity, innovation. These were some of the characteristics of Celebration City, designed and built by Disney Co. and facing a global, differentiated and high income audience, which wished and accepted the values proposed in the design of houses and streets in the urban idealized behavior. Today Celebration City is an urban reality and a model for informational cities. In the second decade of this century, Songdo in South Korea which is under construction entering the Yellow Sea, is a model for Smart and Global Cities. If the American City had proposed to ensure global flow spaces with local spaces equipped with high technology, in the Asian City the relationship between global and local is an endogenous datum somewhat inherent in urban phenomenology, i.e., networks exist because the material space thus demands, and not to take the place of the latter one. The two cities studied show trends that drive the global urban proposals, seeking solutions for the present-future in a world where cities are the main environment and biodiversity gains extended meanings.

Chapter 2 – Public spaces along revitalized urban waterfronts, known as Water's Edge Public Spaces (WEPS), are facing the consequences of rapid urbanization and urban transformation in Asian and Pacific contexts. In the Australian context, these spaces are increasingly being upgraded to meet the requirements of a changing demography and the needs of this slowly growing population. Increasing use of public spaces requires management authorities to investigate considerate design techniques and to make a long term strategic commitment to urban renewal, to enable appropriate future use. To manage the process of urban renewal, transformation and growth, cities need to be designed and retrofitted to be more environmentally friendly, for example, to decarbonise their energy supply and minimise waste in all forms, to protect, sustain and enhance urban biodiversity and to enable ecosystems to flourish. This will provide inhabitants with the basic elements of human well-being in a resource- and energy-efficient manner. Public spaces play a key role in this transformation process, and over time will be crucial to the success of cities.

The impacts of urbanisation are apparent through the study of developed inner-city waterfronts, riverfronts, and ports, especially in Sydney, Hong Kong and Singapore. Locally, the impacts of demographic change and low level population growth are of a different nature and type in the Australian spaces studied. Besides social and economic impacts, the impacts of urbanization are environmental, ecological and biological, and becoming visible in the study of predator-prey models that analyze population numbers over time. To ensure the maintenance and flourishing of flora and fauna, we need a well-considered design process that uses the holistic principles of green urbanism.

This chapter examines biodiversity within three cities(that are being investigated as part of wider research) to determine the forms of design that are most conducive to change by allowing varied species to thrive and maintaining healthy ecological systems within new and existing urban habitats. It is assumed that a species' natural environment is its most favourable habitat, but, in an urbanizing milieu, adaptation that is assisted through design evolution and development that allows flexibility and change, while maintaining stable population states is sought. The variables and parameters to enable biodiversity maintenance and reestablishment should be considered. As a conclusion, this chapter provides key design considerations to preserve biodiversity within Water's Edge Public Spaces in the Asia-Pacific region.

Chapter 3 – Urbanization is caused by migration. However, an essential difference exists between migration in the past and that in the present. Hotelling constructed a mathematical model which can accurately describe the

former case. In quantitative sociodynamics, Weidlich and Haag constructed a mathematical model which can accurately describe the latter case. The behaviors of these mathematical models are very different from each other, and the behavioral difference expresses the essential difference between migration in the past and that in the present. By comparing the mathematical models, in the present research the authors prove that the essential difference is caused by the difference between the cost of movement in the past and that in the present.

Chapter 4 – This study models the relationship involving globalization, urbanization, and sustainable development (SD) where SD is defined further as a function of sustainable urbanization. It repositions culture as one of the pillars of SD, underscores SD's operational definition as "complementarity" as against "uncompromising-ness" of efforts to meet the present and the future needs, and advances a performance-based SD index. This study delineates between the two terms "developing economies" and "emerging economies" in favor of the former. Accordingly, it adopts Nigeria as a case study of a developing economy grappling with urbanization (largely due to rural-urban divide). Nigeria is the fastest urbanizing country in Africa based on its population. Conversely, 80% of Nigeria's 50% urban population lives in slums, attributable to Nigeria's housing deficit of over 16 million units, which is increasing annually. Identifying housing as a menace to as well as an indicator of Nigeria's urbanization, this study summarizes the failure of prior efforts on housing in Nigeria into not being CLASS (culturally-acceptable, livable, affordable, sociable, and scalable) as well as not being SMART (specific, measurable, achievable, relevant, and time-bound). Premised on a SMART CLASS solution, it proposes an open-loop urbanization model based on decentralized developments in Nigeria as against the prevailing focus on the capital states. With the increasing volume of foreign direct investment (FDI) in Nigeria and concerns of the benefits thereof, this study also investigates the role of foreign players in sustaining urbanization in Nigeria. Specifically, it underscores China's significant role as a development agent in Nigeria, its leading role in ISO standards on quality management and environmental management, and its exemplary role as the fastest urbanizing country in the world.

Chapter 5 – *Objective:* Vulnerability for hypertension in Africans increases when they are exposed to psychosocial stress or urbanization. Inevitable cultural and lifestyle changes may impact on cardiomyopathy risk markers. Therefore, the authors aimed to assess the relationship between blood pressure, silent ischemia, glycated hemoglobin (HbA1c), QTc dispersion and

ECG Cornell Product left ventricular hypertrophy (LVH) in a cohort of African men.

Methods: The authors included 100 Caucasian and 82 African men, aged 25-60 years, from the Sympathetic activity and Ambulatory Blood Pressure in Africans (SABPA) Study. HbA1c as well as ambulatory blood pressure (BP) and -silent ischemia values were evaluated, compared and correlated. QTc dispersion and Cornell product data were obtained via 12-lead ECG.

Results: African men revealed ($p \leq 0.05$) pre-diabetic status with a mean HbA1c (> 6%). In addition, they revealed increased ambulatory BP, silent ischemia, QTc and LVH values compared to the Caucasian men. In forward stepwise regression analyses [Adjusted R^2 for model, 0.33], ambulatory systolic BP (0.53, 95% CI 0.12 to 0.94) and silent ischemia (0.26, 95% CI 0.06 to 0.46) were associated with LVH in African men.

Conclusion: Systolic BP and silent ischemia were associated with LVH in a cohort of African men. Increased cardiovascular disease risk markers may reveal progressing cardiomyopathy.

CONTENTS

Chapter 1

WALT DISNEY'S CELEBRATION CITY AND SONGDO/SOUTH KOREA: COMPARISON BETWEEN INFORMATIONAL CITY AND SMART CITY, TWO URBAN PARADIGMS FOR THE WORLD

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ABSTRACT

At the end of the twentieth century, with the emergence of communication technologies in urban space, new towns begin to emerge seeking a new way of living through paradigms of flexibility, sustainability, diversity, innovation. These were some of the characteristics of Celebration City, designed and built by Disney Co. and facing a global, differentiated and high income audience, which wished and accepted the values proposed in the design of houses and streets in the urban idealized behavior. Today Celebration City is an urban reality and a model for informational cities. In the second decade of this century, Songdo in South Korea which is under construction entering the Yellow Sea, is a model for Smart and Global Cities. If the American City had proposed to ensure global flow spaces with local spaces equipped with

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high technology, in the Asian City the relationship between global and local is an endogenous datum somewhat inherent in urban phenomenology, i.e., networks exist because the material space thus demands, and not to take the place of the latter one. The two cities studied show trends that drive the global urban proposals, seeking solutions for the present-future in a world where cities are the main environment and biodiversity gains extended meanings.

INTRODUCTION

Celebration – The Disney City: Technology and Environment

You Don't Have to live here to love it.

When getting to Celebration, the first impression a visitor has is the "atmosphere of an old "unitedstatian city". From the Celebration Realty Inc, an interesting building, with a belvedere from which it is possible to have a full view of the plane extension of the city. This is the experience of a tourist visiting Orlando and the accomplishments of Disney Co.

The *Celebration Avenue* looks endless for someone who walks along it, and it is possible to see one of the houses whose design has some arches similar to the ones in the movie Cinderella. North Village is known for its *Model Homes*. These are houses designed to allure the ones who intend to live enjoying the advantages of technology. The prices are surprising. There are several models for different prices.

The houses, besides their architecture, they are all equipped with Intranet – a local net – and it is possible, for example, to attend the meeting of teachers or parents, at school, in the home computer. It is the future beyond the future, the convenience of an apparent stable reality, in which, living outside Celebration may be risky and unadvisable. Thus, it is impossible not to perceive that the fantasy atmosphere herein is similar to the parks.

Back to Town Center, the visitor can observe – along the wide avenues – that there is no car pollution in this city which insistently tries to present itself as an option for man to live harmonically integrated to landscape. By the way, the landscape here is absolutely cohesive concerning green areas and there is also a golf court, completing the scenery, which used to be swampy. On the way we also found a private club for residents.

At the Town Center bank, the folder given by the estate agent read: "You Don't Have to live here to love it".

The city has been designed to stand for a novelty, it was fully planned, in order to look traditional and at the same time, modern and functional, concerning all possible urban aspects. Its infrastructure – which is differentiated from most American cities – shows it clearly. Demographically speaking, there is another aspect that must be taken into account: The original project was estimated for 20,000 inhabitants occupying 8,000 houses by the end of 10 years (begun in 1995), however, according to 2010 Census[1], the number of inhabitants was 7,427 people, distributed in 3,063 houses.

The first stages of building included: Celebration Village, West Village and Lake Evalyn with 500 home sites, including 76 townhomes, and nearly 700 condominiums. The second stage was North Village, with more than 300 home sites and 300 condominiums, followed by South Village, with over 600 home sites and townhomes and nearly 500 condominiums. Following was East Village and Aquila Reserve with a combined 500 homes and townhomes and 70 condominiums. Artisan Park, Celebration's last residential phase to date, is a 160-acre village built by St. Joe Company and contains more than 600 homes and condominiums, as shown at the website of Celebration[2].

Nevertheless, the uppermost question clearly put is: 'Why did Disney Co. invest in a 4,900-acre area real city, instead of a park? As a matter of fact, it is said that Walt Disney himself had designed, in the 60's, a city for the employees of the parks, based on Victor Gruel's urban proposals; however, his idea ended up being changed to *Epcot Center.*

Thus, the present Disney Co. would be "making its founder's dreams come true"… After all – to carry out this project – *The Celebration Company* counts on strategic partnership with different companies: ATandT, which is responsible for the communication system, computer and telephone equipment for the shops, banks and houses; the Florida Hospital, where there is the *Celebration Health,* which encompasses several medical-hospital services, including the *Fitness Center,* a rehabilitation center, health plans, behavior research center, odontological center, among others; GE Company, with its wide set of electrical devices and light support for houses and hospitals; the *Honeywell Home Control,* which offers systems and services related to comfort, protection and economy for houses (alarm and ventilation systems etc.); *Sun Trust,* a bank service; the *Stetson University,* responsible for the *Celebration School,* a public school for children and teenagers.

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[1] US. CENSUS 2010. [2013, October, 15]. [Celebration City's residents] Available from: URL: http://www.census.gov/2010census/.

[2] CELEBRATION. [2013, October, 14]. Available from: URL: http://www.celebration.fl.us/ town-info/community-profile/.

Besides that, it is also responsible for *The Celebration Teaching Academy,* which develops extension and specialization courses for professors and others who may be interested. The *Celebration Hotel,* with 105 rooms and 10 special rooms – 1920 style, designed by *Owner and Developer* – which was opened.

We have to accept that – even a simple bench in a square, close to an old water fountain – the city impresses us strongly! It can be said in relation to many aspects, because the project is detailed and, thus, we are touched by the magic of the place. In 1998, Mrs. Elaine McHenry, a Brazilian who lives in the city, was interviewed; she said a symptomatic phrase:

> This city was Walt Disney's great dream. Today's Disney only aims money; Walt Disney was a visionary. We live in a paradise, but nothing here relates to a paradise. It is beautiful, well preserved, clean, there is even a police car driving around. Just a little is left from Walt Disney's idea; most of the employees of the park live in *Kissimmee or Osceola County,* in the surroundings of Celebration, because of the lower cost of living, rent and the price of the square meter in the estate market.

But living in the Disney world implies its proper rules. By the end of the 1990 decade, as the city still did not have a clear identity, people used to arrive, expecting to find "their" city. The same resident also said: "As it is something new, each one who came had idealized a city, that is, his/her city. But there is an important detail; it is necessary to adapt to its rules". These rules are based upon four principles that direct the community living[3]:

> Sense of Place
> All people have a universal need for stimulating experiences and social interaction. Providing a variety of unique "places" throughout Celebration, where this type of activity would continually occur, was an important Cornerstone behind its creation. "Places" take on many forms at Celebration.
>
> Focus on Technology
> From the beginning, Celebration has embraced technology as an essential means of connecting people. Today, every resident has access to a Celebration email address and an electronic identification card. To accommodate future advancements, Celebration is prepared to evolve

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[3] CELEBRATION. [2013, October, 14]. Available from: URL: http://www.celebration.fl.us/town-info/community-profile/.

with technology as it changes, helping to ensure that technology will continue to do exactly what it is intended, to bring people together.

Focus on Education

Celebration has placed education at the heart of its vision in the belief that lifelong learning provides an essential key to higher quality life. In 1995 education began at The Learning Academy, a public education system recognized by the Florida Department of Education with a 2000-2001 Five Star School Award. Currently educational opportunities include KinderCare, a Montessori School, Stetson University Center at Celebration, Celebration K-8 and Celebration High School.

All the residents corroborate the quality of living and schooling: "I like living in Celebration, it is like being on vacation, you can walk, go Down Town, to the restaurant. I moved to Celebration because of the school, which is different. Every student is demanded to present a research on the subject. At the end of it, the result is: done or not done". That is what Mrs. Elaine McHenry said, when expressing her opinion.

Besides that, in the beginning of the project, there was a manual named *Frequently Asked Questions, compiled by Kenny Cottrell*[4], in which we find principles of adequate conviviality, besides a compulsory approval to "radical" changes in the houses. These are some examples:

Every resident who is an owner will be a member of the Celebration Residential Owner Association, and will have to pay for the Association maintenance fare. This money will be used to pay for maintenance services, including *Lakeside Park* and other public areas within its jurisdiction. The Association will keep the landscape and grass in front of the houses, except in *Townhomes*. Private landscape and grass areas will not be kept by the Association.

All the owners of houses located inside the Celebration Community Development District (CCDD) will have to pay yearly fares, in order to cover the cost of building and maintenance of public areas under its control. The fares will be paid through tax invoices in Osceola County. Based on this evaluation, the cost of living in Celebration is the same as in any high level community, provided with similar services. There will be some restrictions, according to the Convention, Restriction and

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[4] Frequently Asked Questions, compiled by Kenny Cottrell. Acesso em 03.05.2000. O site http:// www.home.ptd.net/~glisman/cele2.htm. Is, now, unavailable.

Condition Declaration. Approving styles and aesthetic matters in Celebration is an attribute to both *Celebration Co.* and the Association.

The official regulation for the use of public spaces was published in October 2013. The headlines of the Celebration News (2013, p.7) read:

> The Celebration Residential Owners - Association (CROA) Board approved the following resolution to the current ID Badge policy: A passholder may bring no more than four (4) non-resident guests outside of their immediate family on any given occasion unless under a scheduled event, private party, etc. The passholder must remain with the guest(s) at all times. In order to avoid conflicts or disappointments please contact Town Hall if you are having a party in one of the parks or playgrounds[5]

Although this city has been well designed in the urban, architectural and technological aspects, so far it has not been fully accepted by the American society. In our research on this matter, some articles show how unsatisfied many people were concerning this enterprise[6].

> Celebration must be considered more a corporate-run subsidiary than a normal city: No municipal power, the association for no estate owner and no free trade; besides a "Regulation Standard Book", strict and related to maintenance and care of the residents' "property". In most of the cases, a city like this is called dictatorship, at Disney it is Celebration. The general hypothesis is that the corporation will make the city, reasonably more efficient, and they think that the representative powers will offer a better living atmosphere. Disney could perceive the economic moment of high income families, who were a little nostalgic and also greatly unsatisfied in their communities. Thus, it is the right moment and the perfect place to trade your products.

It is visible that everything in Celebration has the aspect of a clean hygienic place; its parks are well preserved, visually beautiful and organized, all of them created for Magic Moments. The kind of moment that Walt Disney proposed, which should be enjoyed – at least once – by everyone who is used to visit green leisure areas like this.

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[5] CELEBRATION NEWS. [2013, October, 20]. Available from: URL: http://www.celebration. fl.us/wp-content/uploads/2013/10/CELEBRATION-NEWS-OCT-2013-low.pdf.
[6] DISNEY'S UTOPIA. [2013, October, 20]. Available from: URL: http://www.123helpme. com/disneys-utopia-view.asp?id=164640.