

Model uncertainty in non-linear numerical analyses of slender reinforced concrete members

Original

Model uncertainty in non-linear numerical analyses of slender reinforced concrete members / Gino, D.; Castaldo, P.; Giordano, L.; Mancini, G.. - In: STRUCTURAL CONCRETE. - ISSN 1464-4177. - ELETTRONICO. - 22:2(2021), pp. 845-870. [10.1002/suco.202000600]

Availability:

This version is available at: 11583/2881492 since: 2021-04-28T19:19:05Z

Publisher:

Wiley-Blackwell

Published

DOI:10.1002/suco.202000600

Terms of use:

This article is made available under terms and conditions as specified in the corresponding bibliographic description in the repository

Publisher copyright

Wiley postprint/Author's Accepted Manuscript

This is the peer reviewed version of the above quoted article, which has been published in final form at <http://dx.doi.org/10.1002/suco.202000600>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions.

(Article begins on next page)

The Age of Urban Ageing

An overview of different social and spatial answers to ageing

Davide Vero

PhD candidate / *Architecture. History and Project*, Politecnico di Torino, Torino, Italy
davide.vero@polito.it | davidevero.yet@gmail.com

ABSTRACT:

The surveys of contemporary cities are focused on different aspects of the urban transformation, analyzing the city with different methods and perspectives. Within this array of studies and interpretations, little weight is given to the phenomenon of ageing and its relationship with the urban fabric and the social effects.

Statistical studies show that the population pyramids become kites in the future, through an increase of the elderly population - a situation of dependency that is common to many countries of Europe, Asia and America, and that affects various areas of research. Inside this context, ageing can become a measurement for urban transformation and its different directions. Therefore, the intent of the study is to reconstruct the landscape of ageing in the city through the answers, often antithetical, used to face the problem. The social and spatial segregation becomes a choice or a result of the absence of policies. On the one hand there are the sunny gated communities of America and Europe: the 'Sun Cities' and the 'Leisure Cities'. On the other hand, there is the isolation of those districts where often most senior citizens live.

The multifaceted and evolving framework of 'urban ageing' not only shows exclusion: neighborhoods for elders and neighborhoods populated by elders, but also a new and different interest on this theme.

Indeed, international institutions began working in an inclusive way, for example the World Health Organization launched in 2007 a guide for age-friendly cities. A practical framework to help cities develop their own age-friendly programs and initiatives around some domains: housing, public spaces, participation, community and transportation. The analysis of these models allows a critical research on the new approaches, tools and practices related to this topic. Furthermore, the main aim of the research is to highlight the challenges and the relationships between the design and the use of space for an ageing population.

KEYWORDS: *Aged, City Planning, Housing for the elders, Retirement communities, Segregation*

1 POPULATION AGEING

*The world population has been experiencing significant ageing—the process that results in rising proportions of older persons in the total population—since the mid-twentieth century. Ageing had started earlier in the more developed regions and was beginning to take place in some developing countries.*¹

The world is rapidly ageing: the number of people aged 60 and over as a proportion of the global population will double from 11% in 2006 to 22% by 2050. By then, there will be more elders than children (aged 0-14 years) in the population for the first time in human history.² (Figure 1)

According to United Nations Population Fund (2007), “developing countries are ageing at a much faster rate than developed countries: within five decades, just over 80% of the world’s older people will be living in developing countries compared with 60% in 2005. The older population is growing far more rapidly—in 2007 expanding by 2.6 percent per year—than the population as a whole—at 1.1 percent.”

At the same time, our world is a growing city and more elders are also living in cities. The proportion of the older adult population residing in cities in developed countries matches that of younger age groups at about 80%, and will rise at the same pace. In developing countries, however, the share of older people in urban communities will multiply 16 times from about 56 million in 1998 to over 908 million in 2050. By that time, older people will comprise one-fourth of the total urban population in less developed countries.

Population ageing has been described by demographers as the result of “two humanity’ greatest victories: increased longevity, or a victory over death and disease; and reduced birth rates, or a victory over unwanted childbearing”.³ The process of demographic transition had transformed the age structure of population, clearly shown in the changing geometry of demographic “pyramids” towards the form of a “kite”, where older people will represent an increasing portion of the raw population. The shift toward more aged populations is not the result of some inevitable evolutionary development in the human organism but rather a product of a process of societal “modernization”, possessing social, cultural, economical, political, and technological dimensions. The process of population ageing has gone hand in hand with that of urbanization and industrialization. Recent publications on ageing produced by the Population Division include the World Population Ageing series, offer many reports over the last decade. Firstly, population ageing is “unprecedented, a process without parallel in the history of humanity”. Secondly, it is “pervasive since it is affecting nearly all the countries of the world.” While the more developed nations possess a higher proportion of older persons in their population, this age group is growing more rapidly in the less developed regions. Thirdly, it is “profound, having major consequences and implications for all facets of human life,” including the economic, the social, and the political. Finally, “population ageing is enduring”, pointing out a process that is unlike to be reversed in the future.⁴

This framework of data and statistics shows the global phenomenon of ageing, both for its geographical dimensions (developed and developing countries) and for the areas affected: economy, society, and politics.

In addition, this recent transformation clearly acts on the way in which older people live and perceive urban space and the domestic one. This paper tries to go beyond the description of today’s demographic landscape. Moving from the recent studies on urban ageing, the intention is to highlight the current spatial answer to demographic change. In spite of a research merely based on results of the demographic shift or on the list of possible future challenges, the aim of the study is to highlight the

¹ United Nations, Department of Economic and Social Affairs, Population Division, *World Population Ageing 2013*, New York, 2013, p.1.

² World Health Organization, *Global age-friendly cities: a guide*, Geneva, 2007, pp. 3-4.

³ United Nations, Population Division, *Technical Meeting on Population Ageing and Living Arrangements of Older Persons*, New York, 2000, p. 2.

⁴ Deane Simpson, *Young-Old: Urban Utopias of an Aging Society*, Zürich, Lars Müller, 2015, pp. 20-25.

current situation, characterized by segregation and exclusive design strategies this paper presents two case studies; the first one is the planned retirement community of Sun City in Arizona, and the second is the urbanization of the Costa del Sol in Spain. In both cases the role of elders is central, as actors and as developers, for shaping a new lifestyle and new housing models. From this analysis emerges a new way to celebrate retirement (Simpson, 2015), with some recurrent topics and devices. At first glance, Sun City and the Costa del Sol appear as homogeneous zones for the urban and social fabric, but upon closer inspection is possible to find two different process which have led to these contemporary urban environment produced specifically for elderly people, centered around the theme of leisure and conceived as a product of the sociodemographic specialization.

Moreover the comparison points out a complex system of practices and differentiated economies, which have led to age-segregated forms of living.

The intention to frame contemporary communities for aged people requires a premise on terms at stake, or rather the need to introduce the words that in recent decades have accompanied the demographic phenomenon of ageing. In particular it is vocabulary related to this change, both for policies and for planning, first result of the institutionalization of the topic inside the society. Through the recurrence of certain terms and the change of their meaning, it is possible to find the roots of the current situation, the motivation of some design choices and future directions.

Finally the paper using these two case studies will attempt to outline the context of planning for senior citizens and the growing trend to exclude elders, more or less conscious, in spite of the practices and policies of social inclusion. The conclusion part of the work recovers the words of Lewis Mumford about older people: “not segregation but integration”⁵, in order to define a possible and more inclusive scenario for the elders, far from design prescription and guidebooks full of good practices.

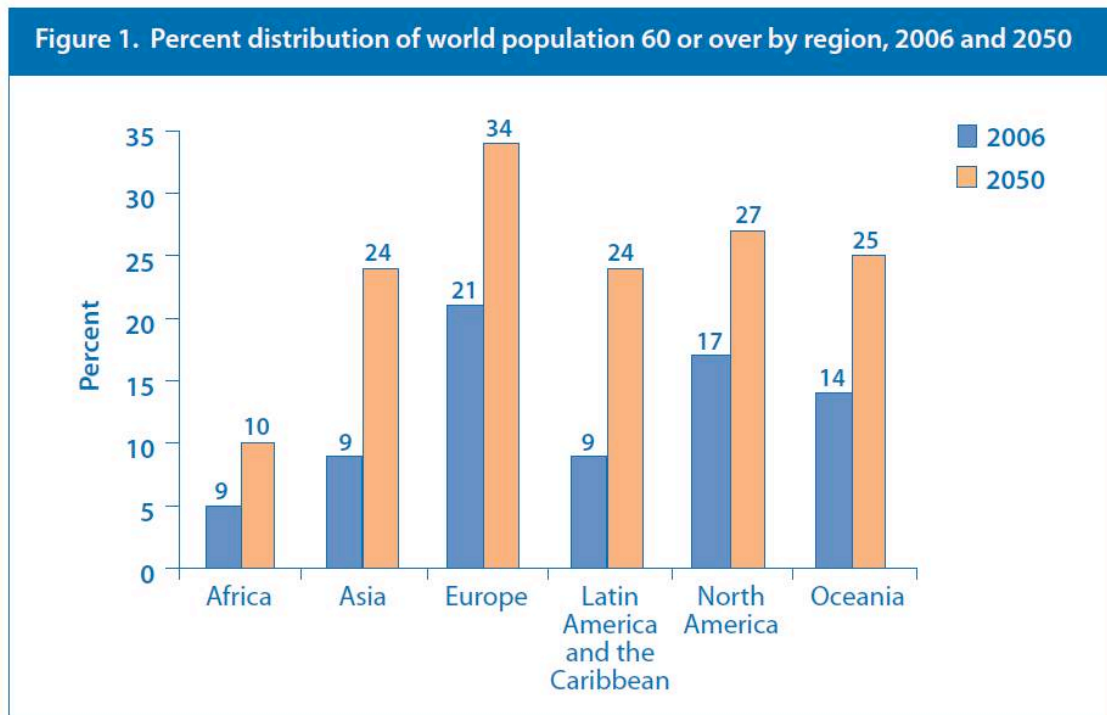


Figure 1. Source: United Nations Department of Economic and Social Affairs

⁵ Lewis Mumford, “For older people, not segregation but integration”, *Architectural record*, 1956 May, v. 119, p. 191-194.

2 VOCABULARY OF AGEING

Words give order, they qualify, evaluate. The use of words realizes constantly the operation of classification. Words describe, they are the forms of experience and the way to act on the world.⁶ The intention, through this brief vocabulary on ageing, is to explore the systems that organize a domain of particular significance. The meanings of new terms attempt to define the various facets of the demographic phenomenon and, in some cases, have a programmatic will.

2.1 The differentiated old

The word related to getting older is itself the source of a first geographic differentiation: “ageing” for the UK spelling and “aging” for US. This word introduces the description of a person that is getting older and the discrimination based on age: “ageism”. Secondly, it appears in another institutional classification: “active ageing”, the last attempt to include older people in decision-making and in urban life.

According to the World Health Organization (1999), “active ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. It applies both to individuals and population groups. Active ageing allows people to realize their potential for physical, social, and mental well-being throughout their life and to participate in society, while providing them with adequate protection, security and care when they need. The word “active” refers to a continuing participation in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active or to participate in the labor force. Older people who retire from work, who are ill or with disabilities can remain active contributors to their families, peers, communities and nations. Active ageing aims to extend healthy life expectancy and quality of life for all people as they age”.

Furthermore, the World Health Organization (2002) introduces a new concept: “age-friendly”, with the intent to shape a new context of “policies, services and structures related to the physical and social environment that are designed to support and enable older people to “age actively”- that is, to live in security, enjoying good health and continuing to participate fully in society”.

The previous terms are derived from earlier works of theorization and research. One of the most relevant works is the “Coming of Age” written by Simone de Beauvoir in 1970, where the writer presents an ethnological and historical work about old age, putting particular emphasis on the temporal dynamics and the daily living conditions of the elders. The framework of Simone de Beauvoir presents the elders as separate category, different and excluded. Additionally, the writer states that it is impossible to identify the time when old age begins, since there are not “rites of passage” that establish a new statute of life.⁷

Starting from this perspective and these needs it is possible to realize the differentiated understanding of the old and old age. Moreover, the mutations inside a population’s structure have materialized the context of a new subgroup defined as “Young-Old” or “Third Age”. As a new phase of life, the Third Age or Young-Old has been developed as a category to distinguish between at least two different types of older people that emerged in the postwar period. In this perspective, the traditional notion of “old age” bifurcates between the ailing and dependent “Old-Old” (the Fourth Age) and a new and rapidly expanding population of healthy and independent “Young-Old”.⁸ These two new terms were theorized by the American gerontologist Bernice Neugarten in 1974, who coined “Young-Old”, and by Peter Laslett, who elaborated the theory of “Third Age” in 1989.

According to Neugarten (1974), the Young-Old represent the majority of older individuals who are healthy, competent, and satisfied with their role in society. They remain vigorous, engage in a variety of

⁶ Christian Topalov, *L’aventure des mots de la ville*, Paris, Ed. Pierre Laffont, 2010, p. XVIII.

⁷ Simone de Beauvoir, *The Coming of Age*, G.P. Putnam, New York, 1972, p. 12.

⁸ Deane Simpson, *Young-Old: Urban Utopias of an Aging Society*, Zürich, Lars Müller, 2015, p. 12.

activities, and experience high levels of satisfaction with life. Whereas the Old-Old are the individuals who are frail, suffer from poor health, and are in need of medical attention, special care, and other forms of support.

In 1987 Peter Laslett developed the theory of a differentiated age, with the expression Third Age: "generally an era after retirement with health, vigor, and positive attitude, except for particular cases. The Third Age emerges only in developed countries with both aging population and excellent economic conditions".

The term Third Age comes from French universities, *les Universités du Troisième Âge* (the Universities of the Third Age), which since the 1970s have offered study opportunities to seniors relatively healthy and active.

2.2 The institution of retirement

The retirement does not just mean: "the point at which someone stops working", as defined in the Cambridge Academic Dictionary, but it represents a profound change.

According to Simpson (2015), the relatively recent historical emergence of the Young-Old in the more developed countries is a transformation that has two major components: one, the process of population ageing; the other lies in the process of supporting the increasing dominance of retirement as an institution.

The definition of retirement is important for two reasons; first, because the point at which someone stops working has corresponded for years with a new phase of life, that is when a retired person becomes an elder. Furthermore, through the history of retirement it is possible to observe the change of policy and the new state pension, which has changed the social acceptability and desirability of retirement.

Germany became the first nation in the world to introduce the state pension with Chancellor Otto Von Bismarck's Old Age and Disability Insurance Bill of 1889, when the life expectancy for the average Prussian was 45 years. When first implemented, it would offer pensions to workers over 70 years, an age limit that would be later reduced to 65 years, thereafter becoming the most accepted age for retirement internationally.

There were many countries that followed the work done by Germany for state-supported pension, such as Denmark (1981), Italy (1898), France (1905), Australia (1908), United Kingdom (1909), and Sweden (1913).⁹ While 1935 marks the founding date of state pension in the US through similar legislation: the 1935 US Social Security Act, at the time when the average life expectancy was 62 years.

The intention of the Social Security Act was not only the provision of a safety net for those 65 and older, and therefore deemed too old to work, but it was also meant to shift older workers, supposedly less able to keep up with technological change in industrial economy, out of the workforce to vacate positions for younger workers and therefore partially alleviate the massive unemployment in the Great Depression.

Historians of retirement and sociologists point out that retirement was not always viewed as desirable and it remained an unpopular institution. Retirement was commonly perceived, socially, as an embarrassing phase of obsolescence, marked by corresponding drop in an individual's self-esteem and often stigmatized. In order to challenge exclusion and negative attitudes a sociological theory was developed that had the role of supporting the relevance of retirement and, promoted a positive image of retirement in the popular media. According to William Graebner in *The History of Retirement* (1980), retirement was presented as "the joy of being at the ball park on a weekday afternoon". Along this direction the effort was to teach people, starting at age 50, to enjoy leisure. Likewise, it is possible to look at the birth of the first retirement communities, such as Youngtown (Arizona, 1955) and Sun City (Arizona, 1960), as spatial results of the growing positive reception of retirement after the Second World War. These new forms of living were the effect of a new concept of old age, which had roots in the *leisure theory* (Graebner, 1980) and in the *disengagement theory* (Cumming, 1961). The changed scenario produced not only a new market and new typologies, but a real lifestyle. The choice of the case studies of Sun City and the Costa del Sol, originates from these considerations.

⁹ *Ibidem*, p. 27.

3 SUN CITY, ARIZONA (US)

Today retirement communities and developments are quite common, in the US only there are more than 55. Senior-only communities and active-adult retirement resorts stretch from coast to coast, each one boasting different benefits appealing to different states and interests. But Sun City was the first. It not only launched an industry, but it set the standard for others to follow.¹⁰ The role of the first retirement community goes to Youngstown (Arizona, 1955), but Sun City (Arizona, 1960) is the first master-planned community for active retirement by the Del E. Webb Corporation.

The idea was to go beyond building a collection of homes. Sun City would offer everything a retiree would need to make his or her “golden years” comfortable, fun, and invigorating: plenty of recreational facilities, lots of activities, a safe environment, and very affordable homes. In this offer there is the winning formula, adding 365 days of sunshine. The concept worked, and Sun City’s growth exploded over the next years. Today there are more than ten Sun Cities in Arizona, California, Florida, and Nevada. Each follows the Del Webb development model, with the facilities –golf courses, swimming pools, and recreation centers – going up before the first houses are sold. The company anticipates even more growth as the post-World War II baby boom generation approaches retirement.¹¹

The inhabitants of Sun City and the lifestyle play a central role in this narrative, this because the community and its residents celebrate retirement.

3.1 A history of showy success

Sun City’s history began January 1, 1960, it is located 14 miles northwest of Phoenix, along U.S. 60, the route for early pioneers who travelled from Wickenburg to abundant water canals in the far southeastern portion of the Phoenix Valley.

In the following years water became the new gold and, canals became the main infrastructure to build new cotton plantations. Where now stands Sun City there were a water stop and the Marinette Ranch: several thousands of acres with plantations, a school, two stores, and a cotton gin.

By the late 1950s the farming industry became less and less profitable when water became scarce and, the Del E. Webb Corporation bought the whole site. The Corporation was looking for a site to build its new retirement community, in order to replace cotton with homes and golf courses.

The location of the settlement was a key factor in the choice and development of the community: sun, roads and existing infrastructure, land cost and positive policy towards ageing determined the current position. Another important key factor was the person behind this operation: the developer Del Webb, today synonymous with Sun City and, indeed with the entire concept of active adult retirement living. Delbert Eugene Webb was born in 1899 in Fresno, California, and in 1929 he moved to Phoenix where he opened his construction company. The Del E. Webb Corporation grew to become one of the world’s largest builders of military bases, sports arenas, high-rise buildings, hotels, casinos, and more.

The company’s foray into building a self-contained community for retirees in 1959 was considered a risky experiment, but Webb had recognized that senior citizens were the fastest growing portion of the American population. In 1974, before his death, Webb appeared on a television show and he claimed that creating Sun City was “the most satisfying thing [he had] ever accomplished in [his] life”. Besides everything he had accomplished prior to launching Sun City, it was the development of this community – and the industry it spawned – that landed Del E. Webb on the cover of the Time magazine issue: “The retirement City: A New Way of Life for the Old” on August 3, 1962.

It is not a coincidence if Webb was always given a hero’s welcome when he visited the community. Once he told the crowd “I wish I could live here with you fine folks and do nothing but play golf”, and the community replied with the theme song: “Let the Rest of the World Go By”.¹²

¹⁰ Bret McKeand, *Sun City*, Charleston, Arcadia Publishing, 2011, p.7.

¹¹ Kim Shetter, “Sun City Holds On”, *Planning*, January 1996, Vol. 62, pp.16.

¹² McKeand, *Sun City*, p. 19.

Webb had realized, after the previous unsuccessful experiences, such as Youngtown, that the climate and the houses were not sufficient for a successful project, but amenities and recreational parks had a central role. Furthermore, the new idea was supported by a large work of marketing and promotion, in order to show the positive side of life in Sun City. One of the most important tools was advertising, and the local newspaper: *Sun City Independent*. The Del E. Webb Corporation also used sports as a means to promote its newest projects, for example race cars.

In this way, work began on the unnamed community in mid-1959 with a golf course, a recreation center with a pool, five model houses, a shopping center, and a hotel for visitors.

Thanks to this work Sun City was an immediate success, according to Webb records over 100,000 visitors toured the new model homes during the first three days of the grand opening. Sun City introduced the world to “resort retirement”, and its initial success earned international fame and attention with newspaper articles and television shows.

The rapid growth of the city meant the sale of 1,300 houses by the end of 1960. It was an ambitious project, planned for the long term; as shown in *Figure 2*, the community rose considerably over the years as well as houses increased, their prices, the services, and the facilities. An important phase of the city was the in the mid-Seventies with the death of the founder, Del Webb, and the foundation of a new retirement community next to Sun City, along the West side. This was the new project by the Del E. Webb Development Corporation (DEVCO): Sun City West, while the original city extended north of Grand Avenue.

To date, according to the 2010 census, Sun City has a population of 37,500 inhabitants, while Sun City West has 24,500 inhabitants.



Figure 2. Sun City's the different phases of construction.

3.2 The way to celebrate retirement

Sun City occupies 8,900 acres and it includes services, entertainment, and houses in an unincorporated area of Maricopa County, about 20 miles northwest of downtown Phoenix. The community's deed presents specify restrictions: each household must have one member over the age of 55 and none under the age of 19. The restrictions also cover such things as front yard fences and onsite parking of recreational vehicles (both prohibited). The rules are bolstered by the county's senior citizen overlay

zoning ordinance, adopted by the county in 1979. There are now five such “senior overlay” districts in addition to Sun City. Declared illegal in the 1980s by a proposed amendment to the federal Fair Housing Act of 1988, thanks to the political clout wielded by groups like the American Association of Retired Persons, the amendment was dropped, and the senior overlay district survived.¹³

Circular street and neighbourhoods characterize the urban layout, where each of the community’s four circles converges at the center where shops, churches, and a recreation center are located. According to Findlay (1992) Sun City provides its residents an “isolated landscape”, “with an unprecedented degree of self-sufficiency and segregation”. In addition to the flaunt sense of community, fed by people and by advertising, urban design and housing show a self-sufficient, even isolationist, feel of the town. In this regard, a white concrete block wall, with entry limited to the main east-west and north-south arterials, surrounds the entire development. Grand Avenue, a major thoroughfare, separates the phase-one development from phase two. A series of spatial devices of exclusion emerge, such as wall, barriers, and gates, both for private and for public spaces. These elements appear as white backdrops of buildings, frames where isolated houses and landscaped gardens spring (Figure 3).

By analysing the types of housing it can be seen that most of the units, including townhouses and condominiums, are one story. Two-thirds of the housing are single families, while the remaining part of the retirement resort is assigned to hotels. The regulation of the typologies, since the early models of houses, produces a series of selectable types based on income and architectural ambitions; from the basic 1960s model of the Mountjoy series, with two bedrooms and two bathrooms for \$12,750, to the Mediterranean Villas (\$19,900) and the “unique” series of Rancho Estate.

The houses of phase one were low, but more recent houses are larger and more luxurious, with enclosed garages, private pool, and other facilities. According to Shetter (1996) the average annual household income is \$25,000, or \$7,500 more than the national average for this age group. Sun City property taxes, as estimated by the state Department of Commerce, are only third to one-half of most other Phoenix-area communities (without children there are no schools to pay for). Housing values have remained high. Meanwhile, an interesting thing has happened to the moderately priced houses built in phase one: now younger retirees seek them.

The attempt to show and live an eternal youth is clear in the plethora of activities carried out by the elders of Sun City, starting from volunteering to the different clubs (art, dance, theatre), to gardening and especially sport. The favourite sport, since the beginning, is golf and it is no coincidence that the preferred vehicle is the golf cart.



Figure 3. Sun City’s housing.

¹³ Kim Shetter, “Sun City Holds On”, *Planning*, January 1996, Vol. 62, pp.16.

4 COSTA DEL SOL, SPAIN

Just as Florida and Arizona define a migratory sunbelt for American retirees, Spain's coastal regions overlooking the Mediterranean – the Costa del Sol and the Costa Blanca – function as the corresponding migratory sunbelt for the active retirees of Europe. Referred to as “the region of Europe which has been attracting the largest number and highest density of expatriate retired residents” and commonly defined as the “Europe retirement home,” the , in the province of Málaga, Andalusía, in particular has attracted hundreds of thousands of retirees since the 1980s from Western and Northern European nations such as Great Britain, Germany, France, Sweden, Denmark, Norway, Belgium, and the Netherlands, in order to experience more favourable climatic conditions and lower cost of living.¹⁴

For the spatial condition of this largely transcultural interaction, it is difficult to quantify the exact scale of this migratory phenomenon because it consists of a “veiled population” of predominantly unregistered foreign residents. While the official number of registered foreign residents on the Coastal municipalities of the Costa del Sol documents 231,545 inhabitants out of a total official population of 1,252,872 (Instituto de Estadística y Cartografía de Andalucía, 2013), estimates of actual foreign residents range up to 600,000, of which Britons are the largest single nationality represented. Moreover, it is particularly interesting to look at the data concerning the city of Málaga, where the population doubled from the 1950s to today.

As far as the organization is concerned, the Costa del Sol may be understood as a linear form of exurban development, creating a post-metropolitan condition without a clear organizational or productive center of gravity – except for the airport of Málaga.

Socially, what is remarkable about the urbanizations (*urbanizaciones* in Spanish) is their tendency towards mono-national cultural environments through the concentration of British, German, or other senior European citizens. Such concentrations have been controversially termed “colonies”, in terms of habitat-based demographic and consumer colonization, one that is less a product of top-down control than in a collective bottom-up consumption of urban territory.

Particular shifts in these variables have led to the migration of the model, from the *urbanización* to other locations such as Italy, Croatia, Bulgaria, or Turkey. As easily replicable formats, the *urbanizaciones* operate as climatic utopias that simultaneously exploit the local exotic contest as a packaged product while mimicking the specific cultural contexts of the migrants’ “home” environment. This takes place as a setting largely devoid of work and rain, constructed as a “home away from home better than home” (Montilla, 2002).

4.1 Mass tourism and the new aged settlers

Historically, the Costa del Sol in the nineteenth century evolved from Mediterranean coast into Europe’s “great winter playground” and “pleasure periphery” (King et al., 2000). As a spa resort, Málaga in particular emerged as a site of overflow from the overcrowded French Riviera. Further expansion took place to the west of Málaga, in Torremolinos, by the beginning of the 1930s. At the time, hotel accommodations were still directed toward attracting the wealthy leisure class. In the aftermath of the Spanish Civil War and World War II, the wider territories of Málaga, Torremolinos, and Marbella were successfully promoted as high-status destinations for foreign vacationers, with practically no tourism-related development outside of these areas on the Costa del Sol. The most radical changes in the region would occur at the beginning of 1950 with the emergence of international mass tourism. The phenomenon of all-inclusive package tours developed in the 1960s and 1970s was one of the key aspects of this transformation (O’Reilly, 2000). The rapid rise in the popularity of the Costa del Sol as a tourist destination is clear from statistics that track a rise in visitors from 51,000 in 1959, to 925,000 in 1968, to 2.5 million in 1975, to 7.9 million in 2013 (International Tourists in Andalucía, 2014).

The 1980s marked a particular shift: Spanish local and central governments attempted to offset the destabilizing effect of seasonal economic fluctuations typical of the tourism industry by promoting foreign investments on the land and properties in the coastal areas. Due to its relatively low cost,

¹⁴ Russell King et al., *Sunset Lives: British Retirement Migration to the Mediterranean*, Oxford, Berg Publishers, 2000, p. 207.

according to O'Reilly (2000), "developers capitalised in this new market, building cheap, high-rise, often poorly constructed blocks of apartments in an unregulated fashion in many of the most popular resorts. Urbanisation (new, densely concentrated developments of small or larger villas) sprang up in a spontaneous and often unplanned manner in and around these same resorts."

Towards the end of the 1980s the first decline in tourism on the Spanish coast started spreading, largely as a result of economic recession, but international retirement migration (IRM) continued to increase. Mostly recently, the collapse of property markets and international recession at the end of the 2000s did not affect the growth of residential retirement developments along the Costa del Sol over those decades, albeit at different rates. As a result, formerly dense and compact cities, such as Málaga, have expanded into "linear post-metropolitan area" encompassing hundreds of *urbanizaciones* (Simpson, 2015).

Retirement migration is described in terms of urban-to-rural migration, based upon a return to one's childhood home village or town upon retirement (King et al., 2000). The second stage takes place with the elevated influence of local factors and conditions such as environmental attractiveness, accessibility, social support, and housing availability in relation to the diminishing importance of childhood connection in retirement location choices. The third stage incorporates more individuals retiring to multiple widely dispersed locations under the guise of a more pure form of lifestyle or amenity migration. The internationalization of location-driven retirement in Europe has been placed within the context of "radical improvements in older people's incomes and assets," and massive changes in the "social construction" of old age in the twentieth century, particularly in terms of preferences and opportunities (King et al., 2000). These long-distance migrations around the age of retirement is commonly known as the "retirement peak". King et al. (2000) have identified three major factors in the international retirement migration in the recent decades: increased familiarity with foreign destinations, improved transport and accessibility, and the reduction of institutional and legal barriers to foreign living. In particular, on the one hand, there is improved accessibility with the European motorway network and the expansion of routes of low-cost airlines, on the other hand, the reduced role of institutional and legal barriers at both level of nation-state and of the European Union, with a supported freedom of movement.

In addition, some countries such as Spain and Portugal apply special tax treatment, particularly profitable, for senior citizens coming from foreign countries.

According to King et al. (2000) international retirement migration is the result of the increasing importance of "amenity and lifestyle influences on the selection of retirement locations." This can be placed in the context of a corresponding decrease in the importance of family-rated locational decisions. Of the range factors attracting the foreign retirement migrants from Northern to Southern Europe the most important are: healthy old age, climate, lower living costs, house prices, and the increased familiarity of southern culture and lifestyle. This process created an unprecedented and distinctively European "rainbow" society (Simpson, 2015).

Formerly dominated by the compact, relatively high-density town, and punctuated by other smaller historical fishing villages and towns placed along the coast, the current settlement's patterns covers nearly the entire coast of the Province of Málaga, which stretches at varying densities more or less continuously along 150 kilometres of coast. This approximately 500-square-kilometer settlement area functions neither as a centralized city nor a collection of discrete villages, but rather as a series of coexisting ecologies combining to produce a linear structure of varying thickness and intensities. It is the "linear metropolitan condition" theorized by J. M. Romero (2004). In these terms, large expanses of the region may be characterized as a form of retirement "exurbia", where the development has been largely decentralized, dominated by tourism and retirement migration. The Costa del Sol produces a similar form of peripheral urbanization, based on the exclusion of the conventional "productive" urban components such as industry and commerce for the inclusion of an alternate form of industrialized leisure distributed across the territory. The corresponding urban entities may be framed as the urban edges of the beaches themselves, the golf courses, and the *urbanizaciones*.

4.2 From the *Leisure City* to the linear post-metropolitan territory: a new morphology

Leisure has become an increasingly important part of Western life. To maintain levels of productivity, quality of leisure time has offset the increased demand for working hours. Leisure went

from being a status symbol in the Fifties to a "normal fact" or an "accepted fact" in the Nineties (Simpson, 2015). Leisure has had a major impact on cities, and on the future, because its role will intensify. This lifestyle has requirements and needs, domestic and urban elements. The real estate market has experienced a radical transformation: a proliferation of residential areas oriented to leisure and the chance to live away from the city, for active retired or through new forms of work related to the Internet. Due to its new landscape, the traditional image of farming has become an urban carpet with plots designed for living, working, producing food and having fun. This situation has created a great demand for second homes, hotels and houses for rent in recreational areas.

The book *Costa Iberica: Upbeat to the Leisure City* offers a parallel temporal perspective in its exploration of the linear leisure urbanism of the Spanish coast in general, and the Costa Blanca's Benidorm in particular. "The conglomerates of hotels, restaurants and leisure facilities have transformed the contours coast of the Iberian Peninsula in a long, compact city based almost exclusively on tourism. [...] In spring, a large number of retirees fleeing the cold and prejudicial climate of their home countries; in summer, it hosts the largest concentration of young people around the world in most contemporary disco party; in autumn it becomes the resting place of the Spaniards themselves; and in the winter months it seems a "ghost town". This city is, in consequence, extremely mono-cultural in any season."¹⁵

Most of the urban interpretations of the Costa del Sol, including that of MVRDV, have largely underplayed the spatial understanding of the coexistence of the various users occupying the territory, where lectures and descriptions have not gradations between temporary permanent, local and foreign, and young and old.

While the existing literature describes the urban phenomenon of the Costa del Sol largely in terms of a time-sharing logic between four main groups – indigenous, residents, tourists, and retirement migrants - this section will foreground the organization of the various constituents according to the coexistence of three dominant ecologies. Consisting of historical towns, tourist resorts, and *urbanizaciones*, this arrangement registers a historical and programmatic transformation of the coast from the latter half of the twentieth century to the beginning of the twenty-first. Dominated by foreign and active retirement migrants, the *urbanizaciones* have emerged as the dominant ecology in spatial and territorial terms. Filling in the accessible territory between the historical fishing villages and tourist resorts, several hundred residential *urbanizaciones* have formed what appears to be near-continuous linear carpet of urbanity stretching along more than 150 kilometres of the coast, roughly between the settlements of Estepona and Nerja. This exurban system supports a considerable population of retirees through a vast leisure infrastructure, mark of the mutated leisure typology: from temporary leisure towards full-time leisure use. The *urbanizaciones* themselves represent a form of hybrid urbanity lodged in the space between the vacation resort and the American gated community, and between the Andalusian pueblo and the colonial outpost. A fragmented scenario with isolated entities distinct from much of their surroundings both in organizational and sociocultural terms.

The distinct linearity of the overall organization of the Costa del Sol is function of the importance of the geographical features in defining its development, coastline with beaches and mountains rear edge, and the corresponding arrangement of its infrastructure, with dominance of highways and roads. According to Simpson (2015) this linear infrastructure system "while appearing at first aerial glance as a continuous urban fabric, the texture along the coast consists of multiple fragments of contrasting geopolitical makeup that may be ascribed to three dominant coexisting urban ecologies: the historical town; hotel complexes and tourist resorts; and urbanizaciones." (Figure 4).

In particular Simpson describes the traditional towns as the first ecology: "generally dominated by permanent Spanish residents and transformed radically in the late twentieth century as a result of adaptation to the irresistible pressures for change in functions and in the social character". This change happened to towns with quite particular characteristics, such as Torremolinos, Fuengirola, Estepona, Nerja, and in the larger settlement of Málaga and Marbella.

¹⁵ Winy Maas and MVRDV, *Costa Iberica. Upbeat to the Leisure City*, Barcelona, Actar, 2000, pp. 72-73.

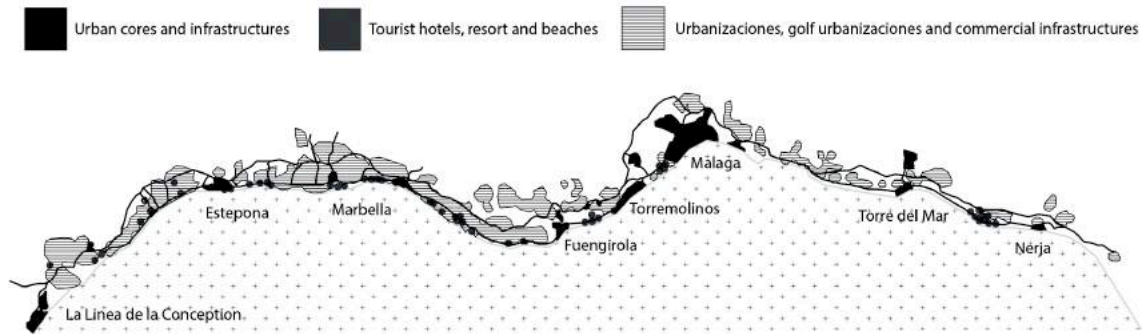


Figure 4. Costa del Sol and the three urban ecologies

The second ecology is represented by resorts and hotels, grown rapidly between the 1960s and 1980s, and are still occupied by foreign tourists on a temporary basis. These first developments are located along the coast, next to the historical towns, but with the years they have spread to more distant waterfront locations or to inland areas where new golf courses have been built. Hotels and resorts form the morphological structure of the Costa del Sol and generate the third ecology: the *urbanizaciones*. Indeed, this third typology is located between the first two ecologies, filling all the available space and taking advantage of the existing infrastructures. The *urbanizaciones* are occupied predominantly by international retirees or other international “resident tourist”. According to Huber (2012) *urbanizaciones* are “fully planned and structured settlements of various sizes that lie outside the historical boundaries of towns and villages. They are often initiated by a single ‘promoter’, who buys a large area of land, which he transforms into building land by a series of legal procedures. This transformation allows the investor to implement the necessary infrastructure later and to ‘urbanize’ the land in order to sell the building plots or build on them himself.”

Huber characterizes these urbanizations as “ex-urban, in the sense that they may well be located near a town or village, but do not really form a part of it. They cannot be compared with any form of traditional settlement”. The proliferation of *urbanizaciones* across the territory as a whole has not been a highly coordinated or controlled activity but rather largely spontaneous and opportunistic, and has been, to varying degrees, linked to the specific local culture of development corruption. The *urbanizaciones* are delimited by a perimeter and they are organized around the topic of leisure, in particular shared facilities such as swimming pools, golf courses, garden areas, and tennis courts.

The stylish resort of Estrella de Mar is a perfect scenario for James Ballard’s “new monsters” and for the detective setting of “Cocaine Nights” : a leisure-driven paradise whose ageing occupants divide their time between tennis, amateur dramatics and adultery, while their money makes money elsewhere. The Costa del Sol is described as place where “the unreality overflows on all sides”; where the towns appear as “dispersed settlement for swimming pools and golf courses”, and the architectures bring elements that appear to “come from the sale of decorations of a hotel in Las Vegas”¹⁶.

Within the context of vacation resorts, the aesthetic qualities of the local situation, in terms of architectural and landscape expression in particular, are most commonly realized as an appliqué to an internationally standardized “substructure”. The expansion of such an approach to lifestyle products for retirement migration has seen the increasing application of theming techniques from the entertainment-industrial complex to the architecture and landscape design to *urbanizaciones*. This theming can be described both morphological and social with standardized housing and landscape design and with the homogeneity of the inhabitants.

In architectural terms, one particular “stylistic” form dominates: a set of representational devices that have become known in local real estate parlance as Pueblo Mediterraneo or “Mediterranean Village” style (Simpson, 2015), characterized as relatively dense assemblages of two-to four-story-

¹⁶ James Graham Ballard, *Cocaine nights*, London, Flamingo, 1996, p. 13.

tall dwelling complexes with clay tile roofs and walls of white, beige, or earth-toned stucco (Figure 5).



Figure 5. Urbanización Puerto de Estepona

According to Dean MacCannel's theory of staged authenticity common to the space of tourism: "the house cannot be any old house, but must conform to their picture of Spanish house." As the social geographer Andreas Huber says this "authentic" and exotic style is "based on maintaining a tension between making the exotic familiar, while keeping the exotic *exotic*". For the international retirement the architecture is made familiar through facilities and infrastructure, producing a retired lifestyle equivalent to that of their country of origin. This set generates a standardized landscape, where the private social space of the *urbanizaciones* functions with more liveliness and variety than the former "centers" of the public city.

5 CONCLUSIONS

The case studies presented offer the possibility to compare two different spatial outcomes, in manner and time, facing the ageing.

In the Costa del Sol, the organized provision of collective facilities, social clubs, and leisure activities define a clear parallel to the American gated community. In both cases, leisure plays a central role in the definition of the urban morphology, becoming an instrument of connection and sharing. While Sun City is a planned settlement, designed to accommodate a community of elders, the Costa del Sol undergoes a phenomenon of filling, several non-planned urbanisations that overlay the existing fabric. These two case studies do not produce classical forms of public but rather, as José Maria Romero has suggested, a type of social space dominated by private social space over public social space.

A substantial difference between the two exists in the practices that led to their creation; the American census-designated place came from a top-down strategy, where the developer – Del Webb – built a new community for older Americans based on sun and fun. On the contrary, the land consumption in the Spanish case results from a bottom-up strategies, where a large number of active retired from all over Europe decided to build their houses near the sea, next to the existing towns and using the infrastructure of existing services. Another important factor in their settlement lies in the absence of rules or policies on the management of the phenomenon, and indeed, in some areas international retirement migration is encouraged.

In continuing the analysis it is important to introduce another theme: the social fabric, that is the network formed by the inhabitants and the economies generated. Both are distinguished by the retirement migration but with distinctions: while in Spain the wealthy elders from northern Europe try to cohabit with the local population, in Arizona the senior citizens live with their peers. In the latter situation the whole community has the same goals, dreams and lifestyle, creating a new market not only based on leisure but also totally oriented for the elders.

From this evaluation a superficial layer of homogeneity that distinguishes these places emerges, not only in the use but also in the typologies. In fact, the architecture taken into consideration is based on housing stereotypes relatable to a catalogue of uniform solutions, determined by a certain lifestyle. Housing and public spaces appear as imposed, pale imitations of an individualistic and exotic imaginary. Within this scenario a series of devices related to architecture of leisure emerge, which, however, function as separation (walls, gates, and fences). The space of the community becomes the space of exclusion; both Sun City and Costa del Sol tell about an isolation sought by the residents. This choice of exclusion and exclusivity is made towards the rest of the population – that remains far and away – but also internally, between all the inhabitants.

Due to this the active ageing, from the social point of view and from the forms that generates, it appears as a homogenous and closed landscape.

Although the two case studies only show a small part of the phenomenon of urban ageing, indeed Sun City and the Costa del Sol represent design examples, more or less conscious, that work on the needs of the elders, providing an answer both in spatial terms and urban policies.

At this point it is useful to recover the words of Lewis Mumford (1956) about older people: “the worst possible attitude towards old age is to regard the age as a segregated group, who are to be removed, at a fixed point of their life course, from the presence of their families, their neighbours, and their friends, from their familiar quarters and their familiar neighbourhoods, from their normal interests and responsibilities, to live in desolate idleness, relieved only by the presence of others in a similar plight. Let us ask rather by what means we can restore to the aged the love and respect that they once enjoyed the three-generation family at its best.” In these premonitory speech an inclusive attitude is proposed: “not segregation but integration”, facing the age-related crisis that lasted for decades.

Nowadays it is clear that ageing has profound consequences on a broad range of economic, political and social processes. Furthermore the sociodemographic transformation has in most recent times been largely interpreted in terms of two forms of crisis. The first, being a future crisis of dependency both for economic and health reasons, the second as a crisis of programming of architectural and urban setting previously for society dominated by the young for those increasingly dominated by the old.

Within this scenario and during this period of transition, which lasted for decades, it emerges the need of programs and policies directed to the elders in order to face the demographic phenomenon. As stated, previous research and projects focused on areas designed exclusively for seniors, and not on the entire city, on its overall operation and on the community that lives there. By contrast the common landscapes where most of the population lives - the daily city - were not studied, analysed and debated. These are places that changed a lot over time, in forms and uses, becoming in many cases contexts of shrinkage and exclusion.

Similarly, this situation points out the absence of the project, not only intended as design solutions in conceiving a good habitat, but first and foremost the requirement for a framework within which to act, achievable only through a careful analysis of the context, stressing shortcomings, needs and edges that define it (political, economic and social). The goal of this study is not to draw a guide of the age-friendly city, neither an abacus of possible design solutions or neither a list of best practices and, in fact, all strategies should remain as background. It is an action that needs to provide operational criteria, every time different and adapted to the contest.

The purpose is to normalize the old age, restoring the old to the community. What the aged need is activities: not just hobbies, but the normal participation in the activities of a mixed community. According to Mumford (1956) the intent is “to re-build the ideal scheme” in order to “challenge the whole theory of segregation based on zoning ordinances of function and social groups”, by “providing an environment in which the aged are more independent. [...] There is no easy shortcut to improve care of the aged: to do well by them, we must give a new direction to the life of the whole community. If we fail here, we shall, in prolonging life, only prolong the possibilities of alienation, futility, and misery.”

In conclusion, this approach does not include universal practices or conforming process, but the singularity of the project for which it can assess and provide land for the action on the city, an act inclusive for all its inhabitants and proactive against the contemporary demographic change.

6 REFERENCES

- Ballard, J. G., (1996), *Cocaine nights*, London: Flamingo.
- Barac, M., (2015), When we're 65, *Riba Journal*, pp. 54-56.
- Beauvoir, S., (1970), *La vieillesse*, Paris: Gallimard.
- Burgess, E. W., (1960), *Aging in Western Societies*, Chicago: University Of Chicago Press.
- Cumming, E., & Henry W. E., (1961), *Growing Old*, New York: Basic.
- Findlay, J. M. (1993), *Magic Lands: Western Cityscapes and American Culture After 1940*, Oakland: University of California Press.
- Gagne, A., et al., (2013), Don't Fence Me In, *American Planning Association*, December, pp. 35-37.
- Graebner, W., (1980), *The History of Retirement: The Meaning and Function of an American Institution, 1885-1978*, New Haven: Yale University Press.
- Handler, S., (2014), *An Alternative Age-friendly Handbook*, Manchester: The University of Manchester Library.
- Hunter, W., & Parkinson, J., (2013), Silver linings: the Active Third Age and the future of the city, *Architectural review*, vol. 234, no.1402 (December), pp. 91-101.
- Huber, A., (2003), *Lure of the South. The Migration of Older People from Switzerland to Spain: The Case of the Costa Blanca*, Zurich: Seismo Verlag.
- King, R., et al., (2000), *Sunset Lives: British Retirement Migration to the Mediterranean*, Oxford: Berg Publishers.
- Laslett, P., (1987), The emergence of the Third Age, *Ageing and Society*, vol. 7, 133-160.
- Maas, Winy, & MVRDV, (2000), *Costa Iberica. Upbeat to the Leisure City*, Barcelona: Actar.
- Dean MacCannell, D., (1973), Staged Authenticity: Arrangements of Social Space in Tourist Settings, *American Journal of Sociology*, vol. 79, no. 3 (November), pp. 589-603.
- McKeand, B., (2011), *Sun City*, Charleston: Arcadia Pub.
- Montilla, A., (2002), The Creation of the New German 'Extra-Metropolitan' Suburbia', unpublished conference paper.
- Mumford, L., (1956), For older people, not segregation but integration, *Architectural record*, v. 119 (May), p. 191-194.
- Neugarten, B. L., (1974), Age Groups in American Society and the Rise of Young-Old, *The Annals of the American Academy of Political and Social Science*, vol. 415, no. 1, pp. 187-198.
- Oliver, C., (2008), *Retirement Migration: Paradoxes of Ageing*, New York: Routledge.
- O'Reilly, K., (200), *The British on The Costa Del Sol*, London: Routledge.
- Romero, J. M., (2004), *020404 Deriva en ZoMeCS*, Malaga: Rizoma Fundacion.
- Shetter, K., (1996), Sun City Holds On, *Planning*, v. 62 (January), pp.16-18.
- Simpson, D., (2015), *Young-Old: Urban Utopias of an Aging Society*, Zürich: Lars Müller.
- Topalov, C., et al., (2010), *L'aventure des mots de la ville*, Paris: Ed. Pierre Laffont.
- United Nations, Department of Economic and Social Affairs, Population Division, (2013), *World Population Ageing 2013*, New York: United Nations Publication.
- World Health Organization, (2007), *Global age-friendly cities: a guide*, Geneva: World Health Organization.

Biography

Davide Vero is an architect and a Ph.D. candidate from the Politecnico di Torino. He received his Master's Degree in Architecture from the Politecnico di Torino in 2013 with a thesis on informal settlements, with particular attention to Villa 15 in Buenos Aires. During his studies he carried out research at the Universidad de Buenos Aires and at the Tsinghua University of Beijing. Furthermore, he has been working in several architectural firms based in Turin, Milan and Paris.

His research has always been marked by attention to the city and its transformations, closely related to urban history and architecture.