INTERNATIONAL ASSOCIATION FOR THE STUDY OF TRADITIONAL ENVIRONMENTS

WORKING PAPER SERIES

CITIES, URBAN, AND RECONSTRUCTION

Manar Zaki

Debbie Whelan

Luo Wenjing

Hans Joachim (Hajo) Neis, Pamanee Chaiwat

2022
Volume 320

Series Editors:
Mark Gillam
Hesham Issa
Adnya Sarasmita

TRADITIONAL DWELLINGS AND SETTLEMENTS
WORKING PAPER SERIES

Volume 320
Contents

CITIES, URBAN, AND RECONSTRUCTION

Traditional Dwellings and Settlements
Working Paper Series

CLIMATE CHANGE AND THE UNTOLD STORY OF ECOANXIETY

Manar Zaki
American University in Cairo, Cairo, Egypt

Volume 320
Pages 1-10
2022

CLIMATE CHANGE AND THE UNTOLD STORY OF ECOANXIETY

◆ ◆ ◆

Anthropogenic activity has escalated the planet's temperature and resulted in dire consequences on our environment, and our health, whether physical or mental. The imbalance created in the planet's environmental conditions has consequently caused a rupture in mental health, and ecoanxiety has become one of the adverse indirect repercussions. Not quite recently, a sense of urgency has been spreading in the literature of climate change, evoking a call for action, and requesting commitment from us all: individuals, communities, and countries. This paper attempts to establish a link between the climate crisis and ecoanxiety in the aim to restore our cognition of our roles to save the planet, salvage our health and preserve, and conserve, environmental resources for future generations.

1. INTRODUCTION

> *States will be sorely tempted to ration limited resources, to micromanage economic activity, and in the interest of the environment to specify from above what citizens may or may not do. 'Quality-of-life' experts might define in an authoritarian way what kind of needs people are permitted to satisfy.*
>
> Ernst Ulrich von Weizsacker[1]

Climate change is a multidimensional crisis that has been expanding and worsening over the past several decades creating disruption and disequilibrium to our natural environment, biodiversity as well as our health and wellbeing[2]. There are numerous root causes for a changing earth climate. The aim of this research paper is to review the reasons attributed to climate change from a resource perspective; highlighting that industrialization and the fast-paced developmental aims towards economic growth have both exhausted the planet's resources and affected its climate. And to further shed light on the negative effects impacted on humans' mental health and wellbeing induced by the rising heat, melting polar ice and rising sea levels, desertification and drought, storms and hurricanes, and the adjacent human calamities thus produced[3]. Therefore, the changes in temperatures are only the tip of the iceberg, underneath which lies multiple negative repercussions that adversely affect our life on earth and our ability to sustain the present ecosystems, and consequently economic growth and development.

It is necessary to understand how climate change is likely to affect people's physical and mental health in order to prepare for the liable impacts on our daily lives, attempt to produce viable solutions and ultimately raise awareness for a clearer perspective on how to deal with and prepare for adverse climate conditions. The purpose is threefold: review the human-induced reasons that led to the change in climate; examine the resulting ecoanxiety and ultimately explore how human activity can be adjusted to reduce changes in climate and tolerate the adverse effects.

2. HUMAN DISRUPTION OF THE PLANET

2.1. Industrialization and Extractivism

The discovery of fossil fuels had been a milestone in human history which had initiated the era of industrialization and turned the economic growth wheel, but at a cost[4]. Progressive changes were beyond imagination, and the world experienced forward quantum leaps in transportation, manufacturing, global trade, agriculture and food products, medicine and health, urbanization, technological inventions, and innovations. Population growth and consumption followed suit, which in turn placed pressure on the environment.
At one hand, extraction of natural resources produces waste, which causes long-term damage to the environment. The raw materials used for production were extensively extracted causing environmental damage to earth, and the use of energy in industries produced emissions that affected the earth's atmosphere. Resource scarcity has been embedded in western thought since the writings of Malthus (1798). The late fifties witnessed an upsurge in the exploration and excavation of raw materials, and a rise in consumption of minerals and metals along with a spike in gross national product (GNP) per capita growth rates. The augmenting use of resources entailed an increased production of waste, and the excessive consumption of products led to increase in waste.

Rees[5] highlights that academic discourse showed a pessimistic outlook towards availability of resources. The economists predicted depletion of energy resources, minerals, etc. Malthus theorized a fixed number of resources as opposed to augmenting consumption due to population growth and accordingly economic disasters were foreseen. Scarcity of resources was summarized by Rees[5] in four categories: depletion of energy, minerals, and metals with increased mining and extractivism; disruption of ecological cycles due to pollution which leads to destruction of life on the planet; degradation of renewable resources such as air, water, soil, and aquaculture; and deterioration of amenities, such as rivers banks and sea beaches due to pollution from hazardous waste. The term "ecological footprint" was coined to hypothesize the area of land, soil, and water which humans would need to sustain their living in terms of production, consumption, and waste[6]. Ecologically reducing use of resources has become more necessary than ever before. Questioning what lies ahead, one has to identify and realize the complexity of the ecological and economic systems and how to penetrate them to induce change.

2.2. Urbanization, Production, Consumption, and Waste

Technological and industrial advances have been manifested in excessive production and extensive urbanization. Moving from the rural to the urban in search for better living conditions has boosted economic growth but has also put pressure on cities and produced slums. The relationship between economic growth and the urban sprawl has been well-established in research; cities and urban centers are now attracting more than half of the world's population, and it is estimated that 60% of the world will be living in urban areas[7].

The quality of life in urban centers has attracted larger numbers of people who have enjoyed higher standards of living and better access to education, healthcare, housing, employment opportunities, and resources. However, rising urban population has come at a cost. Energy consumption has surged, greenhouse gas emissions from factories and vehicles have led to deterioration in air quality and in turn contributed to health and climate problems. In addition, increased waste has direly affected the quality of resources, polluting water and soil.

With the betterment of the quality of life, and urbanization, population increased and so did waste. Municipal and industrial waste became a predicament of modern societies. Waste is produced upon extraction of resources, and the remnants of resources enter the ecosystem in the form of pollution. The other side of economic development hence exposed a dual calamity: exhaustion of resources and waste production that adversely affected the environment[7].

Urban dwellers adopted lifestyles that promoted high consumption rates, thus adding to the bill of carbon emissions and consequently climate change. Heightened consumerism has fed the production sector with incessant demand on goods and services; simultaneously, the drive for profitmaking has spurred the production sector into excessive production modes, thus creating a vicious circle of endless demand and supply that relies on marketing techniques which entangle and enslave consumers[7]. We are living an era that completely relies on modern technology, energy, and vehicles, and consequently, we are experiencing the undesired effects on the environment.

Observing climate change, research has definitively asserted that global warming of the planet is the result of human continued actions in overusing the planet's natural resources in excessive production, which, on one hand, promoted economic growth and on the other hand produced environmental waste. As temperature rise, changes happen in disease vectors, in ground level ozone and natural disasters. Drought and scarcity of water are an impinging adversity of unprecedented hot weather. The Intergovernmental Panel on Climate Change[8] has highlighted the current situation: the greenhouse gas emissions, which are the result of heightened human activities, have reach unprecedented high levels, and are negatively impacting the climate; polar ice is melting due to high temperatures and consequently sea levels are rising and posing threat to coastal cities; heatwaves are expected to intensify and elongate resulting in rising and acidifying sea levels. Immediate action is needed, otherwise we will all suffer from destructive realities that are looming closely rather than threats.

We are living in cities with an infrastructure that was designed and built to meet the needs of a set of climate conditions that are rapidly changing; hence, the planning and design of living spaces will have to take into

consideration the changes in temperature, water resources, erosion of coastal cities and the aging buildings that cannot endure the abrupt and continuously changing weather systems. During extreme weather conditions, not only physical plants are damaged but also services and facilities are disrupted, which pose threats to health. For example, disconnected phonelines are common during storms which make it difficult to call for help or reach a healthcare unit. Exposure to increased heat can threaten human physical and mental health, as well as biodiversity. For instance, wildfires pose a threat to wildlife and habitat, flora, and fauna, nevertheless, they are also a source of disruption to humans exposed to them, whether physically or mentally[2]. The associated health hazards affect lungs and breathing, and mental health traumas for children, vulnerable, women, the elderly. The devastation is enormous, and no one can really picture the repercussions except those exposed to such disasters.

That said, the reactions among people do not counteract the severity of climate change. Denial and slow response have marked the public's reaction to a problem that may have been dimmed in comparison to other global challenges, namely economic development, political strife, and environmental problems. The concept of climate change is not perceived as an immediate threat to biodiversity; the western discourse on climate change has pictured climate change as a future expected phenomenon that is not directly related to industrialization, fossil fuels deforestation[9]. Moreover, lack of knowledge prevails regarding the means to tackle it. We have to admit the idea of reciprocity, the consequences of human action during the past few decades have reciprocated in the form of higher levels of pollution and high global temperatures. To understand what is going on, we have to track down the climate change effects on human health. The focus of this essay is on the threats posed to mental health and the repercussions that we can strive to avoid.

3. ECOANXIETY: A TAXONOMY OF TERMS

There have been several warnings about the changing climate. Notably, Al Gore's[10] documentary: *An Inconvenient Truth* can provide an eminent example. However, the subsequent feelings of fear and worry were not considered for possible remediation and treatment. First, we have to admit the presence of those set of feelings in order to know how to deal with them. There are several terms used to describe the feelings resulting from climate change, and it is necessary that we understand the different emotions associated with our changing climate, or the eco-emotions. Ecoanxiety and eco-depression express how we feel towards tumultuous unpredictable weather; while the former term displays avoidance, the latter infers withdrawal. We are faced with eco-guilt compared to eco-remorse, and eco-anger as opposed to eco-annoyance. Eco-paralysis is the feeling of inability to take action towards moderating climate change impacts, whereas solastalgia is the feeling of isolation due to the removal of solace due to displacement from one's home[9]. Recognizing, defining, and enlisting these concepts into behavioral psychology can help in developing emotional goals that

can counteract the negative emotions towards climate change, and help conceptualizing the disruptive feelings that stem from the changing ecological status of our surroundings. Ultimately, the aim is to address climate health issues, enhance our emotional preparedness and foster resilience of the communities towards the climate phenomenon[15].

3.1. Ecoanxiety Defined

Ecoanxiety or climate anxiety stems from the human dependence on science to harness natural resources, and which has now led to an imbalance in the biosphere that has caused a backlash on nature, and thus we are faced with a dimmed unpredictable future[13]. Ecoanxiety can be defined as fear of ecological change and environmental disasters; ecoanxiety and eco-depression are not clinically recognized disorders. The term encompasses the set of people's reactions towards climate change; how they act, think and feel in cases of environmental disasters whether acute or chronic[11]. While research has documented the physical health effects of climate change, the potential risks of climate anxiety have been neglected; mental and psychological effects of disasters have been overlooked[10 & 12]. It is worth noting that the mental and psychological impacts of environmental disasters outweigh the physical injuries[9]. Shedding light on this set of disrupted human feelings can converge our thoughts into probing a way out. Obviously, humans are encountering a unique predicament that questions our survival on earth, our future and that of forthcoming generations. While there are numerous efforts among the leaderships of developed and developing countries to reduce carbon emissions, the commercial and financial interests of big companies wreak havoc with the targeted reductions in fossil fuel gases. Realistically, we are all using fossil fuels, we cannot alter our way of living overnight, we cannot go back to medieval ages and stop using transportation that burns fossil fuels. Fear of changing our lifestyle puts us under pressure and also becoming aware that this same lifestyle hurts our environment, and our health, creates a sense of eco-guilt that leaves us clueless, desperate and worried about change. Heightened consumerism has become an integral part of our lives and our self-identity, and "in giving up an unsustainable consumer lifestyle, we are threatening the identity of this part of ourselves, one we are mostly not aware of but will fight tooth and nail to protect."[13]

Despite the prevailing evidence that climate is changing, and the earth is warming at unprecedented rate, there are populations that are still unaware of the negative repercussions of the climate; I can avow to that. And those who are cognizant of climate change are experiencing a sense of denial and sometimes blame on bigger corporations, oil companies or countries that have enormous carbon footprint. The fact is we are all in this together. A question arises: can we get rid of our vehicles, stop traveling by planes, and quit shopping? The thought of doing any of this can bring about a lot of worries, and the thought of the deteriorating environment can evoke even more anxiety.

4. PSYCHOSOCIAL IMPACTS OF CLIMATE CHANGE

4.1. Acute Changes vs. Chronic Changes

Acute events that induce psychological trauma: injuries, death of family members, damage of houses, loss of livelihood due to extreme climate-induced events, such as hurricanes, tornadoes, floods, wildfires, landslides. Hurricane Katrina is a prominent example of how mental wellbeing can be forgone for other disaster-induced physical implications[12]. The focus has been on the injuries rather than the incited mental disruptions. Human reaction to acute events is evident in smoking, substance abuse or addiction, unhealthy food choices and suicidal reaction. Emotional reaction after a disaster is manifest in depression, emotional distress, fear, anxiety, post-traumatic stress disorder (PTSD), major depressive disorder (MDD), grief, major trauma of loss, relational difficulties with other people, and provoke suicidal attempts[9]. Cianconi et. al[14] report the extent of mental repercussions of wildfires; 42% of Australians exposed to bushfires were diagnosed as psychiatric cases, 33% of Californians exposed to wildfires showed symptoms of major depression, Greek wildfire exposure showed similar effects.

Chronic effects are the slow, long-term impacts that affect wellbeing, but are subtle and happen gradually. Slow degradation of the affected areas can eventually lead to people abandoning impacted cities, which will certainly have its economic effect as well as its financial stresses on the people residing in these inflicted cities. The feelings of distress and loss of people's hometowns can gravely affect their wellbeing.

Temperature and heatedness increase irritability, and in turn violence, raise risk of suicide. Limiting outdoor activities due to heat, increases stress with reduced recreation, which in turn affects physical fitness. Evidence in research shows the relationship between rising heat levels and increased mortality and morbidity rates[9].

Drought changes landscapes, disrupts water resources, which affects agriculture and results in food insecurity and famine, thus contributing to emotional stress. Acts of violence and aggression can arise due to scarce water resources, thus exacerbating the feelings of anxiety. Water is a vital resource for the sustenance of life, and water shortages can be very irritating let alone bearing the consequences of water conflicts between nations. A study done on Australian farmers, in 2008, reported increased stress level in 75% of the farmers due to longtime drought[9].

Migration displacement is a form of uprootedness that has emerged because of environmental disasters, eco-migration, and environmental refugees. The decision to leave one's homeland results in a detachment, a disruption to their livelihoods and stability. They become more vulnerable, torn, and broken, losing their identity, culture, and heritage. By the year 2050, an estimated population of 200 million migrants will be displaced due to climate change conditions[9]. Conflicts and migration in war-torn Syria can be attributed to degradation of land, in addition to scarcity of water and food[9].

Loss and disruption caused to everyday life, changes in jobs and occupations due to climate change, result in a sense of loss of identity, and feelings of hopelessness. Economic losses and decreased productivity affect uncertainty and frustration levels[2].

Worry and uncertainty we are delving into unknown territories, therefore, research is needed to determine the percentage of ecoanxiety. More populations are feeling powerless, helpless, angry, frustrated, and lost[3].

Disrupted social networks due to displacement, loss of identity, causes anger, aggression, and conflicts. Loss of oneself and despair, which affects our ability to cope. Moreover, in rural areas, the map of agricultural regions and crops will be overhauled due to the changing temperatures, which can be pronounced into inventing new alternative ways of planting crops. However, changing the traditional ways of agriculture will take time, and those working in farming will have to endure the shock of the climate instability[2].

Illnesses and physical diseases induced by changes in weather conditions can cause drastic changes in families' lives and lead to disrupted lifestyles, which put caregivers and patients under stress and fatigue.

4.2. Inequities Created: The Effect of Climate Change on Vulnerable Populations

Changes in climate conditions have a considerable toll on marginalized communities: women, the elderly, children, low-income communities, having disabilities, indigenous communities. Intersectionality of gender, race, culture, education, and socioeconomic status place these communities at considerable risk of suffering from climate change. Environmental and social injustices are magnified in the case of the marginalized, who undergo mental health disruptions which further add to their calamities[9]. Social inequalities, environmental racism and poverty compound the effect of climate change on vulnerable people[10]. Hurricane Katrina survivors from vulnerable populations showed symptoms of PTSD[9]. Inequities exist among countries and regions alike. While Hayes et. al[11] stressed the importance of integrating vulnerability assessments within the framework of mental health impacts of the climate, acceptance of the marginalized provides a coping strategy that increases community resilience in challenging times.

5. THE WAY FORWARD: CLIMATE ACTION VS. CLIMATE EMERGENCY

Mitigating climate change necessitates immediate action. Redefining our way of living is a case in point. Urgent transition to renewable energy resources and limiting fossil fuels is of paramount importance. Adapting to climate change is another tenet on our way towards annulling the effects of climate change. The Paris Accord, the Lancet Countdown on Climate Change and the Planetary Manifesto are depictions of global initiatives to mediate the climate calamity, however, there is a gap between these goals and the actions taken by individuals, corporations, and governments[9]. Collaboration is crucial among the different disciplines:

climate scientists, epidemiologists, physicians, urban planners, economists, politicians, public health professionals, psychologists, policymakers. We need a holistic overview of the problems of climate change and a breakdown of the actions to be taken, bearing in mind that every country or region must carry the responsibility of enacting the steps towards mitigation and adaptation.

Accommodating ecoanxiety as well as admitting the dire psychological effects of the changing climate is a huge step along the way of resolving the climate crisis. Injecting hope, empathy and resilience among the afflicted communities, and the world at large, can instill a sense of oneness and belonging to our earth. Promoting mental health literacy is essential to raise awareness among the public regarding how they feel after a disaster and helps them how to prepare for upcoming uncertainties[11]. It is also important to relieve the stigma of mental health therapy and the associated connotations with psychological illness[11].

It is time to initiate climate conversations that are compassionate, realistic, and responsive. Collective and conscious efforts are key to progress. It is also necessary to understand that a huge part of the anxiety in the affluent societies is due to fear of the future and despise at the older generations for ruining the environment. On the contrary, another part of our world rejects the fact that climate change is happening, and a third party are noncognizant of the concept! Nevertheless, I believe that we do have the power to determine our future, it is not dictated upon us. We can choose a more sustainable way of living, and act immediately towards this goal. We can ease our ecoanxiety with more sustainable living practices. It is definitely our choice.

NOTES AND REFERENCES

[1] Meyer, B. (2009). *Costing the Earth?: perspectives on sustainable development*. Haus Publishing.

[2] Clayton, S., Manning, C. M., Krygsman, K., & Speiser, M. (2021). Mental Health and Our Changing Climate: Impacts. *Implications, and Guidance*.

[3] Manning, C., & Clayton, S. (2018). Threats to mental health and wellbeing associated with climate change. In *Psychology and climate change* (pp. 217-244). Academic Press.

[4] Heinberg, R., & Lerch, D. (2010). What is sustainability. *The post carbon reader*, 11-19.

[5] Rees, J. (2017). *Natural resources: allocation, economics and policy*. Routledge.

[6] Rees, W. (2018). Ecological footprint. In *Companion to environmental studies* (pp. 43-48). Routledge.

[7] Ritchie, H., & Roser, M. (2018). Urbanization. *Our world in data*.

[8] IPCC, A. (2021). *The Intergovernmental Panel on Climate Change (IPCC)*. World Meteorological Organization, IPCC Secr..

[9] Hayes, K., Blashki, G., Wiseman, J., Burke, S., & Reifels, L. (2018). Climate change and mental health: Risks, impacts and priority actions. *International journal of mental health systems*, *12*(1), 1-12.

[10] Al Gore, A. A. (2006). An inconvenient truth. *Film, Oscarpreis*.

[11] Hayes, K., Berry, P., & Ebi, K. L. (2019). Factors influencing the mental health consequences of climate change in Canada. *International journal of environmental research and public health*, *16*(9), 1583.

[12] Page, L. A., & Howard, L. M. (2010). The impact of climate change on mental health (but will mental health be discussed at Copenhagen?). *Psychological medicine*, *40*(2), 177-180.

[13] Weintrobe, S. (2013). The difficult problem of anxiety in thinking about climate change. *Engaging with climate change: Psychoanalytic and interdisciplinary perspectives*, 33-47.

[14] Cianconi, P., Betrò, S., & Janiri, L. (2020). The impact of climate change on mental health: a systematic descriptive review. *Frontiers in psychiatry*, 74.

[15] Saint David, T. Climate change, Ecoanxiety and Ecodepression: How positive and coaching psychology can assist coachees in addressing these issues.

Traditional Dwellings and Settlements
Working Paper Series

A GRADUAL CREEP OF CHANGE – MODERNIST INFILTRATION OF MUNICIPAL INFRASTRUCTURE IN PIETERMARITZBURG, SOUTH AFRICA 1930 - 1960

Debbie Whelan
University of Lincoln, Lincoln, United Kingdom
Durban University of Technology, Durban, South Africa

Volume 320
Pages 11-24
2022

A GRADUAL CREEP OF CHANGE – MODERNIST INFILTRATION OF MUNICIPAL INFRASTRUCTURE IN PIETERMARITZBURG, SOUTH AFRICA 1930 - 1960

◆ ◆ ◆

This paper will discuss the municipal buildings in Pietermaritzburg in the early 20th century. It will begin by examining the different types of buildings housing new technology, and then those that were created as a result of it. It will then go on to describe the different types of buildings that were constructed to house the imperatives of separate development. It will conclude with comments on the survival, condition and usage of these structures in a post – apartheid South Africa.

1. INTRODUCTION

Cities grow organically, determined by population, economics and social systems. Pietermaritzburg, the capital of KwaZulu-Natal, South Africa, is no different. Laid out in grid fashion during its brief origins as a Dutch settler or Boer city, it was colonized by the British in 1843. The British brought with them late Victorian technology, some of which required new types of buildings for which there was no precedent. New technology was not the only driver of new infrastructures; gradual exclusionary legislation along race lines, which informed provision of specific buildings for African people within the city, was slowly being implemented.

The new technical age required housing steam-driven electrical power stations as well as the means by which to house the expansion of electricity across the city in substations. Electricity drove the potential for new transportation systems, particularly tramlines and tram stops. In addition to providing the infrastructure for the living, the city was also responsible for accommodating the dead, providing cemeteries and building crematoria. Legislation after the end of World War I also drove the provision of Corporation-funded housing for all races, as well as those as necessary elements deemed necessary by of the new Union government: hostels to house African workers in the inner cities, as well as the legislated and formalized network of beer halls and breweries which controlled the production of African beer.

From 1900, the initial architectural approach embraced a pattern-book style, adopting a late 19th century domestic aesthetic which slowly mutated into a more politically inclusive though non-committal, Union Period style after 1910. Significantly, at the beginning of the 1930s, the municipal architecture began to change, employing a more streamlined, planar aesthetic which responded to purpose, and at the same time presented a comparatively dramatic departure from the earlier precedent. It was modern, rooted in the city of Pietermaritzburg and had limited references to the nostalgic architecture which came with the Victorian era settlers.

Modernism came to South Africa early; in 1922, Rex Martiennson was in written communication with Le Corbusier, and the ideals of the spare, technology were experimented with in buildings by architects such as Helmut Stauch and Martiensson in Johannesburg. It took a little longer to reach the provinces, particularly that of Natal which was firmly in the thrall of British influence, and revivals such as Tudorbethan, Spanish, Cape Dutch and then a localized Art Deco, frequently deployed in the seaport of Durban and playing to rapid international expansion after the First World War. These various architectural lenses all played palimpsest on tradition – tradition of a strong imported cultural background, a localized interpretation of international trends, a political construct of union, a development of vernacular, and also most importantly in the case of the Colony and then the province of Natal, an enduring Britishness. It is important to underpin the extant architectural traditions in the country as themselves, a *melange* of influences both cultural and climatic, before discussing the gradual incursion of Modernism as a global international influence, but also something which was originally in the city of Pietermaritzburg, both functional and whimsical.

Pietermaritzburg is the current capital of the contemporary province of KwaZulu-Natal; a densely inhabited province of rolling landscapes and different climates, ranging from subtropical along the Indian ocean, to more temperate and even montane, as the elevation rises on the escarpment. Pietermaritzburg sits at the climatic intersection – some 80km inland from the sea with thornveld to the east and commonly known mistbelt to the west as the elevation rises drastically. Like its better known sister city, Durban, a port and well-known seaside destination, Pietermaritzburg has strong traditions of Britishness; however its Dutch origins and its political situation as seat of Provincial power, have led to its built environment having complex and contested traditions; the overlays of the British and the Dutch, a dramatic intervention in mid-century Modernism and then a desuetude promoted by an inward-looking political approach focused on revival and perpetuation of indigenous cultural traditions, leading to a slash and-burn-approach, retrospective rather than proactive planning which leads to a decolonial obliteration of existing built environments.

Given that the quotidian structures of cities (those which are not necessarily people-facing) are rarely celebrated, their documentation in civic histories is usually scant. In usual circumstances, urban researchers can rely on the information contained in city records, plans submitted for approval, minutes of meetings, and tax and insurance documentation. However, in the case of Pietermaritzburg, little of this evidence remains. With the election of the first democratic government in 1994, consequent political change in the 1990s particularly (as will be briefly outlined towards the end of this paper) had a detrimental effect on the records of the city: documents and other records of the City Engineer were lost, destroyed or misfiled, and the 'institutional memory' of people who worked for the city was gradually ousted and replaced by new staff. That the city did not have a properly functioning architectural department in this transition meant that instating a properly functioning architectural department after transition became problematic: given the

inclusion of the new political imperatives focused on housing, health and education focus was rather on town and regional planning and knee-jerk remedial development. Thus, the dearth of information, documentary, institutional memory, and published, means that the methodology of this paper necessarily works between the artefact (or memory of the artefact) and the scant information which is found in Town Clerk's files in the KwaZulu-Natal Archives, some unpublished material[1] and the Pietermaritzburg Corporation record books – annual records of the city comprising Departmental reports as well as budgets and expenditure. However, these records very rarely mention the invisible people who worked in Departments, and often plans of buildings (if found) are not signed, so the investigatory methodology is palimpsest at best.

Focusing on Pietermaritzburg, this paper will briefly discuss the 'traditional' vernaculars of the Boers, people of Dutch descent, the anglicization by British immigrants, and the development of public buildings using the architectural molds of their time: it necessarily firmly foregrounds the long tradition of copy, respond, adapt in order to understand the brief spark of intentional design which the City employed with the establishment of the first City Architecture section in the mid-1950s. It will then consider these whimsical and experimental utilitarian structures constructed by the Pietermaritzburg Corporation and the gradual move towards a streamlined Modernism in the early 1950s. Whilst the International Style and vernacular modernism is well regarded as being associated with the Nationalist Government after 1948, the buildings constructed in the city between 1955 and 1970 are of a singular local identity and are not influenced to much degree by what was being designed and built by departments of the National Government. Whilst a localized Modernist vernacular continued for some time, a post-1994 desuetude characterizes the contemporary city of Pietermaritzburg. As a result of political changes and governmental shifts in the early Democratic period, a general wholesale erosion of governance, competence and authority has either demolished most of these buildings or rendered them difficult to repair. This paper then concludes that tradition, its rupture and its repercussions can, more broadly, considered as cyclical – a process of developing and creating new traditions through a wholesale destruction of viable, but politically and racially specific, built environments. Whilst the traditional built environment of aboriginal peoples, namely that of the Zulu backgrounds this discussion, it is an element of the recrafting of tradition that the paper will pick up on towards the conclusion.

2. THE DEVELOPMENT OF 'TRADITION' – COPY, RESPOND, ADAPT

Pietermaritzburg, a settler town in the interior, had less of these influences. It was originally settled by Boers, farmers of Dutch origin, and the city limits laid out in a grid pattern common to these settler communities in 1838. The grids allowed for laying out water furrows which were gravity fed from higher land, and the plots, or erven, demarcated at roughly an acre in size, with the stipulation that the houses had to be situated on the street, with the land behind allowing for horticultural plots, stables and keeping some necessary stock. The

homes were simple, built out of locally available shale with a thatched roof, and often comprised of two rooms, common in these early homes. In the center of the city was located the marketplace – a large open space which not only housed the market itself, but also the first official building for the parliament of Natalia colony, the *Raadzaal*. A Church was also situated on the site.

Around the town were a series of open spaces or outspans – overnight stops for travelers and their wagons which in the context of Pietermaritzburg was an important feature, given that the Boers were cattle farmers, and had large ranches distant to the city. By 1843 this layer began to change. The British annexed Natal colony, and anglicized the building forms, adding verandas liberally borrowed from other colonies such as India, but also as the colony and its population grew, incorporated materials produced in the industrial centers in England, particularly wrought and cast iron, and corrugated iron sheeting. With them they also brought a mixed aesthetic – the classical revival common to the Victorian period, as well as Gothic-revival and some more elaborate Renaissance styles imported from Europe.

Architects designing the public buildings were largely imported from England – they arrived as settlers and particularly during boom times such as during and after the South African War (1899-1901) and the First World War. With them they brought the British aesthetic, as well as a habit of applying 'pattern' – nominally suggested in pattern books such as the seminal *Grammar of Ornament* by Owen Green,[2] and the earlier nostalgic romanticism of Joseph Papworth,[3] this extended to replicating well-known and understood forms, architectural 'standards' and material interpretations: viz the semiotic languages of brick, stone and timber, as well as the adoption of Classicism for a bank, Gothic for an Anglican Church, and neo-Classical for a Methodist one. This adoption of patterns is important, and at the same time, it was also deployed in buildings themselves: catalogue buildings of wood and iron offering a spread of options from basic simplicity to substantial dwellings were excellent solutions to rapid housing, and catalogues such as that of HV Marsh were still published in the early 20th century.[4]

With the shift in leadership, buildings in Natal briefly embraced the Edwardian style, but more strategically, after the Union of South Africa, comprising the four territories of the Cape and Natal Colonies (both British) and the Orange Free State and the Transvaal (both Dutch aligned), a Classical Union period was adopted to stylistically embed a union, a oneness. Whilst this was broadly rolled out across the country, the Union Period classicism did not impact Pietermaritzburg to the extent that it did cities such as Durban. However, it is important to understand the rollout of buildings in the city more closely, in order to appreciate their role in developing a responsive style, but also to be able to position the impact of Modernism, as it arrived in the mid-1950s, more specifically.

Designers in Pietermaritzburg adopted rather, a copy book approach. With little in terms if major infrastructure occurring at the turn of the 20th century, largely due to the financial impact of the South African War, what was important were the structures built to facilitate power rolled out in the city. The architectural templates adopted in the construction of the early electricity substations have reference. However, it is important to connect them to their parent structure, the Electricity Power Station and then trickle down their development to track a gradual adoption of simpler rational styles moving into the mid-century.

Utilitarian, non-civic buildings constructed by the Pietermaritzburg Corporation around the turn of the 20th century, slavishly retained their late Victorian aesthetic: the Municipal Power Station situated in Havelock Road was completed in 1898, and as with many early steam driven power stations, this was a streamlined brick building, with a prominent chimney. It is a commanding structure, comprising a multi-gabled front, with restrained elaboration, incorporating large banks of windows to let in natural light (in itself progressive) but simplifying the Victorian aesthetic in providing 'factory' space. The municipal takeover of power in the city has been described elsewhere[5] but set into motion a silent infrastructure which drove the tram system (dismantled in 1933) which in itself, provided the vector for the roll out of electricity across the city.

Indeed the growth of twentieth century Pietermaritzburg can be mapped in its electrical substations – the early examples such as that in Boshoff Street (ca 1901), Prestbury (ca 1904) and driven by the tramline to the Botanic Gardens and Commercial Road (now Alan Paton Road), driven by the tramline to the Scottsville racecourse are brick (in the first two instances), with simple articulation at the roof line with brick on edge or brick placed at 45 degrees in order to provide a 'cap' to the building, and a little architectural interest.

What is really important in this discussion is that firstly, there is little evidence of any personnel working for the then Corporation of Pietermaritzburg that were trained in any specific form of architectural drawing and its conventions; certainly the Electricity Department retained a draftsman who was seemingly deployed in designing the substations which were rolled out until the early 1930s. The examples described above, constructed at the turn of the 20th century were really the only real buildings of any note built by the Corporation until the 1920s – this was due to financial crises brought on by the crippling effects of the South African War (1899-1901), the Bambatha Uprising of 1906, and a fiduciary collapse which compelled the then Colony of Natal, of which Pietermaritzburg was the capital, to enter into Union with the other three territories comprising contemporary South Africa in 1910. This was then compounded by the Union's participation in the First World War – construction of most buildings stopped due to focus on the war effort, and only the most necessary infrastructure was installed – mostly connected with electrification (using wood and iron substations or else cast-iron mini-junction boxes), and water reticulation.

The city, however, expanded: the impact of the South African War at the turn of the century, as well as the returning servicemen and rural-urban migration after World War One. This not only led to a housing crisis, exacerbated by the lack of materials caused by the interruption of the War, but included two controversial pieces of legislation – namely the Beer Act of 1908, which allowed for the implementation of the Durban System, which will be unpacked a little later in this paper and the Native (Urban Areas) Act of 1923. Both these pieces of law are critical in that they prioritized the development of infrastructure for the African residents in the city – partly to begin to reinforce the later policies of 'Separate Development' as reinforced by the Nationalist Government after they came to power in 1948, but also, they prioritized construction of infrastructure for Africans over infrastructure for white residents. This means that much of the actual civic development in the early years of the 20th century was not centered on buildings for general use, but rather those which reinforced the separate development encouraged through the Beer Act of 1908.

The first major structures built shortly after the War were also bricolage – classically inspired electrical substations at the intersections of West and Pietermaritz Street, and at the intersection of West and Victoria Road. It is no accident that they were placed here: they were close to the Power Station and as such took on much load for redistribution. These buildings were simple, orthogonal, double pitched tiled roof or in the case of Victoria Road, a hipped and gambrel roof. Rendering is roughcast plaster, and windows are portholes ringed with slender Roman tiles whilst the corners are comprised of Roman Bricks. Doors and any other forms of opening were originally of Rhodesian Teak – a hardwood commonly deployed in buildings of the Union Period. This remained as such with the construction of the major substation in Alexandra Road (ca 1927) which was built at the time of the cross-over from direct current to alternating current, again marking an eastern extension of the growing city.

Whilst interwar English Revivalisms common in England in the 1930s were much practiced in domestic buildings and those designed by architects who responded to the trends which were happening abroad, the civic structures in Pietermaritzburg desperately clung to the tradition that they had invented. Further substations built during the 1930s, some of which, it appears were designed by one EB White, a technician in the Electrical Department, reduce the ornamentation of those large structures of 1920 and 1927. Many of these suburban buildings are also roughcast plastered, with a quarry tile placed at 45 degrees to emphasize the pitched roof and to add an element of decoration. Importantly, more substantial structures were built in the early 1930s which fulfilled the requirements of the city to provide amenities for its black citizens. Funded through the mechanism of the Durban System, the Native Affairs Department within the Corporation relied on income from municipally owned Beerhalls, to pay for the infrastructural requirements of the city. Whilst the original beerhalls opened in terms of this legislation occupied rental space, and the women's hostel, particularly, also occupied a rented site, impetus arose in early 1934 to move the central beerhall to make way

for a new Magistrates Court. The political and social imperative of this, in addition to its rapid design, and construction has been described elsewhere by the author[6] in addition to its unfortunate and illegal demolition.[7] The Retief Street Beerhall was situated on the corner of Retief and Berg Streets and opened in December 1934.[8] It was a substantial structure, with its main elevation onto Berg Street (now Hoosen Haffajee). Partly face brick and partly rendered, the symmetrical building was almost Egyptianesque in its scale and proportion. A central projecting bay of face brickwork contained a set of double doors at ground level, with the brickwork stepping to a point at the top of the gable. The centrality was reinforced by a ventilation gap just under the roof, comprised of corrugated sheeting. The central brickwork bay was flanked by rendered 'buttresses' which are also stepped, following the roofline. There were 3/3 steel windows at ground floor level, with the soffits of the windows falling slightly short of the soldier course above the double door entranceway. As is common, a high dado of face brickwork connected the building to the ground protecting the walls against everyday damage.

The Sobantu Village Hall was built around the same time, and most likely designed by the same architect. It conveys a similar gravitas as the Beerhall, although this is designed as a substantial community building, the central focus of a brand new 'Model Native Village'. These communities were political and social constructs which emerged from a late Victorian paternalism for promoting social improvement and continued social mobility (and in this case the Native Village had been mooted at Council level for many decades), but really promoted through the promotion of municipally driven social housing, enabled by the 1919 Health Act (which was promulgated under the aegis of the Department of Public Health) and the more sinister Native (Urban Areas) Act of 1923 which controlled the lives of African people living in the city. The Corporation Department of Native Affairs understandably stepped in and assumed responsibility for providing this housing, in a rental arrangement of houses of different sizes and configurations to promote the social mobility agenda, but to also provide inner city housing, a labor pool for Africans living within the city. Sobantu Village as it became known in the late 1930s was thus built from first principles – with potable water and electricity provided to the individual homes (at the time quite novel), sewers and drainage and also amenities such as a trading store. The aesthetic of the hall is reversed: a central projecting rendered entrance bay celebrating a double door, with flanking walls of face brickwork – here high-level steel windows reflect the additional projection of the portico, whilst at ground floor level, the window bay is reinforced by larger openings. The edges of the building are contained: vertical plastered bands run up the corner to the eaves, reflecting an engagement with popular building forms at the time, particularly Art Deco which was much vaunted in Durban. This streamlined aesthetic is reinforced by the manner in which the corners reduce in width from the wide base, to the eaves, and also in the manner in which the rather top-heavy entrance portal scales systematically upwards to a point celebrating 'entrance'. This again is reinforced by a conventional (for the city designers) inclusion of a porthole window above, again reinforcing verticality and centrality.

Other significant structures of this time include the original section of the Pietermaritz Street Fire Station, which reflects some of the monumentality in both the Sobantu Village Hall and the Retief Street Beerhall. Again, the Fire Station, which sits directly on the sidewalk edge, is modulated with a combination of plastered components and face brickwork. This is then reflected in additions, later in the 1920s, and sets the module for the building turning the corner into Symons Street, with both the corner and terminal buildings in the complex being a streamlined Art Deco, with embellishment integrated in modulation, rather than in additively. The development of the Gardens suburb, also intended as municipal housing, but initially for white railway workers, also commenced in the 1930s – this is significant as the entire suburb which is located on a steep slope is carefully regulated rhythmically, with certainly the street facing elevations being characterized by single car garages which are deliberately placed rather than being a random addition to the general plan allowing for a systematic and aesthetically balanced visual interpretation of the suburb.

Architects working in the colonies usually brought with them strong influences of their training abroad and deployed the basic principles and adapted them to local conditions. However, for civic institutions in which there were no specifically employed architects, reliance on people which may have received their draughting or design training in more vocational directions, often had to adapt their skills to include buildings, and with this came the use of pattern, application and bricolage. It was only towards the end of the 1930s and certainly into the war years of the 1940s that the design of many of the civic structures in Pietermaritzburg began to develop a specific character, evidencing an experiment with design, but most importantly, design intention rather than a compilation of elements in palimpsest fashion. Further, buildings had been largely designed by the civic authority that was responsible for them; in the case of buildings connected to electrification it was the electricity department, and for the Native Administration associated buildings, it was a mix between the City Engineers and the Native Administration authorities. By the middle of the 1950s, not only was the commonwealth-wide requirement for urban planning (driven by post-war construction in Britain and the rise of the New Towns Movement) becoming important, but the City Engineers Department, significantly, fissioned to allow for not only a Town Planning section, but also an Architectural Department, which employed architects and draughtspeople to compile all drawings of civic interest. This moment brought in specifically trained design professionals and heralded a decade of experimentation, which manipulated light and shade, played with form and color and pushed the boundaries of materials. It also considered a form of integrative Regionalism, incorporating local flavor and contexts in using the generally negative and invisible palette of everyday buildings in the city in order to experiment with new ideas.

3. DISRUPTION OF TRADITION – MODERNISM AS PLAY AND AS POLITICS

As noted right in the introduction Modernism arrived early to South Africa. Architects based at the University of the Witwatersrand were well connected to the movement in Europe, and certainly practitioners in South Africa such as Rex Martienssen and Helmut Stauch were exposed to the slimmed down aesthetics of Le Corbusier from the beginning of the 1920s. Their involvement in education meant that the trickle down of new ideas and architectural practices was active, leading to a number of significant South African trained modernist architects dominating the local landscape in the mid-20th century.

A few practitioners trickled into Pietermaritzburg: Durban was perhaps more exciting given its rapid rise to fame as a seaside destination, and architectural practices such as Crofton Benjamin designed a number of seminal buildings, mostly residential.[9] Little in the way of public buildings in a modernist form other than those designed and implemented by the city architects were built until later in the 1960s, and then a number in the 1970s which were funded by provincial and national money and focused on designing government buildings such as Natalia.

The vague flirtation with a slimmed-down aesthetic as seen in the Art Deco inspired Sobantu Village Hall, the Gothic Revival entrance gate to the Mountain Rise Cemetery and the almost Egyptian Retief Street Beerhall, constructed in a mix of roughcast render, plaster and face brick are elements of architectural forms and their concomitant detail deployed in the 1930s and 1940s. Certainly, it is known that the entrance to the Mountain Rise Cemetery was designed through appointment of an external architect (although who this was has never been established), and that the design of the other two structures connected to the Corporation Native Affairs Department appear to have been carried out internally.

The appointment of professionally trained architects rather than multi-faceted draughtspeople to the Borough was important. The snatches of influence present in the buildings of the 1930s and 1940s displayed an engagement with design and deliberate aesthetic decisions, rather than a patchwork approach. This appropriation, response and adaptation of localized traditions based on international trends was to continue with the appointment of the city architects, but with a firm application of the rational response to the function, reflected in the form. At the same time, corporation buildings became a playing field for architectural experimentation – new materials, forms, aesthetics and structural elements comprise the buildings constructed between 1955 and 1965. Happily, given a more prosperous post-war situation, they are not restricted to buildings supporting separate development and the requirements of the Native Affairs Department, but include other elements of urban expansion.

Of course, the utilitarian electrical substations were one of the more neutral structures with which to experiment with materials, form, light and texture. Whilst these have been more fully described elsewhere, the Modernist resolutions of substations are often quite contextual (some clad with granite setts from the closure of the tramlines in 1933, others with slate-like shale, or 'slasto'. Whilst some of these are experimental, such as that in Coronation Road in Clarendon and the more diminutive example incorporating a bus stop on the Athlone Circle, many were very simple, beautiful structures with impossibly thin oversailing concrete flat roofs, and vertical fins allowing for good ventilation for the electrical gear. These fins, it seems, were part of a preferred aesthetic practiced by one of the designers on the City Architects team, as they are also used on the Water and Waste Sanitation building on Mayor's Walk: capturing the light to create dramatic areas of bright and intense dark, added a compelling architectural flavor to what are fundamentally, utilitarian buildings. In addition, the construction was of high quality: the face brickwork is of very high standard, and the contemporary condition of some of these buildings is testament to their original builders.

In this tranche of Modernist structures are those associated with the Native Affairs Department of the Corporation: established in order to manage the funds generated through the beerhalls in the Durban System, the construction of many of these buildings was prioritized above the less essential needs of the city as they were essential buildings needed to promote the implementation of separate development supporting apartheid policies from the late 1940s. Examples of this is the East Street Native Men's Hostel (incrementally constructed from the 1930s onwards with the main construction being in the 1950s) and the now demolished (and rather compelling but architecturally unresolved) Native Bus Terminus Hub (ca 1957). A final structure which is itself a playful engagement with color, form and elevational articulation is located, on the corner of Fitzsimmons Road; it has specifically designed elevations allowing it to be viewed and appreciated in the round.

This tradition of experimental modernism appears to have been overshadowed by politically-nuanced public buildings funded by government such as Natalia (1978) and the Reserve Bank (1978), both designed by BRH Knuppe. Corporation buildings were no longer designed internally but through external appointment specifically in the case of the Natal Society Library (Knuppe 1975) and the City Engineers Building (Barnett and Sturrock, 1969). Indeed, Radford notes that this latter design was the result of a competition launched in 1966, showing that the responsibility for design and construction of civic related buildings was no longer the aegis of architects employed within the city.[10]

4. ENTRENCHMENT OF DISRUPTIVE TRADITION AS POLITICAL NORM

The post-colonial city, particularly in Africa in which racial segregation was so politically entrenched, suffers desuetude as the result of corruption, nepotism and clashing value systems. Pietermaritzburg is no different. However, the focus and origin of this urban decay is more complex than at face value and focuses not necessarily on clashing value systems as a result of racially polarized views on building and the association of Modernist official buildings such as Natalia with authority and oppression, but more nuanced internecine battlefields of ethnic polarity instead.

In 1994, South Africa had its first democratic elections. Pietermaritzburg had been the political capital of the (Natal) province until this, and as such, the Pietermaritzburg City Council was structurally propped up by the occasional requirements of Parliament. After the first general elections in 1994, the political leadership of the province was taken over by Zulu nationalists in the Inkatha Freedom Party, and as such the Parliament was moved to Ulundi – the seat of the Zulu nation and the erstwhile capital of the Bantustan of KwaZulu. This shift unseated the leadership of the province and affected Pietermaritzburg as a city to great extent. Not only was its role within the province questionable, but its association with people non-aligned to the IFP, the African National Congress, meant that little political sanction for change or development was present. Even though this situation was reasonably short-lived, the seeds for desuetude were sown: inner city challenges started with the culling of institutional knowledge, replacing many old civil servants with new and not necessarily appropriately trained or experienced counterparts which were often politically aligned rather than role competent.

5. REPERCUSSIONS OF TRADITION AND DISRUPTION – THE BUILT ENVIRONMENT AS POLITICAL PLAYGROUND

In the early years of the current century, a local architect was commissioned to design the new bus terminus, an extension to the historic, classicist Municipal Police Station (Brunskill 1884) currently serving at the tourist hub, following his post-modern, glazed addition to the Natal Society Library (Now Bessie Head Library). Both of these examples reveal a reactive response to a colonial structure (Police Station) and a Modernist structure (library) associated with an architect who designed many buildings for the Nationalist Government, including Natalia in close proximity. Whilst conceptual ideas embracing transparency, and equal access for people of all races may be intimated by the extensive use of glazing in these additions, such materials are inappropriate for a library as well as for a bus terminus waiting room in a city in which temperatures range from 0° centigrade to 40°. Similarly, the inclusion of a conical roof to both of these buildings is a trite attempt at contextualization, misconceived social inclusion and cultural relativism.

Significantly, this inarticulate approach points towards a confusion of purpose – that in which the built environment, its stasis, its ruptures and reassessment are never considered processes of connection (given the need to disconnect). A long-term tradition of following a trickle-down western building practice in the British mold particularly, followed by a formal, Nationalist Government (apartheid) deployment of the International Style, is intersected by a particularly short-lived and enthusiastic Modernist practice in Pietermaritzburg in the late 1950s and early 1960s. This delivered a number of whimsical buildings, most of them silent given their utilitarian function (although their aesthetics were far from quotidian). Those buildings which still stand, display testimony to a brief period of critical thinking with respect to the production of utilitarian buildings with a considered design, and most importantly, those allocated to the 'other' such as the Native Bus Terminus Offices. In many ways they were resistant to the embedded and extant traditions, and in their deployment of considered aesthetics for buildings of the Native Administration in the city, were in themselves, a significant rupture. That they could stand as such, against the more contemporary and architecturally polarized buildings constructed in recent years such as additions to the Bessie Head Library and the Pietermaritzburg Tourism Hub, is important. These last examples reveal that to intentionally position the buildings of the past as irrelevant, proves not only the frivolous and disingenuous politics of contemporary decolonized built environments, but that the determination to be 'different' from the 'tradition' is reactive and not architecturally considered within a broader, more extensive environment.

NOTES AND REFERENCES

[1] E Meineke and G Summers. 1983. *Municipal Engineering in Pietermaritzburg: The First Hundred Years.* City Engineers Department

[2] Jones, O. 1865. *Grammar of Ornament*. Day and Son.

[3] J Papworth 1818. *Rural Residences Consisting of a Series of Designs for Cottages, Decorated Cottages, Small Villas, and Other Ornamental Buildings: Accompanied by Hints on Situation, Construction, Arrangement and Decoration, in the Theory Practice of Rural Architecture.* R Ackerman

[4] H. Marsh. c1915. *Illustrated Catalogue of Wood and Iron Buildings* (4th ed). P Davis and Sons

[5] D. Whelan. 2014. A very ordinary power: the evolution of the electrical substation in Pietermaritzburg, 1990 – 1960. *New Contree. Special Edition: a journal of historical and human sciences for South Africa.* No 70. pp 147 – 172.

[6] D. Whelan 2015 2015. eMatsheni: The central beer hall as social and municipal infrastructure in twentieth century Pietermaritzburg. *Historia.* 2015; 1(1)

[7] D. Whelan. 2020. Panacea or patriarchal problem child? Heritage in post-colonial worlds. In Eds. Amoeda, R, Lira, S & Pinhero, C. Heritage 2020. *Proceedings of the 7th International Conference on Heritage and Sustainable Development.* Greenlines Institute for Sustainable Heritage

[8] P. Du Plooy. 1988. African reaction to the beerhalls. In J. Laband and R. Haswell, *Pietermaritzburg 1838-1988 – new portrait of an African city*. Shuter and Shooter pp 142-143.

[9] D Radford. 2002. *A guide to the architecture of Durban and Pietermaritzburg*. David Phillip Publishers

[10] D Radford. 2002. *A guide to the architecture of Durban and Pietermaritzburg*. David Phillip Publishers

Traditional Dwellings and Settlements
Working Paper Series

THE DYNAMIC INTERACTIVE RELATIONSHIP OF ASIAN PORT-CITIES AND THE REGENERATION OF OLD PORT AREAS: THE CASES OF DALIAN AND SINGAPORE

Luo Wenjing
Tongji University, Shanghai, China

Volume 320
Pages 25-46
2022

THE DYNAMIC INTERACTIVE RELATIONSHIP OF ASIAN PORT-CITIES AND THE REGENERATION OF OLD PORT AREAS: THE CASES OF DALIAN AND SINGAPORE

◆ ◆ ◆

Many scholars in the fields of architecture, urban planning, geography, transportation, economics and sociology have studied port-cities in different perspectives, while most of the existing achievements of this topic are put forward by western scholars. The research on Asian port-cities provides a universal model, but there is still a lack of benchmarking and analysis of specific cases. This paper will critically take Dalian (1898-2010) and Singapore (1819-2010) as examples to analyze the development stages of port-cities in two aspects, that is, function and space. This paper briefly reviews the theories on evolutionary models and interface of port cities in Western and Eastern countries, then uses a quantitative method to define the development stages of Dalian and Singapore by RCI (Relative Concentration Index) for the functional perspective. At the spatial level, on the basis of combing the existing literature of urban morphology, the historical drawings from Dalian and Singapore archives are combined to abstract the spatial model of the port-cities. The last part provides some strategies and suggestions for the transformation of waterfront for the current status. In the discussion and conclusion, the article puts forward the similarities and differences between Dalian Port and Singapore Port in the historical evolution of port city relationship, which provides some reference for the model of Asian ports and cities.

1. INTRODUCTION

A port is the connection point between ocean and hinterland, which is reflected in the relationship between port and city. Drawing on the theory of port-city relationship allows us to understand the rationale behind the spatial layout of the past – which still exists today – so that we can strategically plan for the redevelopment of port districts, and sensitively conserve their heritage, in future. The purpose of this article is twofold: first, to rethink the interrelationship between Asian ports and cities, taking Dalian and Singapore as examples; and second, to explore strategies dealing with the reuse of heritage and land amidst processes of upgrading and transformation.

The research on the port-cities has attracted scholars in many fields, such as architecture, urban planning, geography, transportation, economics and sociology, etc. They have studied the related issues from multiple perspectives: (1) waterfront redevelopments[1,2,3]; (2) new port infrastructure and regional development[4]; container terminal[5]; (3) socio-economic impact of the port[6]; (4) globalization, port hierarchy and the inter-port network structure[7] and etc. These studies show that ports are not only important nodes of global logistics, but also occupy urban space and make contributions to urban development.

Most of the existing achievements of port-cities development model are put forward by western scholars, based on a development mode of active construction, such as Anyport model[8] and Hoyle's six stage theory[9]. However, the formation of Asian ports are mostly affected by colonialism, but then brings about the

modernity of the city[10]. The characteristics of Asian port-cities which are different from those of western port-cities, such as, the collision between colonialism and nationalism, the independence and the modernity will be discussed in this research.

At present, the research on Asian port-cities provides a universal model, but there is still a lack of benchmarking and analysis of specific cases. Therefore, this paper will take Dalian (1898-2010) and Singapore (1819-2010) as examples to analyze the development stages of port-cities as important hubs in Northeast Asia and Southeast Asia, respectively. Both ports, shaped by their colonial histories, played a significant role in the emergence and development of their cities. Their dynamic evolution is influenced by internal factors, such as resources, policies, regional economy, etc.

The dynamic relationship between port and city is reflected in two aspects: function and space. From the perspective of function, the paper briefly reviews the theories on evolutionary models and interface of port cities in Western and Eastern countries (Section 2), then uses a quantitative method to define the development stages of Dalian and Singapore by RCI (Relative Concentration Index, Section 3). At the spatial level, on the basis of combing the existing literature of urban morphology (Section 2), the historical drawings from Dalian and Singapore archives are combined to abstract the spatial model of the port-cities to analyze the characteristics at various stages (Section 4).

The revival of waterfront space is the stage and problem faced by most port-cities at present. The last part (Section 5) provides strategies and suggestions for the transformation of waterfront. Where the old port area will go has become a follow-up issue to be discussed. Recently, the old port area of Dalian faces problems of vacant space and abandoned industrial relics, similarly faced by Singapore's old port several years ago. In Singapore, regulations and institutions played a crucial role in the transformation of the Singapore river, Keppel port and Tanjong Pagar. Singapore's success in the implementation of land reuse, transformation strategies, and port heritage conservation, will be a great reference for Dalian.

In the discussion and conclusion, the article puts forward the similarities and differences between Dalian Port and Singapore Port in the historical evolution of port city relationship, which provides some reference for the model of Asian ports and cities.

2. LITERATURE REVIEW ON DEVELOPMENT DYNAMICS OF PORT-CITIES

2.1. The theory of port-cities development dynamic model

The research on western port-cities model has been started since the 1960s and lasted for decades. Some preliminary research have used simple diagrams and models to analyze the evolutionary trends of port-cities. These models are widely discussed and updated in different contexts. Bird proposed the Anyport Model, one

of the first attempts to develop a systematic understanding of port-cities development based on British ports, including six stages: initial port construction; expansion of marginal terminal; improvement of marginal terminal; improvement of dock construction; adjustment of dock details and specialized production of dock. Since then, based on the Anyport Model, Bird[11] further refined and highly summarized the whole process of port-cities development in three phases: (1) setting: the port is closely dependent on its geographical consideration); (2) expansion: industrialization leads to an expansion of the ports construction; (3) specialization: the rapid growth of port throughput leads to the development of specialization and containerization. After that, Hoyle[12] emphasized the internal relationship between port and urban space; Notteboom and Rodrigue[13] put forward the concept of port regionalization, continued to make up for the limitations of Bird's model.

Technological changes in the shipping industry forced port facilities to leave from the core of the city, and led post-industrial cities to redevelop their old ports areas. The redevelopment of waterfront areas has become a global trend. Hoyle divided the development of port-cities into six stages: (1) primitive port/city; (2) expanding port/city; (3) modern industrial port/city; (4) retreat from the waterfront; (5) redevelopment of waterfront; (6) renewal of port/city links. At the same time, Hoyle put forward the port interface model, the research object is the most sensitive and active interface area between the port and the city (Figure 1).

Hoyle's model demonstrates the separation due to functional and spatial conflicts between cities and ports, highlighting the development pattern of western port cities. However, it failed to foresee different evolutions in other specific regions. Some models put forward the spatial pattern of Asian ports from the perspective of functional layout. McGee[14] proposed a fan-shaped spatial structure model based on Southeast Asian port cities. Kosambi's model[15] is based on the investigation of port-cities in India. Ford's model[16] model is based on the port-cities of Indonesia.

Sung-Woo Lee, a Korean scholar, comparing the Asian ports with Hoyle's model and taking Singapore and Hong Kong as examples, he proposed the spatial evolution model of Asian ports: (1) fishing coastal village; (2) colonial cityport; (3) entrepot cityport; (4) free trade port city; (5) hub port city; (6) global hub port city (Figure 1). Lee's research points out that the common characteristics of Asian ports are: the formation of new ports, gradually away from the original port city core, and the old ports continue to play an efficient port function. Although the trend of port function transfer is consistent with that of western ports, the difference is that the original port facilities of Asian port cities are still very crucial, and become complex entities with new industries and port regions, highly dependent; Western port cities usually stop the old port trade and take it as the focus of urban renewal strategy.

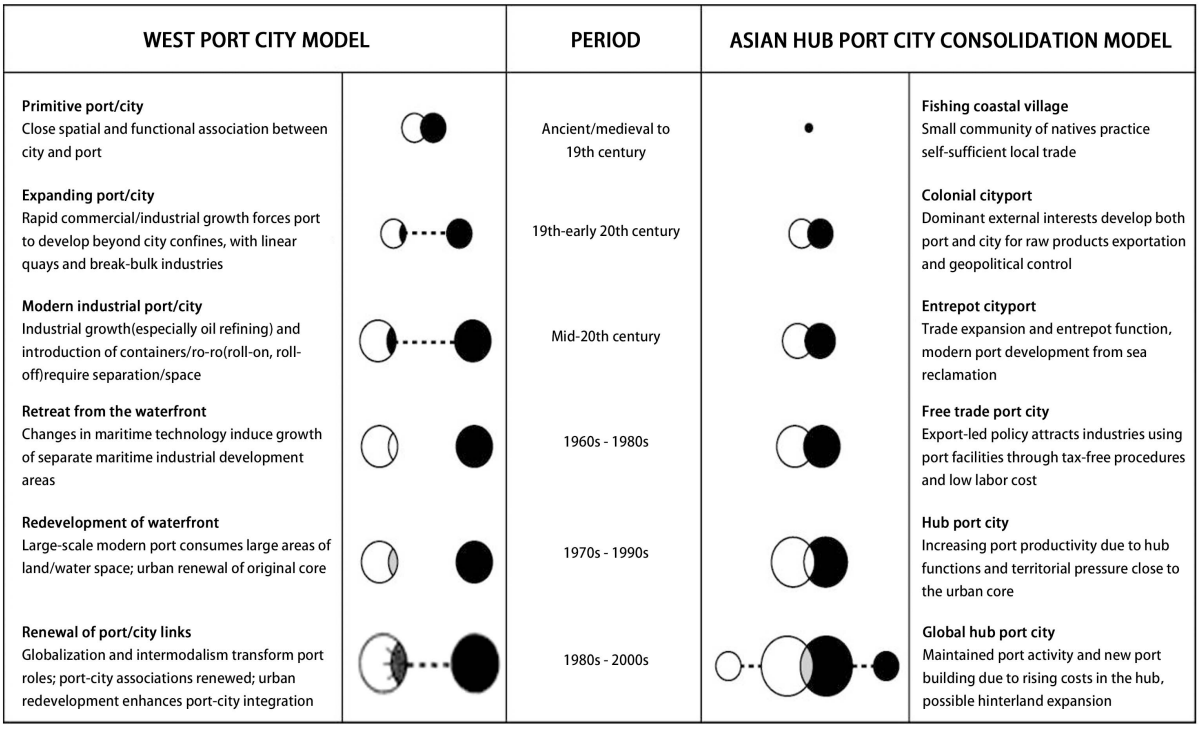

Fig. 1: Stages in the Evolution of Western and Asian Port-City Interfaces. (Sources: Modified from Hoyle, 2000 & Lee, 2008).

Ducruet[17] compiled the port city relationship matrix according to the concepts of centrality and intermediary proposed by Fleming and Hayuth[18] (Figure 2). The matrix has two dimensions: vertically, centrality is an urban functional measure; horizontally, intermediacy is a indicator based on maritime. One diagonal line shows a progression from a 'coastal town' to the 'global hub port cities'. The second diagonal line is from a port hub with limited centrality to the general city with limited intermediacy. The intersection of two diagonal lines uses the term 'cityport', which was first used by Hoyle and Pinder[19]. This model overcomes the difficulty of creating a single definition of 'port city', because few places can maintain the balance between centrality and intermediacy. The value of the model is to recognize that the relationship between ports and cities changes over time. Murphey[20] believed that the port city was destined to become an ordinary city through the continuous stages. The first stage is that urban economy highly depends on maritime and port functions; the second stage marks the attraction of other additional activities (such as industry); In the third stage, with the development of service economy, cities gradually get rid of their dependence on ports[21].

Based on the typology of the relationship between ports and cities, Vallega[22] proposed the Relative Concentration Index (RCI), which converts each type of port city into a simple quantitative expression. The author divided the regional share of throughput by the regional share of population in the total area: the value

of trade areas (such as gateway or hub) is high, low for densely populated areas, and the result of areas with similar importance of urban and port is close to 1. RCI can be used to determine the type of the functional relationship between port and city. In any period and any port-city, the RCI value approaching '1' (0.75 - 1.25) indicates the balance between the functions of the port and the city; higher than 1.25 shows port specialization, while lower than 0.75 indicates more emphasis on cities. More than three times represents two extremes, ⩾ 3 and ⩽ 0.33 respectively, that is, highly portization and urbanization. On this basis, the nine types of port city relations are transformed into five (Figure 3). The value of RCI is affected by many factors, such as urban constraints and spatial growth, port expansion and competition, congestion between ports and cities, space scarcity, logistics costs, unbalanced industrial growth, natural disasters and geopolitical changes. The evolution of port-cities is also gradual, and the measurement of long-term changes in RCI values can quantify the development in the relationship between ports and cities.

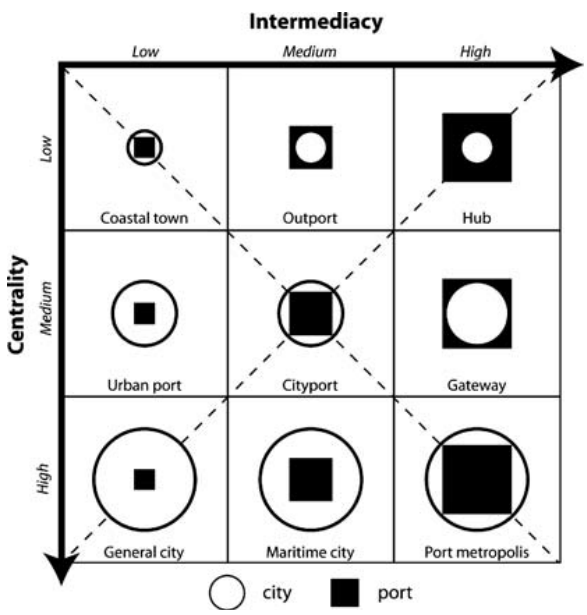

Fig. 2: A matrix of port–city relations.
(Source: Modified from Ducruet, 2005).

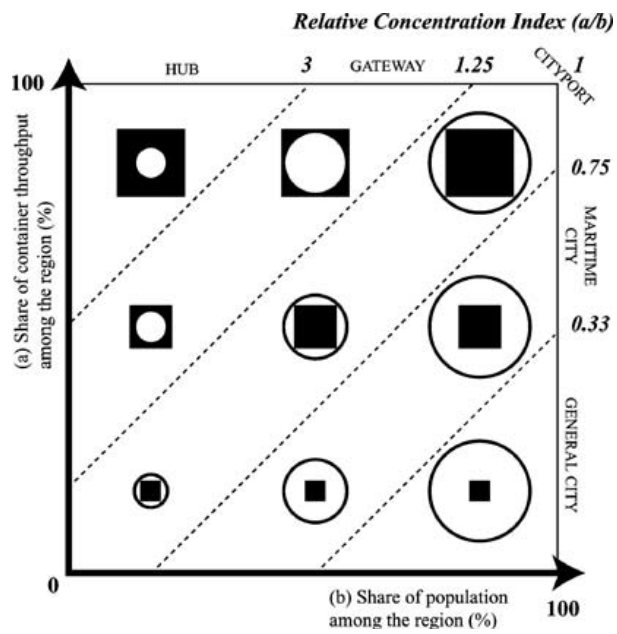

Fig. 3: Methodology of RCI measurement.
(Source: Modified from Ducruet and Lee, 2006).

In the RCI statistics, the ship throughput is often used for calculation. The expression is as follows[23]:

$$T_i = t_i / T$$

$$P_i = p_i / P$$

$$RCI_i = T_i / P_i = t_i P / p_i T$$

T_i : proportion of port throughput of port city i to the total throughput of all port cities;

t_i : throughput of port city i;

T: total throughput of all port cities;

P_i : proportion of the population of port city i to the total population of all port cities;

p_i : population of port city i;

P: total population of all port cities.

2.2. The theory of urban morphology

Urban morphology sprouted at the beginning of the 19th century. With the deepening of urban research and the intersection of disciplines, the scholars of geography and humanities first introduced morphology into the research category of cities to observe cities as organisms. Under the influence of Von Richthofen, the investigation and research on geomorphology developed rapidly[24]. The early researchers were German geographer O. Schlüter and American cultural geographer C. O. Sauer.

In 1960, German born British urban geographer M.R.G. Conzen published the epoch-making theoretical monograph of urban morphology, 'Alinwick, Northumberland: A study in town plan analysis', which became the most important milestone in the history of urban morphology research. The creative value of his research lies in adopting morphological gene method, carrying out map analysis, defining accurate terms, putting forward the concept of 'plan unit', 'fringe belt, 'leasing cycle', etc. Conzen summarized the systematic conceptual system, and created a school of thought in morphological research[25].

3. DEVELOPMENT STAGES OF DALIAN AND SINGAPORE PORT-CITIES BASED ON RCI

This article selects Dandong, Yingkou, Tianjin, Qingdao, Shanghai, Guangzhou as the benchmark cities to calculate the RCI of Dalian and Singapore, and combs the data of the past hundred years from the historical data of China's old customs, the yearbook of Chinese cities, the annual report of Singapore ports, and the population report, as shown in the table 1:

CITIES	1907		1910		1915		1920		1925		1930		1935		1950	
	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i
Dalian	1048901	41260	3290845		3991975	77184	8417615	158956	10575964	202474	12740738	291724	8802000		1824000	2515663
Dandong	154657	22000	205900		324230	32760	537212	110000	446798	110428	343706	149403	170000		94000	1635004
Yingkou	1050846	74000	1296642	52000	1169733	58091	941318	68623	1702073	106000	2462828	106040			123000	971215
Tianjin	2188074	800000	2300885	800000	2233403	719896	2494467	848114	4840191	1072691	5290248	1068121	5165247	1237292	890000	1888563
Yantai	3929055	40000	3686958	54459	2870184	68900	2950119	83272	3511774	94700	4073429	130575	4241292	145000		
Qingdao	1108913	34180	1662481	38264	1174536	69262	3378464	240220	4738386	276838	6098307	400025	7536206	570037	1259000	4103600
Shanghai	17545523	1196376	18554838	1289353	16849638	2006573	27500000	2292163	33500000	2641220	37972893	3144805	31810259	3701982	2170000	4927300
Guangzhou	4738564	900000	4754577	517596	4972317	652333	3277865	787070	5814534	797836	8351202	861024	8338972	1142829		
Singapore																
Total	31764533	3107816	35753126	2751672	33586016	3684999	49497060	4588418	65129720	5302187	77333351	6151717	66063976	6797140	6360000	16041345

CITIES	1955		1960		1965		1970		1975		1980		1985		1990	
	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i
Dalian	4392000	3097034	11135000	3570078	10569000	3852236	15137000	4094266	22881000	4370602	32634000	4582175	43809000	4852620	49520000	5178000
Dandong	64000	1803465	388000	1967619			268000	2343697	419000	2425138	346000	2549343	542000	2678755	500000	2322500
Yingkou	122000	1071033	604000	1338501	462000	1383808	481000	1544716	603000	1681962	245000	1814905	978000	1929932	2370000	2126200
Tianjin	1620000	2862966	5220000	12268742	5490000	4343325	8170000	4230432	8260000	6998498	11920000	7489078	18560000	8048003	20630000	8840000
Yantai											5060000	5672100	6887000	5924300	6680000	6255700
Qingdao	1576000	4594500	6831000	4637300	4484000	4901700	6512000	5391900	15421000	5742200	17081000	5961100	26102000	6267200	30340000	6666500
Shanghai	11180000	6231000	42670000	10563000	31940000	10938000	39910000	5802000	55810000	5570000	84830000	11463000	112910000	12170000	139590000	12690000
Guangzhou					4700000	3985070				4591000	21070000	5000658	37000000	5431487	50990000	5918462
Singapore					22147400	1877808	43775100	2074500	55218300	2259748	86299500	2413900	105835800	2482600	187789300	3047100
Total	18954000	19659998	66848000	34345240	79792400	31281947	114253100	25481511	158612300	33639148	259485500	46946259	352623800	49784897	488409300	53044462

CITIES	1995		2000		2005		2010		2015		2020					
	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i	t_i	p_i				
Dalian	64168000	5347000	90840000	5515000	170850000	5653000	313990000	5848049	414820000	5936000	334010000	6015959				
Dandong	1340000	2381000	4860000	2409700	20060000	2423900	53430000	2444697	150410000	2381000	44180000	2306984				
Yingkou	11566000	2196200	22170000	2262200	75370000	2305300	225790000	2428534	338490000	2326000	238210000	2292000				
Tianjin	57870000	9420000	95660000	10010000	240690000	10430000	413250000	12990000	540510000	15470000	503000000	13870000				
Yantai	13610000	6348800	17740000	6635735	45060000	6477800	150330000	6511400	251630000	6533000	399350000	7138000				
Qingdao	51030000	6846300	86360000	7066500	186780000	7409100	350120000	7636400	497490000	9097000	604590000	10071700				
Shanghai	165670000	14150000	204400000	16090000	443170000	18900000	563200000	23030000	649060000	24580000	651050000	24870000				
Guangzhou	83400000	6467115	124550000	7006896	272830000	7505322	425260000	8042445	520960000	8541913	636430000	9851142				
Singapore	305484000	3478779	325600000	4027000	423300000	4265800	503300000	5076700	575845800	5535000	590738300	5685800				
Total	754138000	56635194	972180000	61023031	1878110000	65370222	2998670000	74008225	3939215800	80399913	4001558300	82101585				

Table 1: The data of the throughput and population. (Sources: China's old customs & the yearbook of Chinese cities & annual report of Singapore ports & the annual population report of Singapore).

By sorting out the RCI data and combining figure 3, it can be seen that Dalian Port City has experienced: (1) costal town, before 1907; (2) hub port-city, 1907-1935; (3) gateway(outport), 1950-1985;(4) regional port metropolis, 1985-2020.

However, due to the lack of historical data, Singapore's RCI began in 1965. More specific details can be supplemented by other historical documents and drawings in Section 4, and its development stage is defined by RCI as: (1) hub port-city, 1965-2005; (2) gateway(outport), 2005-2020; at present, Singapore's RCI is gradually declining, which shows the improvement of its urban functions and will develop into a global port metropolis.

CITIES	1907	1910	1915	1920	1925	1930	1935	1950	1955	1960	1965
Dalian	2.49		5.67	4.91	4.25	3.47		1.83	1.47	1.60	1.08
Dandong	0.69		1.09	0.45	0.33	0.18		0.15	0.04	0.10	
Yingkou	1.39	1.92	2.21	1.27	1.31	1.85		0.32	0.12	0.23	0.13
Tianjin	0.27	0.22	0.34	0.27	0.37	0.39	0.50	1.19	0.59	0.22	0.50
Yantai	9.61	5.21	4.57	3.28	3.02	2.48	3.48				
Qingdao	3.17	3.34	1.86	0.94	1.39	1.21	1.57	0.77	0.36	0.76	0.36
Shanghai	1.43	1.11	0.92	1.11	1.03	0.96	1.02	1.11	1.86	2.08	1.14
Guangzhou	0.52	0.71	0.84	0.39	0.59	0.77	0.87				0.46
Singapore											4.62
CITIES	**1970**	**1975**	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**
Dalian	0.82	1.11	1.29	1.27	1.04	0.90	1.03	1.05	1.33	1.43	1.14
Dandong	0.03	0.04	0.02	0.03	0.02	0.04	0.13	0.29	0.54	1.29	0.39
Yingkou	0.07	0.08	0.02	0.07	0.12	0.40	0.62	1.14	2.29	2.97	2.13
Tianjin	0.43	0.25	0.29	0.33	0.25	0.46	0.60	0.80	0.79	0.71	0.74
Yantai			0.16	0.16	0.12	0.16	0.17	0.24	0.57	0.79	1.15
Qingdao	0.27	0.57	0.52	0.59	0.49	0.56	0.77	0.88	1.13	1.12	1.23
Shanghai	1.53	2.13	1.34	1.31	1.19	0.88	0.80	0.82	0.60	0.54	0.54
Guangzhou			0.76	0.96	0.94	0.97	1.12	1.27	1.31	1.24	1.33
Singapore	4.71	5.18	6.47	6.02	6.69	6.59	5.08	3.45	2.45	2.12	2.13

Table 2: The data of RCI. (Sources: Author)

4. THE SPATIAL EVOLUTION OF DALIAN AND SINGAPORE PORT-CITIES FROM THE PERSPECTIVE OF URBAN MORPHOLOGY

4.1. The spatial evolution of the port-city interface in the case of Dalian

Dalian is located at the junction of the Bohai Sea and the Yellow Sea. Its unique geographical location makes it not frozen or silted which leds to form a natural harbor. Dalian also has a crucial military, political and economic status in Chinese history. The construction of Dalian Commercial Port was first started by Tsarist Russia in 1899. After the Russo Japanese War, Japan occupied Dalian and started its forty-year colonial operation and construction of Dalian Port. After 1949, the former Soviet Union briefly took over Dalian Port and handed it over to China in 1951. Since then, the old port area has undergone upgrading and transformation as well as functional transfer. According to the development stages of Dalian Port City in Section 3, combining with historical drawings and archives, the spatial relationship between port and city of Dalian in each period is analyzed as follows:

(1) From a costal town to a free port (1899-1906)

The 'Far East Policy' of the late Tsarist Russia drove the rulers to look for an ice free port in Manchuria as the estuary of the Trans-Siberian railway. Under a series of comparisons, Dalian became the only choice of

the Tsarist Russian authorities. In 1898, through the 'Александр Иванович Павлов' (旅大租地条约), the Tsarist Russia leased the Dalian area, obtained the management right of the Dalian Bay and the nearby water surface to build a commercial port here.

The Tsarist Russia oriented the Dalian Port to a free port, that is, a free trade zone. It often attracted ships and goods, expanded entrepot trade and played the role of a commodity distribution center by virtue of its superior geographical location, good port facilities, advanced transportation methods, and preferential conditions such as exemption of import and export tariffs and customs supervision. The establishment of a free port will inevitably bring about the prosperity of trade, making Dalian Commercial Port a Far East commodity distribution center and an important world trade center.

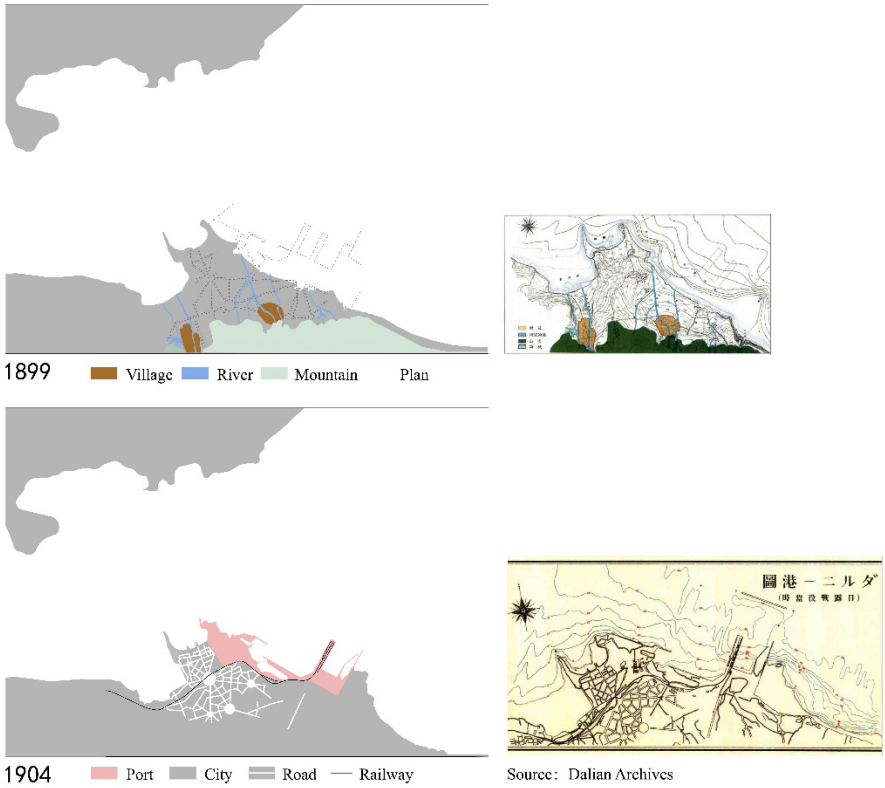

Fig. 4: The evolution of Dalian Port and city (1899-1906). (Sources: Author & Dalian Archives).

The construction of Dalian Port and the city was carried out by Tungching Railway Company (东清铁路公司) , В Сахаровъ, K. T. С колммовскій, etc. After studying the geographical situation of Dalian Bay, the location of Dalian port was determined to be on the east coast of the beach. By 1903, the first phase of the Dalian Bay Commercial Port project had been basically completed. The breakwater, two eastern jetties, the central coal and timber wharf, docks, the port railway, the warehouses and other supporting facilities had also

been finished. The scale of the commercial port had begun to take shape, and the port was officially opened. The port railway line separates the city from the port. The city streets radiate outward from several squares. The city is divided into three parts: municipal area, European residential area and Chinese residential area. During this period, the spatial characteristics of the port city were reflected in that the city, as the hinterland of the port, was closely connected with the port[26] (Figure 4).

(2) The regional transhipment hub port-city (1907-1945)

After the Russo-Japanese War, Japan occupied Northeast China and carried out the 'continent policy' in Manchuria. South Manchuria Railway Company was responsible for the operation and management of Dalian Port[27]. The construction of Dalian Port during the period is mainly divided into three stages (Figure 5):

i. Port reconstruction (1908-1928): The Dalian Port Construction Plan of 1908 was issued, which mainly restored and built port facilities damaged by the war. After completion, the annual throughput capacity reached 12 million tons, mainly for export, to meet the needs of Japan to plunder resources in the Northeast of China;

ii. Port expansion (1928-1934): Dalian Port Expansion Plan of 1928 was issued, mainly including the construction and expansion of Ganjingzi Coal Terminal. After completion, the maximum annual throughput capacity reached 15 million tons, and the former export port was changed into an import and export port to meet the dual needs of Japan's plundering of resources and accelerating the construction of the 'Manchukuo';

iii. Port expansion in the west (1939-1945), the expansion plan in the west was implemented, mainly to build the Xianglujiao Wharf. After the completion, the maximum annual throughput capacity reached 18 million tons, changing the previous import and export port into an import port to meet the needs of its comprehensive invasion of China[28].

In this stage, Dalian Port continued to expand, gradually developing from a free trade port to an important hub port in Northeast Asia. With the increase of port function demand, new ports were developed around the original port core area or even farther away, and became more specialized, such as oil terminals, coal terminals, etc. The port and the city are still spatially separated by the railway, but with the expansion and detailed construction of the city, public transport such as trams has emerged to connect with the port. New urban growth areas have emerged with the construction of new ports, forming a new hinterland.

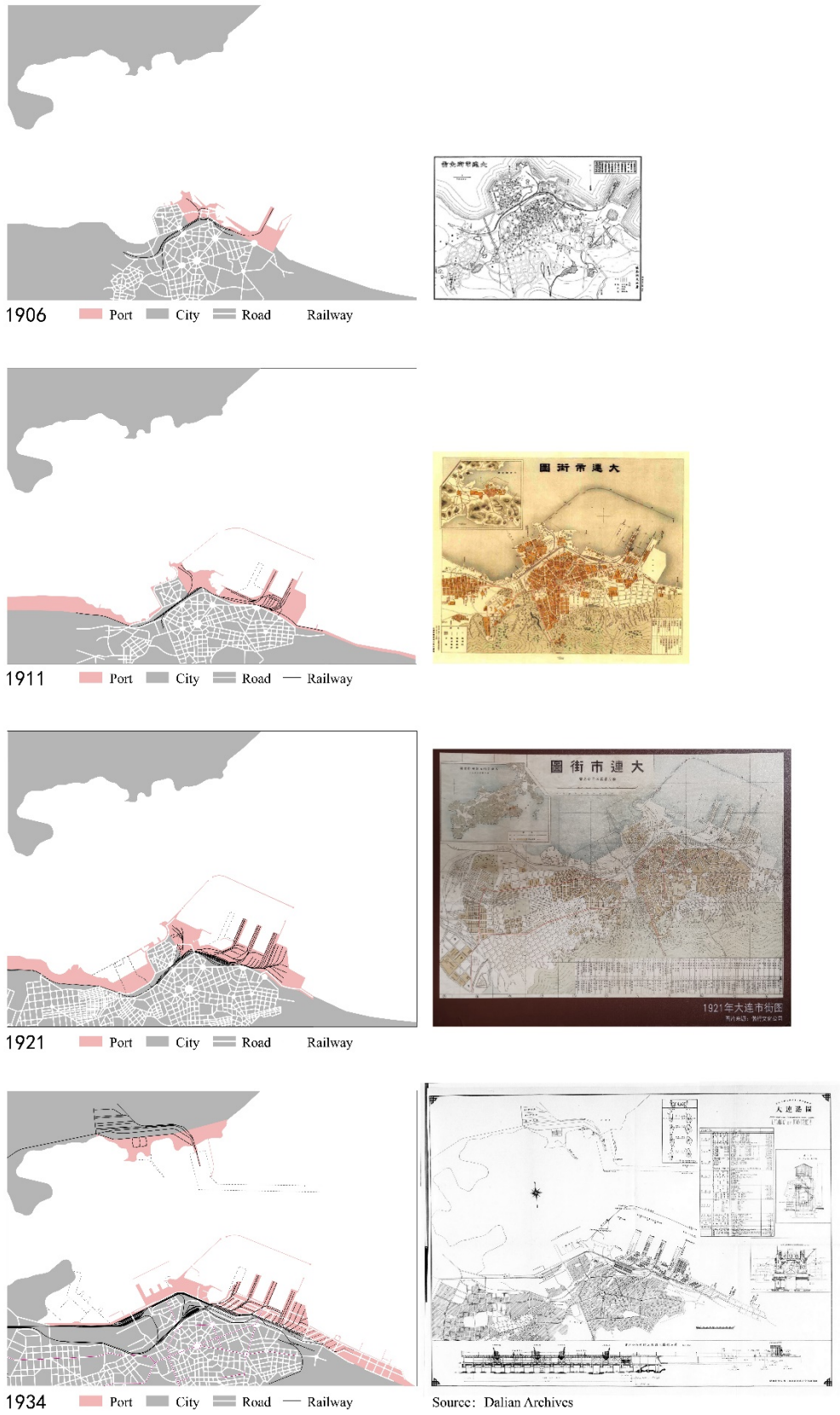

Fig. 5: The evolution of Dalian Port and city (1907-1945). (Sources: Author & Dalian Archives).

(3) The gateway/outport (1946-1965)

After the Second World War, Dalian was handed over to the former Soviet Union for a short time in 1949, and officially managed by China in 1951. China adopted the five-year plan model to build and manage Dalian Port. Before the 1970s, the construction of the port area was mainly focused on the upgrading of the core port area. The port was transformed into a roll on/roll off port for general cargo transportation; Other small port areas also had a specialized division: Ganjingzi area was a specialized wharf for coal; Xianglujiao area was for wood operation area; Heizuizi area was still a coastal small ship operation area; Siergou area was for product oil; Nianyuwan area was for crude oil.

(4) The regional port metropolis (1966-2020)

With the upgrading of port technology, the old port no longer meets the demand and gradually withdraws from the dominant position, while the new port began to construct and starts to assume the main port functions.

i. New port construction: after the 1980s, due to the exploitation and construction of Daqing Oilfield, the construction of new ports became inevitable. The port development and construction plan included the development and construction of Dayaowan New Port, and the expansion of Heshangdao Port Area and Nianyuwan Port Area. The old port area still undertook traditional transport tasks, while the new port area gradually undertook new transport tasks (Figure 6).

ii. Function transfer and old port redevelopment: after 2000, with the development of container terminals, the focus of freight transport began to gradually shift from the old port area to Dayaowan New Port. The old port area has declined in function and is already in the core area of the city. It is inevitable to start land redevelopment and rethink the future of the old port area[29] (Figure 7).

In this stage, with the construction of the new port, the new urban area has gradually formed. The old port area has gradually become the core area of the city, and no longer assumes the port function. The port function has transferred to the new port, and the redevelopment of the old port area has become an important topic of urban development.

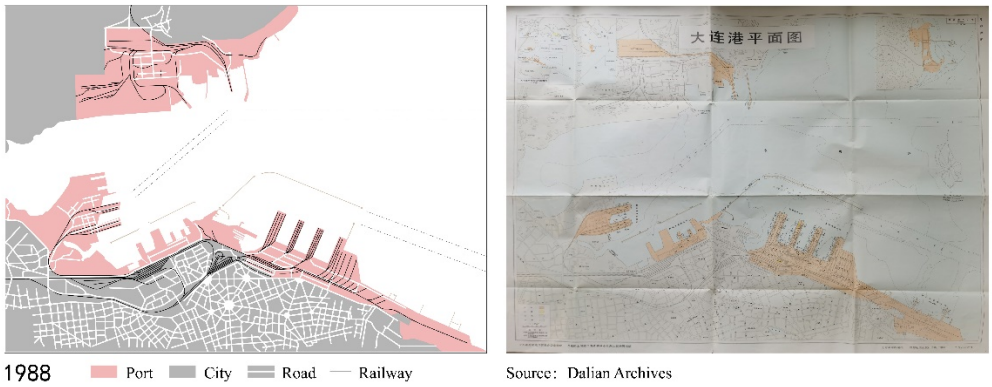

Fig. 6: The evolution of Dalian Port and city (1988). (Sources: Author & Dalian Archives).

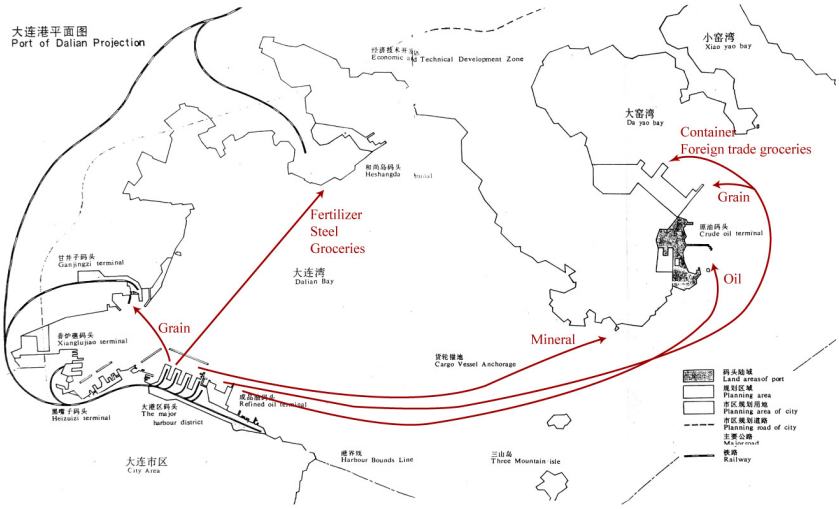

Fig. 7: The transfer of Dalian port functions (1998-2005). (Sources: Author & Dalian Archives).

4.2 The spatial evolution of the port-city interface in the case of Singapore

As early as the 5th century AD, Singapore was a town know as 'Temasek' or 'sea town'. By the second half of the 13th century, 'Temasek' had its name changed to 'Singapura', which was a small city-port. During the 14th century, Chinese seafarers discovered the passageway now well known as the Keppel Harbour Channel. The waterway emerged as a well-defined route in the 16th century when Portuguese mariners travelled frequently through the Malacca Straits and the South China sea. With the discovery of the route through the Singapore Main Strait in the 17th century, the route through the Keppel channel gradually passed out of use so that, by the beginning of the 19th century, it was virtually forgotten. Thus it was unknown to Stamford Rafles when his hydrographer surveyed Singapore Harbour in 1819 (Figure 8).

(1) From the small port-city to the modern free port (1819-1932)

i. Colonial river free port (1819-1860): The modern Port of Singapore traces its origins to the lower reaches of the Singapore River, where it developed and flourished for the first forty years of the settlement's history. In 1819, Stamford Raffles arrived off Singapore to establish a trading station for East India Company, and he had decreed the port as a free port and a trade thereof which is open to ships and vessels of every nation free of duty equally. The administration of the port was vested in the Master Attendant (Harbour Master). By the early 1840s, the population of the river consisted entirely of lightermen and their lighters following the development of the river as the main commercial center of Singapore.

Although there are still rural areas in the outer suburbs of the city, with the formation of the modern ports, modern towns in Singapore began to take shape, many waterhouses and boatyards appeared at Boat quay, Collyer quay, Telok Ayer and Tanjong Rhu. There is also a large amount of space in urban areas to serve ports, such as the commercial square, now known as Raffles Place.

ii. The New (Keppel) Harbour (1860-1932): As port traffic increased, so too did the problem of lighter congestion in the Singapore River. The situation was aggravated in 1845 when the Eastern Steam Navigation Company and the Peninsular & Oriental Steam Navigation Company (P & O) started the first scheduled steamship services through Singapore. The original sailing dock and narrow river channel no longer meet the demand for coal transportation. The answer lay in a deep-water berth, the natural site being somewhere along the northern shore of New Harbour, surveyed by J T Thomson in 1849. By 1852, the P&O Company had opened a coal store and wharf at Tebing Tinggi, and New (later, Keppel) Harbour was on its way to becoming the major gateway of the Port of Singapore. With the development of this process, some other port companies have also developed special terminals in coastal areas: The Tanjong Pagar Dock Company (opened in 1866) built the Victoria Dock in 1868; The Patent Slip & Dock Company opened the Albert Dock in 1879.

With the development of New (Keppel) Harbour for ocean- going vessels, the Singapore River remained the smaller coastal veusels. It was necessary to reclaim the urban transportation system connecting river and harbor, which ware linked by two dirt roads. The first phrase of Teklok Ayer reclamation (1887) included Teklok Ayer Street, Keppel Road and Tank Road-Kranji Railway, then the second is Detached Mole in 1914.

(2) The global hub port-city (1936-2005)

Due to geographical location, free port policy, commercial policy and other factors, Singapore Port had quickly developed into a regional hub port. The main construction in this period included King's Dock, modernism of the lighthouses, signal stations and navigational aids which resulted in the improvement of

wharf specialization. During the Pacific War (1941-45), more than half the port facilities were damaged. When the government resumed control in 1946, the first task is to reconstruction the port and its labor force.

The decade of the 1960s was a period of adjustment and development for the port as a result of Singapore's independence and its industrialization program, reflected not only in increased imports of heavy machinery and capital goods but also in the increased exports of locally manufactured products. This trend has driven Singapore to respond to new port technologies and constantly build new ports. Port of Singapore authority (PSA) took over the control of the port in 1964. Since then, Singapore has developed Jurong Port (1965), Sembawang Wharves (1971), Tanjong Pagar Container Terminal (1972), Pasir Panjang Wharves(1974). Telok Ayer Basin has been reclaimed and cargo-handling operations ceased in 1983[30].

In this stage, with the option of industrialized and export-oriented economy, Singapore port has also developed into a global port. The development of the city has gradually moved away from the ports, and the original function of the old port area has also stopped which has been transformed to the core commercial area of the city.

(3) The global gateway/outport (2005-2020)

In the 20th century, with the continuous development and expansion of the city, Singapore no longer fully relies on the port, and its RCI value continue to decline, which will gradually develop into gateway/outport, and then to global port metropolis in the future. In addition, the scale of port and city will be larger than Dalian.

Fig. 8: The evolution of Singapore Port and city (1819-1960). (Sources: Author & Singapore Archives)

5. CURRENT STATUS AND WATERFRONT RIVIVAL OF OLD PORT AREAS IN DALIAN AND SINGAPORE

With the gradual withdrawal of the port function of the old port area, Dalian Port began to redevelop the eastern area of the old port in 2010 to build it into a tourist attraction, a sailing base, a senior business district and a residential area for tourism and real estate. Some historical buildings in the port area have also been transformed into entrepreneurial industrial parks. However, so far, the degree of reuse of the old port area is not high, the current economic benefits are low with many lands are still abandoned and vacant (Figure 9/10).

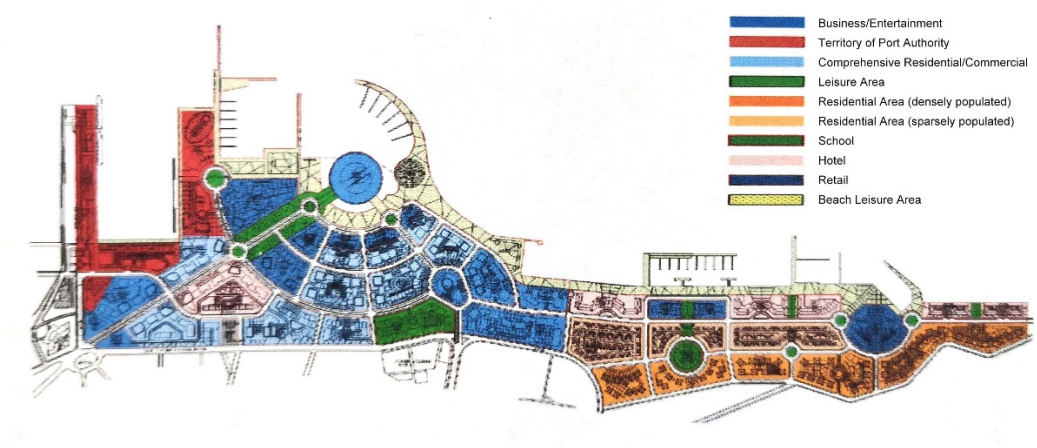

Fig. 9: The redevelopment planning of Dalian Port eastern area. (Sources: Dalian Archives).

Fig. 10: The current status of Dalian Port. (Sources: Author).

However, Singapore began to transform the Singapore River around the 1960s. With the participation of government departments and the community, Singapore gradually redevelop and conserve the Boat Quay, Clarke Quay and Robertson Quay. The First phrase is to clean up the river; and then to make a detailed transformation plan; the second is to protect ecology and water resources; last but not the least, to plan for people[31]. Now, Singapore River and Telok Ayer Basin have become economic and political core regions of the city. There are some successful experiences that Dalian can learn from: (1) visionary leadership and far-sighted planning; (2) leveraging on the private–public–people sector synergies; (3) Restoring and maintaining

water quality; (4) restoration of the historic fabric as a character-giving asset; (5) encouraging mixed use; (6) providing for easy public access[32] (Figure 11/12).

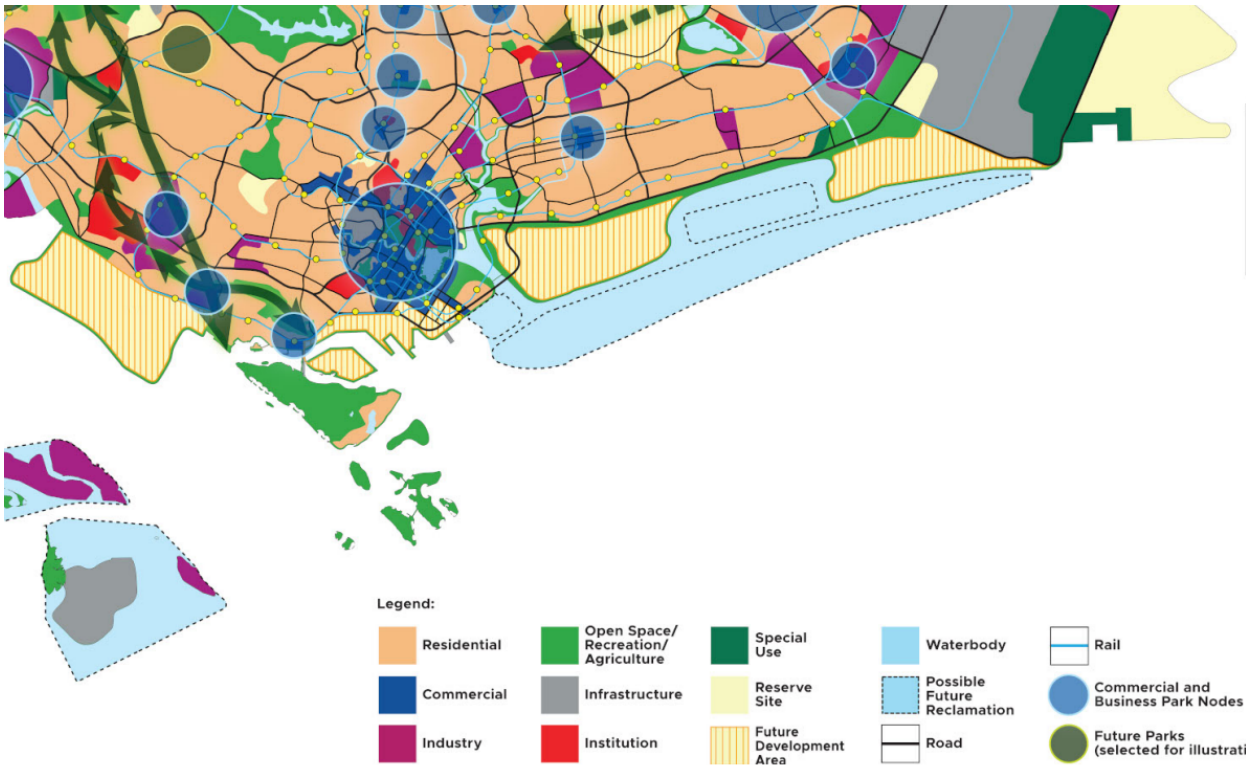

Fig. 11: The long-term plan of Singapore. (Sources: https://www.ura.gov.sg/Corporate/Planning/Long-Term-Plan-Review/Space-for-Our-Dreams-Exhibition).

Fig. 12: The current status of Singapore. (Sources: Author)

6. CONCLUSION

There are some characteristics different from those of western port-cities are reflected in Asian port cities such as Dalian and Singapore. First of all, because of theirs superior geographical location, they were chosen as the tools for colonists to plunder resources, which made them develop from a fishing village or a small

port town into a modern port-city. In the early period, they adopted the means of free port trade, which greatly promoted the development; the centralized construction for a period of time has made them a hub port, and then a gateway. The port function played a leading role and driven other industries in the city. With the process of industrialization and urbanization, the port-cities are gradually no longer completely dependent on the ports, and the original old port areas have gradually withdrawn from the historical stage, while the redevelopment of the original waterfront is a hot research topic at present. Where the old port area will go has become a follow-up issue to be discussed. The new ports are mostly built in the edge of the city, which are closely related to the development of the new urban area.

Compared with Dalian Port, Singapore has a more prominent port function, which has dominated the overall development of its city for a long time. However, Dalian has experienced more stages of development within a hundred years.

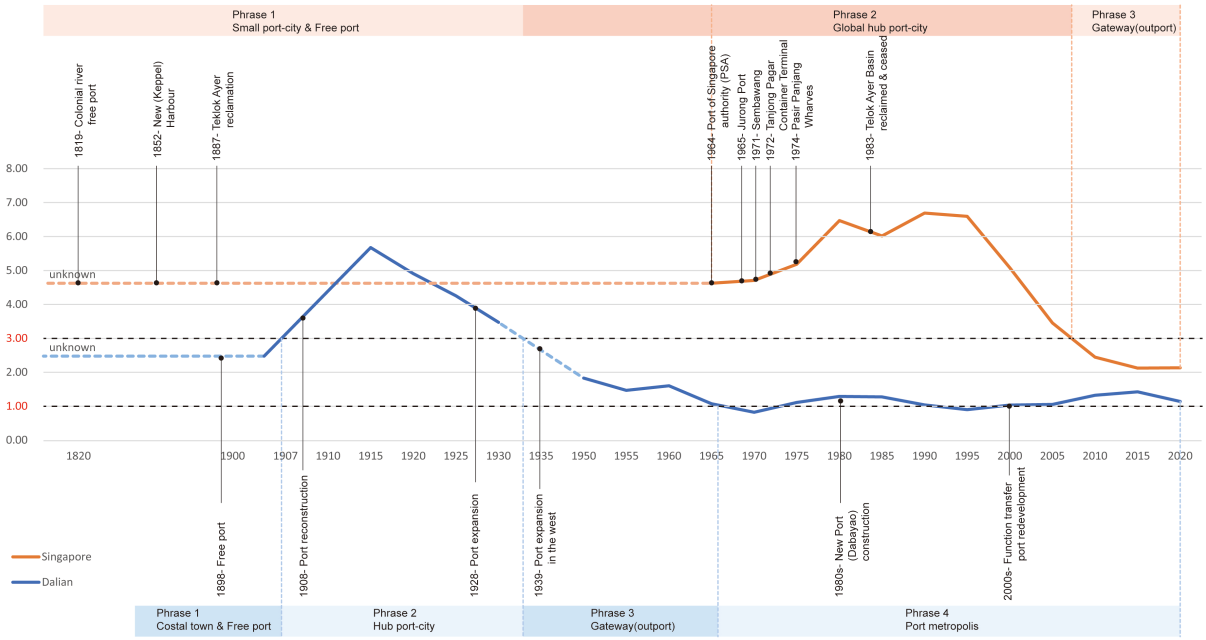

Fig. 13: The evolution model of the port and city in Dalian and Singapore. (Sources: Author).

NOTES AND REFERENCES

[1] Forward, C. N. "A comparison of waterfront land use in four canadian ports: St. John's, saint john, halifax, and victoria." *Economic Geography* 45.2 (1969): p.155-69.

[2] Kilian, Darryll, Dodson, Belinda. "Between the devil and the deep blue sea: Functional conflicts in cape town's victoria and alfred waterfront." *Geoforum* 27.4 (1996): p.495-507.

[3] Hein, Carola. "Port cities and urban waterfronts:how localized planning ignores water as a connector." *Water*3 (2016): p.419-38.

[4] Hoyle, B. S., Pinder, D. A. *Cityport industrialization and regional development : Spatial analysis and planning strategies*. Oxford: Pergamon Press, 1981.

[5] Notteboom, Theo E. "Concentration and load centre development in the European container port system." *Journal of Transport Geography* 5.2 (1997).

[6] Bottasso, Anna, et al. "The impact of port throughput on local employment: Evidence from a panel of European regions." *Transport Policy* 27. (2013).

[7] Ducruet, César, Lee, Sung-Woo. "Frontline soldiers of globalisation: Port-city evolution and regional competition." *GeoJournal* 67.2 (2007): p.107-22.

[8] Bird, James. *The major seaports of the united kingdom*. London: Hutchison, 1963.

[9] Hoyle, Brian. "Global and Local Change on the Port-City Waterfront." *Geographical Review* 90.3 (2000): p.395-417.

[10] Lee, Sung-Woo, et al. "A tale of Asia's world ports: The spatial evolution in global hub port cities." *Geoforum* 39. (2008): p.372-85.

[11] Bird, James. *Centrality and cities*. London: Routledge & Kegan Paul, 1977.

[12] Hoyle, Brian. "East african seaports：an application of the concept of 'anyport'." *Transactions of the Institute of British Geographers* 44 (1968): p.163-83.

[13] Notteboom, Theo E., Rodrigue, Jean-Paul. "Port regionalization: Towards a new phase in port development." *Maritime Policy & Management: The flagship journal of international shipping* 32.3 (2005): p.297-313.

[14] McGee, T. G. *The Southeast Asian city : A social geography of the primate cities of Southeast Asia*. London: G.Bell and Sons, LTD, 1967.

[15] Kosambi, M. "Three colonial port cities in India." *Geographical Review* 1 (1988): p.32-47.

[16] Ford, L. R. "A model of indonesian city structure." *Geographical* 4 (1993): p.374-96.

[17] Ducruet, César. "Port cities, laboratories of globalization.": *Le Havre University*, 2004.

[18] Fleming, D. K., Hayuth, Y. "Spatial characteristics of transportation hubs: Centrality and intermediacy." *Journal of Transport Geography*2 (1994): p.3-18.

[19] Hoyle, B. S., Pinder, D. *European port cities in transition*. London: Belhaven Press, 1992.

[20] Murphey, R. "On the evolution of the port city." *Brides of the sea: Port cities of Asia from the 16th-20th centuries*. Ed. Broeze, F. Honolulu: University of Hawaii Press., 1989. 223-45.

[21] Charlier, J. "Ports en e´volution, espaces en mutation.". *1st International Conference of the International Association Cities and Ports*. Le Havre, 1988.

[22] Vallega, A. "Fonctions portuaires et polarisations littorales dans la nouvelle re´gionalisation de laMe´diterrane´e, quelques re´flexions". *2nd French-Japanese Geographical Colloquium*. Tokyo, 1979.

[23] Qiang, Wu. "The revolution of port-city relationship in modern China (1916-1936): The analysis to the Relative Concentration Index as the example." *Journal of Chinese Historical Geography* 27.2 (2012).

[24] F, Richthofen V. *Au f gaben und Methoden der heutigen Geographie*. Berlin: Inaugural Lecture, 1883.

[25] Conzen, M. R. G. *Alnwick, Northumberland: A study in town-plan analysis*. London: Institute of British Geographers, 1969.

[26] Jiang, Yaohui. 蒋耀辉：*《大连开埠建市》*，大连：大连出版社，2013

[27] Guo, Tiezhuang, et al. 郭铁桩等：*《日本殖民统治大连四十年史 上》*，北京：社会科学文献出版社，2008

[28] Zhou, Yonggang, et al. 周永刚等：*《大连港史（古近代部分）》*，大连：大连出版社，1995

[29] Wang, Peiping, et al. 王佩平等：*《大连市志 港口志》*，沈阳：辽宁民族出版社，2003

[30] Port of Singapore Authority, *Singapore : Portrait of a port : A pictorial history of the port and harbour of Singapore 1819-1984*. Singapore: MPH Magazines, 1984.

[31] Auger, Timothy. *A river transformed : Singapore River and Marina Bay*. Singapore: Editions Didier Millet, 2015.

[32] Chwee, Lye Low. "Singapore river: Six strategies for sustainability." *Spatial Planning for a Sustainable Singapore*. Singapore: Springer Science, 2008. 79-92.

Traditional Dwellings and Settlements
Working Paper Series

A WORLD OF THOUSAND INDEPENDENT REGIONS: TRANSFORMING THE WORLD TO SMALL COUNTRIES AS "INDEPENDENT REGIONS"

Hans Joachim (Hajo) Neis[1,2], Pamanee Chaiwat[3]
[1]University of Oregon, Portland, [2]CES Berkeley, [3]University of Oregon, Eugene, United States of America

Volume 320
Pages 47-72
2022

A WORLD OF THOUSAND INDEPENDENT REGIONS
TRANSFORMING THE WORLD TO SMALL COUNTRIES AS "INDEPENDENT REGIONS"

◆ ◆ ◆

This paper proposes a fundamental socio-spatial alternative for reorganizing our world structure, countries and regions, which can help and support the ever-increasing number of refugees and, at the same time, can try to reduce or even eradicate the human-made refugee problem altogether. When the idea of 'Independent Regions 'is put into the context of refugees, it presents itself as a necessary alternative to the current imbalance of few large and dominant countries in contrast to a large number of smaller countries. ***First,*** *we look at the best that current countries or groups of countries can provide for refugees based on the Geneva Refugee Convention from 1951.* ***Second,*** *we explore an alternative, that is based on fundamental principles of 'Independent Regions' with an ideal population size for governing itself, that has the potential to reduce the root problem of refugee creation of big countries vs small counties.* ***Third,*** *we investigate how to transition existing structures of countries to form 'A World of Independent Regions' in Europe, United States, Middle East and Northern Africa. We conclude that a world of 'Independent Regions' provides a stronger potential to deal with contemporary issues and problems facing the world than the current system.*

1. INTRODUCTION

The paper 'A World of Thousand Independent Regions,' emerged out of a larger project, entitled: "The Sugar in the Milk - A Refugee Pattern Language," (RPL). Chapter Three confers patterns of countries and independent regions that help refugees to survive and start a new life. The paper presents three patterns which explore the ideas of "Welcome Countries" and "Independent Regions." The two concepts are juxtaposed as well as combined with welcome country as a qualitative and desirable characteristic of existing countries and with the independent region conceived as a new small country-like entity forming the building block of a new world structure and replacing the old imbalanced one - as a necessary alternative to the current imbalance of few large and dominant countries in contrast to the overwhelming number of smaller countries. The absence of very large countries would make it much more difficult to invade and bomb another smaller country to rubble. Potentially, the structure of 'Independent Regions' could make it possible to reduce the refugee problem drastically – and it also might solve or ameliorate a number of other large world problems.

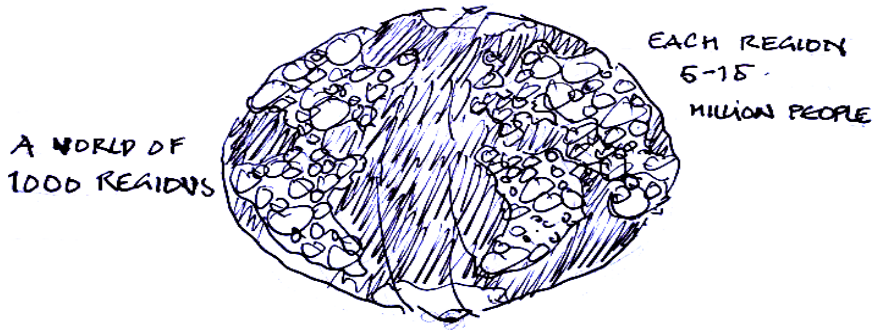

Fig. 1: A World of Thousand Regions with Each Region 5-15 Million People.

'Welcome Countries – Independent Regions' is focusing on the small country and regional scale to identify possibilities for improving regional structures, administration, organization, and encouraging productive innovation that may be helpful and useful for refugees, reduce refugees, in fact welcome refugees. While we present the first three patterns of this enquiry, there are nine additional patterns that address internal qualities as well as external qualities as aspects of refugee related issues at the level of countries. The paper ends with conclusions that propose to continue the promising research on 'Independent Regions' as a solution for the large problems in our new problematic world, including specifically the relevant problem of wars that create refugees.

Fig. 2: APL1 independent regions + RPL3.2 a world of thousand independent regions.

2. BACKGROUND

While the specific study focuses on 'A Pattern Language for Refugees,' the general backgrounds of these studies are located in the areas of architecture, urban design, urban and in particular regional planning, as well as philosophical and humanistic aspects. The architecture and urban school of thought related to this work can be found in the work of Chris Alexander and members of the Center for Environmental Structure in Berkeley, and related authors, thinkers and producers. Here a tri-part book series which centers around 'A Pattern Language[1],' turned out to be relevant for the particular larger project of 'A Refugee Pattern Language' as well as for this particular paper. The origin of the idea of 'independent regions' can be found in the politico-geographical studies of concerned citizen and scholars, particularly in England and France, who looked for solutions for the best structural organization of the world that includes the study of 'independent regions.' While our concern addresses un-apologetically all countries around the globe, the original idea started in Europe after WW II. "*Authors like Leopold Kohr, Dennis de Rougemont or Guy Heraud constitute the key players in what can be considered here as the 'prehistory' of contemporary political opinions…of 'Europe of the Regions.*[2]*"*

2.1. Methodology and Format

Pattern Languages were first developed as theory and method in *The Timeless Way of Building*[3] and *A Pattern Language*, APL, and are now used in many disciplines, from social sciences to the computer software industry. The theory of Pattern and Pattern Language looks at elements and connections of spatial characteristics that embrace qualities of places and events. As a research method, the process starts with a recognition of a particular recurrent problem then formulated into a research question or problem which are pursued by using analytical, empirical, and other methods and techniques appropriate for the question. Subsequently, researchers formulate an answer or a partial answer that solves the problem based on evidence of their research. This solution must be evaluated to assure that by solving a particular problem it also is a positive solution that improves the wholeness of a situation. Each pattern is then connected to already existing patterns to create a language.

For the 'Refugee Pattern Language' (RPL), the urgency and severity of 2015 global refugee crisis call attention towards this matter as planners and architects. Witnessing reoccurrences and continuation of human migrations and refugee resettlements, suggested to employ Pattern Language theory and method in this context. We collect data, use and analyze case studies from different waves of migrations from post WWII to contemporary refugee groups under different constraints and opportunities. Patterns of sequences from escaping, resettling, and returning in conjunction with scales of country, city, neighborhood, and building help categorize clusters of patterns. In a domain of refugees, a complex dynamic of host country and refugees require tools that ensure mutual benefits. While assisting vulnerable persons it is important not to be destructive to a host society but rather promote equity and endorsed coinciding interest for both sides.

Cluster 3 'Welcome Countries – Independent Regions' addresses multi-level development opportunities that groups of people and associations can accomplish, professionals should practice, and authorities ought to support. Connecting these patterns to APL, RPL, and other PPLs gives a more complete picture of the richness of this system and shows limits and shortcomings. The presentation is conducted in the original pattern format: Problem – Text – Solution/Suggestion and links are essential to form a PL. Here is the list of patterns within cluster 3, in addition to the first three patterns, that form the core of this paper:

Cluster Three: Full List of Patterns

- **3.1 Welcome Countries - Refugee Declaration 1951 (1967)**
- **3.2 A World of Independent Regions – and Refugees**
- **3.3 From Countries to Independent Regions**
- 3.4 Walk-To Migration Countries
- 3.5 Immigration Resettlement Countries

3. RESULTS AND DISCUSSIONS

Cluster 3: Welcome Countries - Independent Regions

RPL 3.1 Welcome Countries - UN Geneva Refugee Convention 1951 (1967)

Links: APL1 INDEPENDENT REGIONS may offer a solid and serious but also visionary alternative to the current highly unbalanced world system. APL8 MOSAIC OF SUBCULTURES alludes to the possibility of bringing cultures, regions, and countries into balance with each other…

Problem: **A welcome country is positive and open to support and welcome refugees. It also helps if a country provides an infrastructure and safety-creating processes such as asylum and social services. Unfortunately, not all countries are welcoming to refugees or provide asylum services.**

Fig. 3**:** Crowds of people at Berlin Station are offering places to arriving Ukrainian refugees. (Reuter, 2022).

In the United Nations Geneva Refugee Convention of 1951, for the first time, an international agreement was reached and signed by 149 of the 193 countries acknowledged by the UN[4]. This first agreement only

applied to countries affected by war in Europe and was later extended to the rest of the world by the so-called 1967 Protocol. This international law and its extension acknowledged basic rights of refugees, such as, not deporting them, and giving them a fair hearing for the right of asylum. There are countries, where the population as well as the government is very positive and empathetic to refugees. They try to help forced migrants beyond the call of duty. These countries may be described as refugee welcome countries. However, not all of the 149 countries who signed this convention felt obliged to actually follow the paragraphs of the convention or follow it at all. On the other hand, for the time before the Ukrainian invasion by Russia, we can count a number of countries that take particular care of refugees, such as Sweden, Germany, Austria and a few other European countries as well as the US, Canada, and to a degree Australia. And it is also not surprising that these countries are attractive to refugees so that they become preferred countries, that means refugees will transit several other countries to try to get to these 'special' countries, because they 'have heard good things.' However, it does not mean that countries without formal convention procedure are necessarily unhelpful to refugees - to the contrary as Egypt shows with its open system of receiving neighboring refugees.

Let us try to explore this empathetic view with the help of the asylum tool and some facts on people voting with their feet. In the early days of the Refugee Convention, asylum was not used much because with war and disaster events such as the Hungary uprising in 1956 all people who escaped to Austria and other places, were regarded outright as refugees without the need for a bureaucratic asylum procedure. The same is true for all the Vietnamese boat refugees between 1975 and 1989 as well as more recently for all the refugees from Syria arriving in neighboring Turkey; they were considered refugees outright with not much need for asylum procedures. In fact, this is how most people understand refugees. There is a war or disaster, and people have to flee internally to other places or externally to other countries, and that is how refugees come about. A simple clear picture and understanding.

But this perception and reality has changed in the last decades and years, as most European countries, the US, Canada and a few other countries are using the Asylum Protocol more frequently. *"The meaning of asylum procure is to apply binding criteria to single persons to determine who cannot be returned to the country of origin, because then persecution or serious damage may occur back in the homeland.[5]"* In other words asylum provides a system of insurance of safety for the individual refugee, and a guarantee for the host country, that only 'real' refugees are accepted into one's country. Using this modern system of asylum guarantees the following statistics of asylum applications emerges:

COUNTRY	ASYLUM APPLICATIONS
Germany	1,944,549
The United States	1,475,194
Turkey	608,550
France	601,897
Italy	504,035
Peru	491,994
Russia	487,701 (based on Russian Annexation of Crimea in 2014)
Sweden	346,549…

Table1: UNHCR: Asylum Applications world-wide top countries 2013-2019[6].

The asylum application process is one indicator of a welcome country, but since many countries take in refugees without any asylum procedures, it is not the only indicator on a comparative basis, because not all countries follow the same or similar protocol. Some countries do not take in any refugees at all, including powerful countries such as China. While the existence of an asylum system by itself is an indicator of fairness to refugees, a positive attitude inside a society as well as a practical and positive policy of any government are also indicators for a welcome country not to forget the impact of the media. Starting with the idea of 'welcome culture' in Germany, researchers looked at the way *"citizens and refugees interact and integrate, with a focus on the social-spatial aspects of refugee experiences and the impacts on urban planning policy*…[7]*"* When there is a negative perception, political moves to welcome refugees will receive harsher push back. But with a positive attitude people are willing to take action even without governmental support. Proceeding with the current situation and with refugees generated by the war in Ukraine this situation has dramatically improved.

LIST 1
Poland
Czech Republic
Slovakia
Hungary
Romania
Moldavia (not part of EU)

LIST 2
Germany
France
Austria
Denmark
Sweden
England

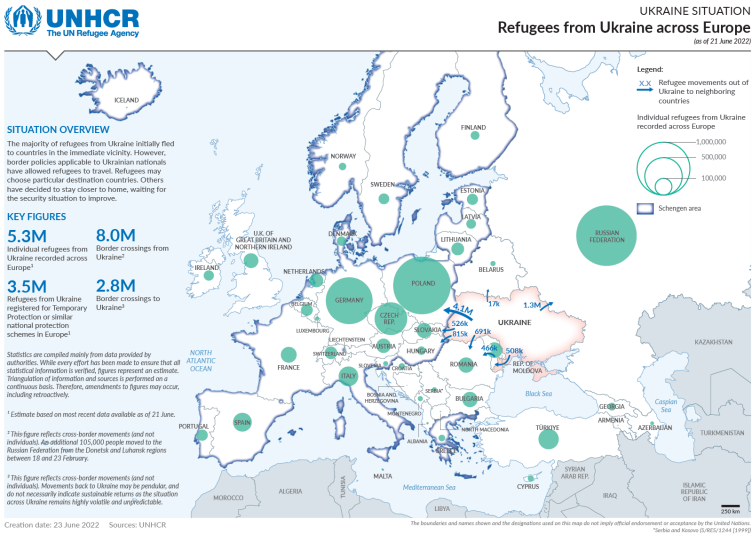

Fig. 4: Map of Europe with Ukraine and refugee movements. (https://reliefweb.int/map/poland/ukraine-situation-refugees-ukraine-across-europe-21-june-2022). Most refugees escaped to countries directly adjacent to Ukraine, with Poland welcoming more than 1.5 million people by itself early in the war (List 1) and later many refugees transitioned to other countries further away (List 2).

Fig. 4 and the lists imply that one did not have to wait until each and all 27 countries would declare their official policy individually, because in addition to the Geneva Convention, a totally new kind of policy was announced in unison which is much more progressive compared to what the Geneva Convention provides. The EU "Temporary Protection Directive" for Ukraine refugees shows us that an advanced understanding can be reached, that creates immediate help with a unified decision in 27 countries and permits refugees to freely travel and look for housing, work, and social support in all EU countries.

Fig. 5: Visit to a Ukrainian mother with her two sons in the town of Borken, Germany. The mother bought her eldest son Vlad Vostik sandals with the word 'PEACE' engrained. He is becoming 18 years old and needs to decide if he wants to join the war as a soldier. (Photo: L. Hoefling 06-30-22).

Therefore:

Strategize your country (or 'Independent Region' if applicable) in a way that it always has the capacity to welcome refugees. First, refugees will get formal protection under the asylum status, according to the non-refoulment clause in the Refugee Convention. It means to take care of refugees, not deport them, and even if they are not granted legal asylum status, one could try to help them with subsidiary status and support and practical help. Employ the existing social system in your country to support refugees, or even improve the system. Keep in mind that welcome takes place at the policy level, and public opinion but also media as well as personal level. Most important, take yourself part in helping refugees directly, within your community, within your clubs and social life and with your personal care, to make people welcome, but also to make people feel at home... which can last longer than welcome alone.

Links: RPL3.2 A WORLD OF INDEPENCENT REGIONS AND REFUGEES…can strengthen RPL3.1 WELCOME COUNTRY as well as RPL3.4 WALK-TO COUNTRIES…RPL3.6 TAKING IN A MILLION PEOPLE…RPL3.9 MULTICULTURALISM…

RPL 3.2 A World of Independent Regions - and Refugees

Links: RPL 3.1 WELCOME COUNTRIES is relevant for APL1 INDEPENDENT REGIONS as a major characteristic of providing help and showing sympathy and empathy to refugees. It is also applicable for RPL 3.2 A WORLD OF INDEPENDENT REGIONS – AND REFUGEES for supporting other regions and helping each other.

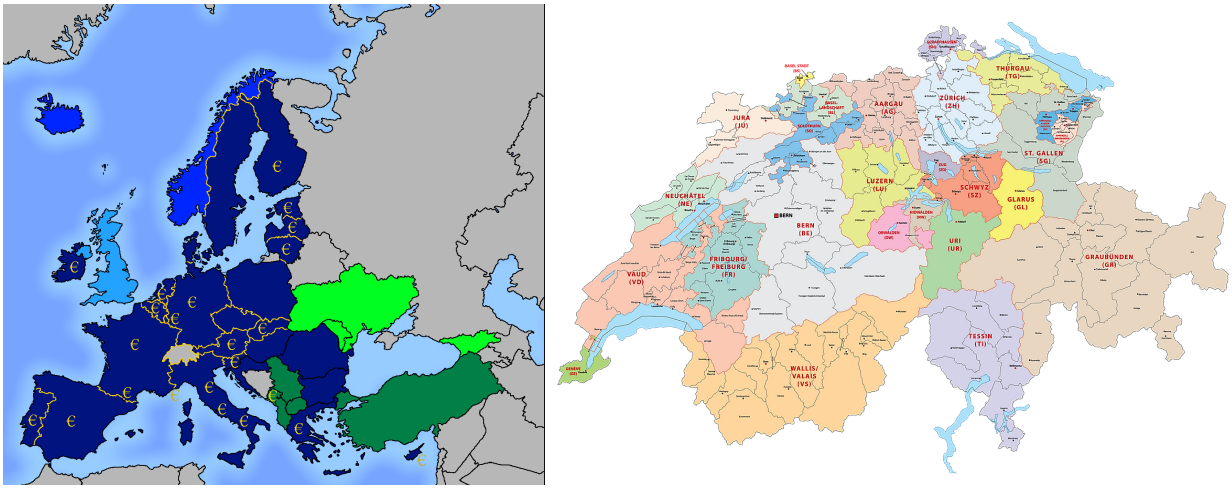

Fig. 6: **(Left)** Map with EU Countries in dark blue with "Temporary Protection Directive" for Ukraine refugees who can move freely in and between all countries, they are free to work, receive housing and social benefits with Switzerland as a neutral country being embedded in EU countries. (www.reddit.com). **(Right)** Map of Switzerland as a theoretical example of a potential new Independent Region IR with cantons as the basic geographic unit of governance (https://www.worldatlas.com/maps/switzerland#admin1Section).

Problem: What are Independent Regions? How could a world of Independent Regions help to restructure and improve our life on earth so that large-scale world problems, such as the ever-increasing refugee crisis could be drastically reduced or avoided altogether? How can independent regions participate and be instrumental in solving refugee problems?

Based on the 1951 Refugee Convention and its 1967 Protocol, one could suggest or better request, that the remaining 46 countries, who had not signed, should finally sign the Convention and the Protocol for full support of refugees world-wide, and for a better coordination between all countries. But that may not work in the current state of how the world is organized, where a few very large and powerful countries can dominate the world by their raw power, and by their veto right in the United Nations.

As the engineer-architect Buckminster-Fuller would argue, do not stay with criticizing the past, but propose a new and better system. New proposals range from Boris Johnson's idea to encourage women to become prime ministers for avoiding war and hardship[8] to 17-year-old refugee Vlad Vostik's proposal to eliminate all

weapons and wars[9]. Here, we explore the question on a structural level as proposed in the pattern "Independent Regions[10]". The argument asserts that the world should be regrouped in 'thousand' regions, and it is anticipated that the restructuring will include significant improvement of world balance and cooperation for solving large scale problems, which would include considerable reduction of refugees. First, this could simply be so because independent regions are easier to govern democratically than the larger country system. Second, this new system would protect smaller countries who in the current system of large countries are vulnerable and risk becoming invaded, resulting in large numbers of refugees.

First, let us proceed, one by one, with the 'raison d'etre' of new independent regions. "Metropolitan Regions will not come to balance until each one is small enough and autonomous enough to be an independent Sphere of Culture.[11]" Four separate arguments for independent regions have been made (APL pp. 10-14) and two new arguments relevant for inner strength of each IR are added regarding the need and ability of Independent Regions to cooperate and work together.

1. The nature and limits of human government.
2. Equity among regions in a world community.
3. Regional planning considerations.
4. Support for the intensity and diversity of human cultures.
5. Resilience of each Independent Region
6. Cooperation between Independent Regions

To 1. The nature and limits of human government is probably the strongest argument, because it determines the population size of independent regions, so that it may be able to govern itself effectively in a way that all people can participate, still being truthful to direct democracy. The biologist J. B. S. Haldane asserts the following: "…just as there is a best size for every animal, so there is a best size for every human institution. In the Greek type of democracy all the citizens could listen to a series of orators and vote directly on questions of legislation. Hence their philosophers held that a small city was the largest possible democratic state…[12]"

Governments of a Region become less manageable with population size increase because of less direct communication and at a certain level effective governing may break down. While the original APL estimate was 2-10 million per IR[13], other proposals agreed to the number 12 million but in order to "give it more flexibility" some also added 5-15 million as a reasonable alternative[14]. We partially work with the increased number of 3-12 million, but also use higher numbers when appropriate. Numbers apparently can or need to increase for two reasons: first, because there are many more people in the world today than in 1975. In fact, the world has more than doubled in population since 1975 from about 3 billion to 7.8 billion in 2022.

Second, according to various world demographic development calculations there will be around 10 billion earth inhabitants by mid-century before the world population increase will level out, so that the IRs may have to absorb more populations than ideal numbers suggest. Finally, we need to consider how modern tech-media systems can be used to improve direct democracy for direct plebiscites (Volksabstimmungen) or other large scale democratic involvements that affect refugees' integration decisions. Modern media-technology might increase the permissible IR population number considerably, but we also need to be careful to make sure that democracy can still function when there are major cliches or problems because of refugee arrivals. Here we follow the number 3-12 million with a flexible 5-15 million.

2. Equity among independent regions in the world may also be easier to establish and keep up with independent regions rather than unequal countries, especially when they are all relatively limited in the size of their population. However, when they are too limited in population, they may not have an equal say in a world government, so that they might need a minimum of 2-3 million population. Lord Weymouth of Warminster, England, makes the following point: World Federation: A Thousand States:

> "Working backward from an estimate of the global population in the year 2000, which is anticipated to rise to 10,000 million mark (10 billion H.N.), I suggest, that we should be thinking in terms of an ideal regional state of something around ten million, or between five and fifteen million, to give greater flexibility. This would furnish the U.N. with an assembly of equals of 1000 regional representatives: a body that would be justified in claiming to be truly representative of the world's population."
> Letter to *New York Times*, March 15, 1973[15]

Overall, and with the right size, independent regions can govern themselves more efficiently but also more democratically in a world of thousand regions or metropolitan areas, as for example in newly converted IR's such as the future 'IR of Switzerland' with a long democratic tradition since 1848, but also including the new 'IR Singapore,' with a more recent democratic tradition. It is certainly easier to govern democratically on the regional level than on the scale of huge countries like the US or Russia, even China or the UK or Germany. This is so because the demands of direct democracy need a rather developed social system built on freedom of press, citizen responsibility, the rule of law, and free and open elections with different independent parties. To conclude: Equity among independent regions would be most effective if all IRs have just one vote each in a World Federation of Thousand Regions, and when IR's are roughly about the same size in population and importance.

3. Regions need to govern their own territory so that they can solve their environmental as well as other problems based on deep knowledge of their land, cities, and the countryside. Arbitrary boundaries of states and counties that cut across natural regional boundaries, make it quite difficult for people who want to solve regional problems. This means that regions have to be based preferably on natural boundaries, such as geographical qualities like rivers, oceans, forests, as well as ecological, economical, and social-cultural qualities. With regard to forced migrants and refugees, independent regions need to be able to plan and have plans in place that deal with emergencies such as a sudden refugee crisis based on natural or man-made disasters.

French economist Gravier has proposed in a series of papers and books the idea of a Europe of the Regions which cross present national and subnational boundaries as for example the Basel-Strasbourg Region which includes parts of France, Germany, and Switzerland[16]. See: Jean Francois Gravier "L'Europe des Regions," in 1965 Internationale Regio Planer Tagung, Schriften der Regio, Basel[17].

Furthermore, APL provides concrete patterns for Regional Planning[18] :

> "Within [a framework of Independent Regions] each region work toward those regional policies which will protect the land and mark the limits of the city."
>
> a. The Distribution of Towns
> b. City Country Fingers
> c. Agricultural Valleys
> d. Lace of Country Streets
> e. Country Towns
> f. The Countryside

Any of these patterns are appropriate for the distribution and inclusion of refugees into the new land. The 'distribution of towns' is relevant with regard to the widespread distribution of new people, that needs to include the growing population including migrants and refugees to the IR. But also, the pattern of 'country towns' could play a relevant role for the distribution of population and the welcome of new inhabitants such as forced migrants depending on needs of people in agriculture and a possible circular economy. The pattern 'countryside' is most revealing in reminding us of a countryside that belongs to everybody and therefore needs to be carefully organized in a way that promotes agricultural production but also use for all kinds of activities that go beyond a purely utilitarian use of the land as huge fields with no animals, no bees, and no people.

4. Support for Intensity and Diversity of Human Culture: With regard to refugees this is a large and important topic. The first idea is that the widespread distribution of Independent Regions, or small countries, will provide a new space system in which all cultures can find a home within one of these IR's. In fact, many of these new

Independent Regions will be delineated in a way that all and any cultures can find a place within an already existing IR, or they can find a place within a newly emerging IR. In this way they can pursue their own particular culture and continue to develop their own cultural customs in multiple ways. Others may want to develop a new culture in the overall process of human evolution and new needs from the environment. What is describe here is a life of freedom and possibilities in a world of independent regions with the chance for intense cultural life in a variety of diverse cultures, old and new ones.

However, even in a world of independent regions, we cannot exclude that forced migration can occur, less by war but more so by climate change with devastated regions, with no water, or with too much water. For cases like this, there need to be policies and strategies in place, how refugees can be absorbed by independent regions, or how new independent regions may be formed and used by a population that had to give up their own land. The new Island for the Rohingya in Bangladesh may serve here as a small example of how a recent refugee population of almost a million people, can start a new life and home, possibly as the begin of a new independent region.[19]

Meanwhile in the current world, refugees still arrive in many places and they need to be taken care of. The question is how they can continue to develop their own culture within a new land with a new, probably dominant culture, and a new system of life. We assume that there is always some space available for taking in refugees and let them live within a main culture and subcultures.

Resiliency and Cooperation: Here we want to focus on two additional points that have become relevant for today's world of large-scale problems including to solve the larger issues of refugee creation. The deadly nature of large-scale world problems that includes man-made problems such as refugees and other relevant challenges like climate change, the covid pandemic etc. that, have become primary concerns for survival and living together. Therefore, independent regions (and countries alike) are dependent on two main characteristics. First, they need to be more resilient and resistant to large challenges and disasters, and second, they need to cooperate to tackle large issues and challenges.

5. Resiliency: Let us first look at the notion of resiliency, which means something like 'capacity (or toughness) to recover quickly from difficulties[20].' The assumption here is the following. When all or the majority of the world is set up as independent regions or smaller countries, all regions will include all people of the world including the people that otherwise might be in danger to become refugees because of major conflicts. If we have a thousand independent regions that are equally large, and equally well equipped economically, socially, and culturally, they also will be resilient enough to be able to govern themselves and take care of possible future problems, predictable and unpredictable ones.

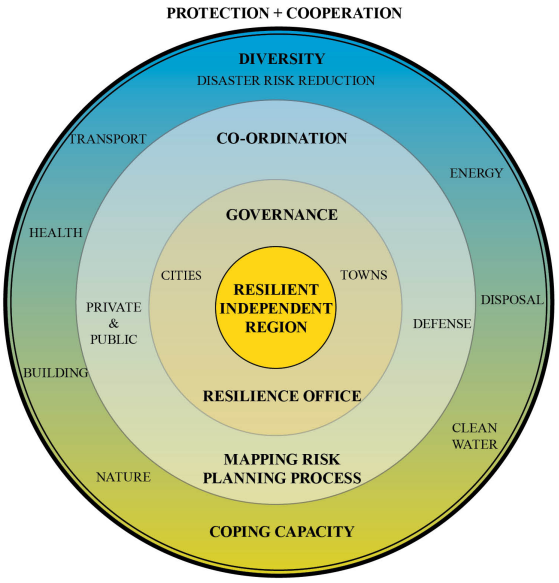

Fig. 7: Diagram of structure and organization of Resilience in a City or Independent Region with emphasis of Governance, Coordination, and Diversity, as well as Protection from and Coordination with the outside.

To establish resilience as an independent region, one has to develop one's own economy, social cohesive structure, safety plans for all kinds of potential disasters that might happen, especially as related to climate change or war and conflict. One might also need some kind of military protection force, may be in the form of the Swiss system, where everybody has to take on obligations, learn some specialized military activities and become part of a territorial organization, to keep the country or IR safe and resilient.

6. Cooperation: When it comes to large world-wide problems the discussion needs to include the function of a World Government of the thousand or so regions and the cooperation between them. While the world government will have important functions that need centralized activities, in various departments, such as UNHCR, WHO, and others, it is also important that independent regions can cooperate naturally with other IR's especially when it concerns refugee issues. In the case of large disasters, man-made or created by climate change or the current Covid 19 pandemic, centralized help may also be desirable The huge scale issue between individual regions and the world government may be be scaled into world regions as regional federations or associations and unions similar to what the EU offers today. It needs to be a system that is based on 'independent world regions,' which are connected to its administrative and human structures through modern democracy and the technical and communicative means to hold it together.

Because of their relative population size with a range of about 5-15 or up to 5-20 million people, independent regions can rely on more internal consistencies, and, at the same time, they can be equal

partners in a world federation or union without huge dominating countries of more than 100 million people or hundreds of millions, or even billions. Independent regions (IRs) therefore can become bulwarks in strengthening their own territories and help areas that have considerable problems and need help in recovery and new strength. IRs can be strengthened in a way that all people will be able to to live at home and do not have to migrate in masses to other regions as forced migrants because they primarily promote peace and discourage authoritarian powers. Finally, they are small enough to not threaten their neighbors as much as large countries can do and they can organize themselves in groups or unions or federations of 'independent regions.'

No matter what, the most important task is to always strengthen independent regions and help to solve problems that challenge IR's in significant ways, such as the ever increasing large scale world problems. With regard to the refugee crisis as one of these large problems, it is important to make sure that IRs are consistently resilient and well maintained to not generate refugees and, at the same time, to accommodate people within their territory, with support and cooperation of other IRs, when needed, and with the help of the world regional federative administration. In case of irregular refugees, emergency plans need to be in place for helping displaced people in a dignified fashion.

Therefore:

In the old large country system approach, all countries must sign the UN Refugee Convention and they need to actively develop a system of refugee support within their country or find some equivalent of support.

Alternatively, we can restructure the current world system into a world of thousand independent regions. "Wherever possible, work toward the evolution of independent regions, each with a population of (5-15 up to 20 million); each with its own geographical and natural boundaries if possible; each with its own economy; each one autonomous and self-governing; each with a seat in a world government, without the intervening powers of larger states or countries."[21] New emerging Independent Regions need to be strengthened to be able to sustain themselves and also work together to help each other with problems beyond their own in a new world of a self-governed free system by all people.

Links: RPL3.4 WALK_TO COUNTRIES (or IR's) can be helpful in creating first wave help.

3.3. From Countries & Groups of Countries to a World of Independent Regions

Links: APL1 INDEPENDENT REGIONS may offer a visionary but also utopian alternative to the current highly unbalanced world system. APL 8 MOSAIC OF SUBCULTURES alludes to the possibility of bringing entities into balance with each other … RPL 3.1 WELCOME COUNTRIES provides practical help to refugees and RPL 3.2 A WORLD OF THOUSAND INDEPENDENT REGIONS AND REFUGEES attempts to dramatically reduce refugee formation and RPL 3.3 FROM COUNTRIES AND GROUPS OF COUNTRIES TO A WORLD OF INDEPENDENT REGIONS explores and analyzes options to transform our old fashioned world to a free world appropriate to the cultural, and socio-spatial achievements of our times.

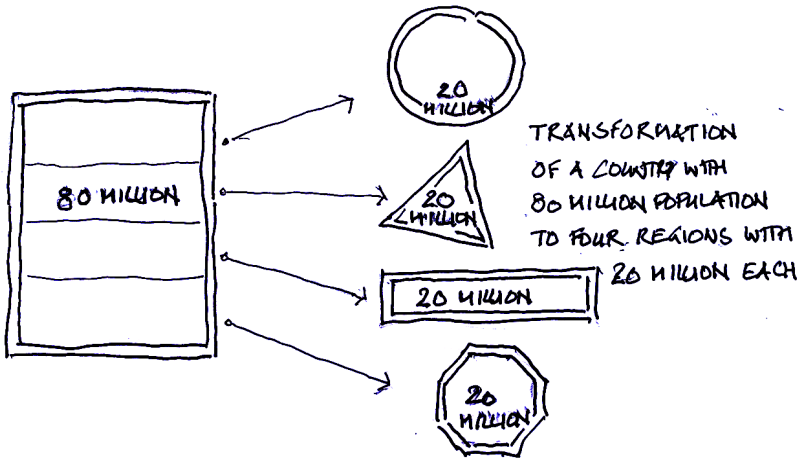

Fig. 8: A geometric rectangle representing 80 mio population transforming into 4 shapes with 20 mio population each.

Problem: Regions first need to develop by themselves as strong democratic cultures with equity in recognized standing, planning abilities within their region to keep people safe, and strong culture and diversity within their territories. But the main question here is how countries can become independent regions in the first place, and equally important, how can large countries transition and become a group of smaller independent regions that are able to cooperate with each other, help organize larger regional cooperation, and work together in groups of independent regions in a new world federation or union. (How can groups of countries work together to help refugees in this new arrangement?)

Groups of countries and states that are organized in associations or unions can be found in several parts of the world. The European Union is an interesting example here because the richness in cultural diversity and wide-ranging population numbers which can be seen as a union of small and mid-size countries but also as a union of potentially independent regions. In the EU with currently 27 countries, 20 countries have population sizes below 12 million. The smallest is Malta with less than half a million people and highest in

this group is Belgium with 11.5 million. Only 7 countries have populations of 17 million or more, from 17 million in the Netherlands to 83 million in Germany. This means that 20 countries out of 27 already have a desirable size below 12 million for independent regions. It means that most of the smaller countries of the EU can relatively easily transition into IR's from a population size point of view.

COUNTRIES IN EU 2022	POPULATION	MIGRANTS (NET)
1. GERMANY	83,783,942	543,822
2. FRANCE	65,273,511	36,527
3. ITALY	60,461,826	148,943
4. SPAIN	46,754,778	40,000
5. POLAND	37,846,611	-29,395
6. ROMANIA	19,237,691	-73,999
7. NETHERLANDS	17,134,872	16,000
8. BELGIUM	11,589,623	48,000
9. CZECHIA	10,708,981	22,011
10. GREECE	10,423,054	-16,000
11. PORTUGAL	10,196,709	-600
12. SWEDEN	10,099,265	40,000
…	…	…
24. ESTONIA	1,326,535	3,911
25. CYPRUS	1,207,359	5,000
26. LUXEMBOURG	625,978	9,741
27. MALTA	441,543	900

Table 2. Countries in the EU by Population 2022 (before Ukrainian War)
(Data source: https://www.worldometers.info/population/countries-in-the-eu-by-population, 07-13-22. The table is adjusted, shortened, and modified for the purpose of this paper)

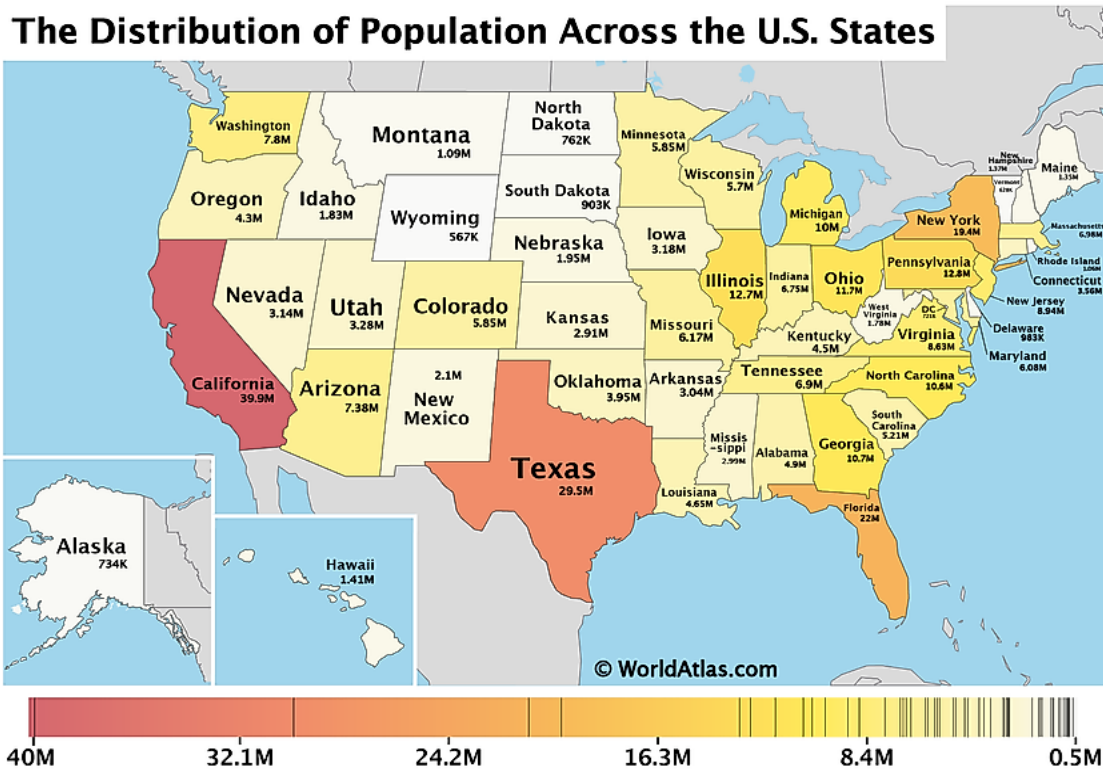

Fig. 9: Map of the United States with all States and their population numbers. (Source: /www.worldatlas.com, 2022).

When we look at the 50 States of the United States, only 6 states have a population of more than 12 million, Illinois with 12 million to California with 39 million. This means that most of the states in the US have population numbers that are close to the preferred size of independent regions below 12 and above 3 million inhabitants. 44 States are below 12 million people, and 27 states have a population of 5 million, or below with Alabama at 5 million and Wyoming at half a million inhabitants. Therefore, from a population size perspective, the US has the potential for individual states to transition to Independent Regions. In California, there is a tradition of attempting to divide the largest state into a North California and South California. And Ernest Callenbach has self-published a book of transforming Northern California, and parts of Oregon, and Washington into a new kind of socio-ecological state called "Ecotopia,"[22] that might have its roots in the idealist tradition of "News from Nowhere" by William Morris, published in 1890[23].

To begin to understand the idea of independent regions not only in terms of the appropriate population size but also in relation to area size, we need to look at countries in terms of their density of population and area size. The higher the density the less area is available for population and for refugees. When we look at countries of the Middle East, we can find up to 18 countries (not including the additional North African Countries of Morocco, Algeria, Tunisia, and Libya). Using the marker of 12 million inhabitants for

independent regions, the relationship of larger countries to smaller countries accounts for about half and half, with seven countries above 12 million and ten below 12 million inhabitants. The top seven ranges from Egypt with 104 million inhabitants to Syria with 18 million, and the lower half starts with Jordan and 10 million people to Palestine and Kuwait and Qatar with 3-4 million people each and at the end Bahrain and Cyprus with 1-2 million each. In general, lower density numbers appear in the larger countries, and high-density numbers are prevalent within the smaller countries: For example, 16,1 people/km2 for the large area country Saudi Arabia, and 2288,53people/km2 in the small peninsula area of Bahrain as the density highest number in the smaller countries. A transition from countries to independent regions seems more easily doable for the smaller countries, while the transformation of larger area countries seems to be more complicated, largely because of dry desert non arable land where few people can live[24].

Fig. 10: Map of Middle Eastern countries. (https://worldatlas.com) .

When we include the North African Countries, this observation seems to continue to apply for Tunisia as the only NA country below 12 million population and a smaller land area but high density; it also applies to the larger NA countries Morocco, Algeria, and Libya (not counting Egypt twice) with larger populations and with much larger land areas, resulting in lower densities than Tunisia. One reason is probably the large percentage of non-inhabitable desert areas.

COUNTRIES	POPULATION	DENSITY (km²)	NORTH AFRICAN COUNTRIES	POPULATION (mio)
EGYPT	104,258,327	104.00 (NA included)	**EGYPT**	(previously counted for)
IRAN	85,028,759	51.59	**ALGERIA**	43.85
TURKEY	60,461,826	108.53	**MORROCCO**	37.34
IRAQ	41,179,350	93.95	**TUNISIA**	11.93
SAUDI ARABIA	35,340,683	16.44	**LIBYA**	6.87
YEMEN	30,490,640	57.75		
SYRIA	18,275,702	98.69		
JORDAN	10,269,021	114.94		
UAE	9,991,089	119.51		
ISRAEL	8,789,774	423.20		
LEBANON	6,769,146	647.64		
PALESTINE	5,222,748	839.67		
OMAN	5,223,375	16.88		
KUWAIT	4,358,550	242.93		
QATAR	2,930,528	252.94		
BAHRAIN	1,748,296	2285.35		
CYPRUS	1,215,584	131.40		

Table 3. Populations and Density of Countries in the Middle East and Populations of North African Countries.

Fig.11: Map of countries in three world regions that together can form a larger World Region: Europe, Middle East and North Africa together.

When we look simultaneously at the European (EU), Middle Eastern (ME), and North African (NA) countries in three major world regions, that are also closely connected by the Mediterranean Sea at the center, we can observe that half of the Middle Eastern countries are rather large countries in population size and the other half are rather small to very small countries. Including the North African countries, we have four more countries two of more than 30 million inhabitants and two of less than 12 million. Altogether the difference to Europe is the difference in size of larger and smaller countries with not as many smaller countries of less than 12 million people. When we add another dimension of area coverage, the size in the Middle East & North African (MENA) countries is dramatically larger than in the European countries,

which are all at a smaller scale, possibly with the exception of Sweden, Finland and Norway which enjoy larger size in area.

The three world regions of Europe, Middle East, and Northern Africa, or Europe and the MENA countries may also be called EUMENA or MEEUNA, or NAMEEU countries. They have a long history together, positive as well as negative, but they continue to enjoy economic, political, and social connections and relations. Together they could form one federation of currently existing countries or, alternatively, they could form three Independent World Regions, or two. Or they could form a federation of three world regions together transformed into about 100 Independent Regions.

A word of caution: To make an actual suggestion for particular places to become organized as independent regions of 3-12 or 5-15million people by starting to divide a large country into independent regions, goes far beyond the legitimate scope of this pattern, but following the idea of initiating ways of inquiry seems legitimate. How to carve up or transform big countries such as China, Russia or the United States, or Canada, India, and Australia, or even Indonesia, Germany, France and the UK, becomes a highly loaded question with political and cultural implications. However, here at the fundamental level of thinking, analysis, and evaluation, we always need to evaluate and emphasize what is best for mankind to live together in peace, and how to survive on earth. What is missing is a strong or strengthened world government that can help to direct refugee flow and movement as well as support and overarching planning and policy making. All of this needs a lot more thorough studies, but the direction seems promising.

Therefore:

While independent regions or countries need to develop well within, so that they can be strong enough to protect their population without creating internal or external refugees, the main task for cooperation is to make sure that Independent Regions help each other by developing a coordinated strategy and a pragmatic direct support system in view of daring challenges such as a refugee crisis. Here, the main task is to help to avoid refugee crises and other large world crises such as wars that create refugees, reduction of climate change, and reduction of overpopulation and more. This is one of the main functions of independent regions or small independent countries. It needs to be achieved by internal strength and by external cooperation of independent regions working together in a union or federation of groups of countries or independent regions, for peace and prosperity.

Fig. 12: Creation of an Open World for Independent Regions.

Links: RPL3.4 WALK-TO COUNTRIES, RPL 3.9 MULTI-CULTURALISM AND PLURALIST CULTURES, RPL3.10 SANCTUARY CITIES AND COUNTIES

4. CONCLUSION

The first main conclusions are the results of the three patterns 'RPL 3.1Welcome Countries,' 'RPL3.2 A World of Independent Regions and Refugees,' and 'RPL3.3 From Countries to Independent Regions,' as expressed in the Solutions/Suggestions, starting with a 'Therefore.' These are solutions, suggestions, and instructions for helping refugees in their plight and needs and, what is even more important, trying to reduce the ever-increasing refugee numbers and crises, as much as possible, based on a new world system of independent regions.

Furthermore, when we look at the observations and arguments in this short paper with three connected patterns about 'welcome countries' for refugees and the proposition of a new socio-spatial entity called 'independent region,' for the benefit of refugees, and the drastic reduction of refugees, we might start to wonder if the idea of independent regions with 5-15 million inhabitants each, self-organizing, and based on strong self-governing democratic principles, might be a better way for organizing, structuring, and administering our world altogether. And that not only because of contributions to solve the refugee problem but because the arrangement of independent regions might contribute to solve a range of other large-scale problems than only the refugee crisis.

Instead of pursuing the way of larger and larger countries with imperial and world domination ambition, this proposal tries to go the opposite way, to smaller countries and independent regions, emphasizing the scale of human living together in entities and a world they can understand and govern by themselves. These are also entities that can meet and deal with each other on eye level, without having to fear that larger and stronger countries will always dominate the world, and force on smaller countries their will and power, as we can see in the current Russia invasion of the much smaller country Ukraine. Equally, the current war-game simulation attacks by China on the much smaller 20 million population size Taiwan, is another example of the wrong direction in this process. Taiwan should become an Independent Region in a world of thousand independent regions. The strong criticism of Leopold Kohr has encouraged our support and development of Independent Regions because of his warning "The bigger the power and size of a State, the bigger the potential risk of driving towards conflict with serious destructive effects.[25]" However, without a clear democratic and cooperative structure it needs to be seen if smaller countries and independent regions will not turn on each other, fighting for limiting resources such as water and energy supply.

As the Club of Rome is arguing, we need a new enlightenment that is based on tradition and culture, but that also works with a new understanding to tackle the large-scale problems in the world at the right levels of scale and with the power and understanding of science, new philosophy and passion[26]. And the idea of the formation of Independent Regions, may very well become a part of this new enlightenment.

Finally, Pattern 1 in APL seemed to be a talisman at the start of the book, rarely ever used practically, but giving a feeling that taking care of all of the world is a primary task. In our case, and for our times, it has helped us to start to explore a totally different order of the world that might in the end be more useful and practical to solve our current large-scale problems including the refugee crisis that has reached 100 million refugees in the world at this time in the summer of 2022.

NOTES AND REFERENCES

[1] Alexander, C., Ishikawa S., Silverstein, M., et al. *A Pattern Language – Towns, Buildings, Construction.* Oxford University Press, NY 1977.

[2] Borras-Alomar, S., Christiansen, T. and Rodriguez-Pose, A., "Towards a 'Europe of the Regions'? Visions and Reality from a Critical Perspective" in *Regional Politics and Policy*, 4, 2, 1-27, 1994.

[3] Alexander C. *The Timeless Way of Building.* Oxford University Press, NY 1979.

[4] UNHCR, "The 1951 Refugee Convention." Last modified (n.d.), Accessed on June 30, 2022, https://www.unhcr.org/en-us/1951-refugee-convention.html

[5] Knaus, G. Welche Grenzen brauchen wir? Zwischen Empathie und Angst- Flucht, Migration und die Zukunft von Asyl. Piper Verlag, München, 2. Auflage 2020

[6] Ibid.

[7] Neis, H., Meier, B. and Furukawazono, T. Welcome City: Refugees in Three German Cities. *Urban Planning*, Cogitatio Press. (2018). 3(4), 101-115. 2018 http://dx.doi.org/10.17645/up.v3i4.1668

[8] Johnson, Borris. 2022. Interview by Sievers, C. (news interview by ZDF during G7 meeting). Germany. *"Johnson: "If Putin was a woman…"),* Germany. https://www.zdf.de/nachrichten/heute-journal/johnson-if-putin-was-a-woman-100.html

[9] Vositk, Vlad. 2022. Interview by Neis, H. Germany, June 30, 2022

[10] Alexander, C., Ishikawa S., Silverstein, M., et al. *A Pattern Language – Towns, Buildings, Construction.* Oxford University Press, NY 1977.

[11] Ibid., p. 11.

[12] Haldane, J. B. S. "On Being the Right Size," *The World of Mathematics, Vol. II*, J.R. Newman, ed. New York: Simon and Schuster, 1956, pp. 962-67 cited in APL

[13] Alexander, C., Ishikawa S., Silverstein, M., et al. *A Pattern Language – Towns, Buildings, Construction.* Oxford University Press, NY 1977.

[14] Letter by Lord Weymouth 1973, cited in APL

[15] Ibid

[16] Alexander, C., Ishikawa S., Silverstein, M., et al. *A Pattern Language – Towns, Buildings, Construction.* Oxford University Press, NY 1977. p.13

[17] Gravier, "L'Europe Des Régions," in1965 Internationale Regio Planer Tagung, Schriften der Region, Basel,

1965.pp 211-22.

[18] Alexander, C., Ishikawa S., Silverstein, M., et al. *A Pattern Language – Towns, Buildings, Construction.* Oxford University Press, NY 1977.

[19] หลักเกณฑ์การจัดตั้งจังหวัด. (1981). Translated by Chaiwat, P. Accessed in August 2022, http://www.ratchakitcha.soc.go.th/DATA/PDF/0A/00131178.PDF

[20] Oxford Language, "Resiliency" 2022, Accessed on June 30, 2022

[21] Alexander, C., Ishikawa S., Silverstein, M., et al. *A Pattern Language – Towns, Buildings, Construction.* Oxford University Press, NY 1977. p.14

[22] Callenbach, *Ecotopia. The Notebooks and Reports of William Weston*. First self-published in 1975.

[23] Morris, William, *News from Nowhere*. 1890

[24] World Population Review, "the Middle East Population 2022" Last modified (n.d.), Accessed on June 30, 2021, https://worldpopulationreview.com/continents/the-middle-east-population

[25] Borras-Alomar, S., Christiansen, T. and Rodriguez-Pose, A., "Towards a 'Europe of the Regions'? Visions and Reality from a Critical Perspective" in *Regional Politics and Policy*, 4, 2, 1-27, 1994.

[26] Weizsaecker, E.U., Wijkman, A. *Come On – Capitalism, Short-termism, Population and the Destruction of the Planet – A Report to the Club of Rome*. Springer Science Business Media LLC. New York, 2018

TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

Volume 320
Contributors

CITIES, URBAN, AND RECONSTRUCTION

Manar Zaki
American University in Cairo
Egypt
manar@aucegypt.edu

Debbie Whelan
University of Lincoln
United Kingdom
dwhelan@lincoln.ac.uk

Luo Wenjing
Tongji University
China
luowenjing19931022@163.com

Hans Joachim (Hajo) Neis[1,2,4], Pamanee Chaiwat[3,5]
[1]University of Oregon, Portland, [2]CES Berkeley, [3]University of Oregon, Eugene, United States of America
[4] hajoneis@uoregon.edu, [5] pamaneec@uoregon.edu