



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

8th Annual International Conference on
Urban Studies & Planning
4-7 June 2018, Athens, Greece

Edited by
Gregory T. Papanikos

2018

Abstracts
8th Annual International
Conference on
Urban Studies & Planning
4-7 June 2018
Athens, Greece

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Preface

This book includes the abstracts of all the papers presented at the 8th *Annual International Conference on Urban Studies & Planning (4-7 June 2018)*, organized by the Athens Institute for Education and Research (ATINER).

In total 39 papers were submitted by 46 presenters, coming from 19 different countries (Belgium, Brazil, Chile, China, Germany, Hungary, India, Italy, Jordan, Mexico, New Zealand, Poland, Romania, South Korea, Taiwan, Thailand, Turkey, UK and USA). The conference was organized into 11 sessions that included a variety of topic areas such as place-making, urban structuring and more. A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet to exchange ideas on their research and consider the future developments of their fields of study.

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world regularly meet to discuss the developments of their discipline and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published nearly 200 books. Academically, the institute is organized into seven research divisions and 37 research units. Each research unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Gregory T. Papanikos
President

**8th Annual International Conference on Urban Studies &
Planning,
4-7 June 2018, Athens, Greece
Organizing and Academic Committee**

ATINER's conferences are small events which serve the mission of the association under the guidance of its Academic Committee which sets the policies. In addition, each conference has its own academic committee. Members of the committee include all those who have evaluated the abstract-paper submissions and have chaired the sessions of the conference. The members of the **academic committee** of the 8th Annual International Conference on Urban Studies and Planning were the following:

1. Gregory T. Papanikos, President, ATINER.
2. Nicholas Pappas, Vice President of Academic Membership, ATINER & Professor of History, Sam Houston University, USA.
3. Nicholas N. Patricios, Vice President of Strategic Planning & Analysis, ATINER and Professor & Dean Emeritus, School of Architecture, University of Miami, USA.
4. Peter Yannopoulos, Vice President of Global Communications, ATINER, Co-editor, Athens Journal of Business and Economics & Professor, Brock University, Canada.
5. Giulia Pellegri, Associate Professor, Architecture-Polytechnic School, University of Genoa, Italy.
6. Manfredo Manfredini, Director, School of Architecture and Planning, The University of Auckland, New Zealand & Honorary Professor, Hunan University, China.
7. Virginia Sisiopiku, Head, Transportation Engineering Unit, ATINER, & Associate Professor, The University of Alabama at Birmingham, USA.
8. Jesus J. Lara, Associate Professor, The Ohio State University, USA.
9. Patrizia Falzone, Professor, University of Genoa, Italy.
10. Lucia Martincigh, Professor, University of Roma Tre, Italy.
11. Teodoro Georgiadis, Academic Member, ATINER & Senior Scientist, IBIMET-CNR, Italy.
12. Kamran Mirza, Assistant Professor, University of the Punjab, Pakistan.
13. Olga Gkounta, Researcher, ATINER.

The **organizing committee** of the conference included the following:

1. Fani Balaska, Research Assistant, ATINER.
2. Hannah Howard, Research Assistant, ATINER.
3. Eirini Lentzou, Administrative Assistant, ATINER.
4. Konstantinos Manolidis, Administrator, ATINER.
5. Vassilis Skianis, Research Associate, ATINER.
6. Kostas Spyropoulos, Administrator, ATINER.

FINAL CONFERENCE PROGRAM
8th Annual International Conference on Urban Studies & Planning,
4-7 June 2018, Athens, Greece

PROGRAM

Conference Venue: Titania Hotel, 52 Panepistimiou Street, 10678 Athens, Greece

Monday 4 June 2018

08:00-08:45 Registration and Refreshments

08:45-09:30 (Room A - Mezzanine Floor): Welcome and Opening Address

Gregory T. Papanikos, President, ATINER.

**Nicholas Pappas, Vice President of Academic Membership, ATINER &
Professor of History, Sam Houston University, USA.**

09:30-11:00 Session I (Room C - 10th Floor): Urban Methodology & Other Issues

Chair: Jesus J. Lara, Associate Professor, The Ohio State University, USA.

1. Teodoro Georgiadis, Senior Scientist, IBIMET-CNR, Italy. The Role of Urban Modelling in Preserving Citizen's Health.
2. Benjamin Kaiser, Lecturer, University of Greifswald, Germany. Some Problems of Interpreting Spatial Analysis Results.
3. Norbert Csizmadia, Lecturer, Corvinus University of Budapest, Hungary. Geofusion - Mapping of the 21st Century.
4. Fulya Selcuk, Research Assistant, Dokuz Eylul University, Turkey & Deniz Guner, Professor, Dokuz Eylul University, Turkey. Decoding the Power Relations in the Production of Space by Mapping Controversies Method: İzmir "Basmane World Trade Center" Case.

09:30-11:00 Session II (Room D - 10th Floor): Transportation Modelling

Chair: Virginia Sisiopiku, Associate Professor, The University of Alabama at Birmingham, USA.

1. Nagui Rouphail, Professor, North Carolina State University, USA & Alan Karr, Director, Research Triangle International (RTI), USA. Microscale Detection and Characterization of Lane Changes using High Resolution Driving Data.
2. Shaopeng Zhong, Deputy Laboratory Director of Traffic Engineering, Dalian University of Technology, China. Optimal Road Congestion Pricing for Both Traffic Efficiency and Safety under Demand Uncertainty.
3. *Sang Hyup Lee, Research Fellow, Korea Institute of Civil Engineering and Building Technology, South Korea. The Korean Traffic Count System and The Role of KICT in National Traffic Data Collection.

11:00-12:30 Session III (Room C - 10th Floor): Drawing & Representation: Environment-Landscape-City I

Chair: Giulia Pellegri, Associate Professor, Architecture-Polytechnic School, University of Genoa, Italy.

1. Patrizia Burlando, Professor, Università degli studi di Genova, Italy & Sara Grillo, Architect, Università degli studi di Genova, Italy. Complexity vs Simplicity.
2. Patrizia Falzone, Professor, University of Genoa, Italy. Color and Urban Environment. The Survey on Facades Painted with Frescoes of Houses and Palaces of the Historical Centre of Genoa.
3. Massimo Malagugini, Researcher, University of Genoa, Italy & Maria Linda Falcidieno, Professor, University of Genoa, Italy. The Representation is a Visual Language.
4. Sara Eliche, PhD Student, Università degli Studi di Genova, Italy. Between Reality and Virtuality: Digital Tools for the Enhancement of Cultural Heritage.
5. Zijie Zhou, PhD Candidate / International Scholar, KU Leuven / Southeast University, Belgium / China & Yves Schoonjans, Professor, KU Leuven, Belgium. Between 'Shan Shui', the Analysis of Settlement's Pattern through the Landscape Drawing.

12:30-14:00 Session IV (Room C - 10th Floor): Urban Planning Processes

Chair: Teodoro Georgiadis, Senior Scientist, IBIMET-CNR, Italy.

1. Ali Cheshmehzangi, Head of Department of Architecture and Built Environment / Director of CSET, The University of Nottingham Ningbo China, China. Eco Fusion: Augmented Eco Innovation for Urban Development.
2. Raed Al Tal, Assistant Professor, German Jordanian University, Jordan & Ibaa Al-Zubaydi, Architect, German Jordanian University, Jordan. Trans-placed Communities: The Impact of the Iraqi Community on the Spatial and Socio-cultural Urban Structure of Amman.
3. Nattapon Sang-arun, Instructor, Thammasat University, Thailand. Two-Stage Inequality Decomposition Analysis of

12:30-14:00 Session V (Room D - 10th Floor): Transportation Operations and Management

Chair: Olga Gkounta, Researcher, ATINER.

1. Mecit Cetin, Associate Professor, Old Dominion University, USA & Lianyu Chu, CLR Analytics, USA. Anonymous Truck Re-identification Algorithms for Estimating Freight Flows between Data Collection Stations.
2. Zeynep Dundar, Research Assistant, Dokuz Eylül University, Turkey. Effects of Konak Tunnel in Izmir on Lived Space.
3. Sewodo Augustin Degbe, PhD Student, Shanghai Maritime University, China & Bingliang Song, Professor, Shanghai Maritime University, China. Dry Port Development: A Pivot Strategy to Enhance Sustainable Transit Traffic via West African Corridors.

<p>Thailand's Spatial Economy from 1995 to 2015.</p> <p>4. Tolga Levent, Academic Staff, Mersin University, Turkey. Urban Regeneration or Urban Degeneration? A Concealed Story of Urban Change in Turkish Metropolitan Cities.</p> <p>5. Hsuan Lo, Graduate Student, The University of Manchester, UK and National Taipei University, Taiwan. The Influence of Urban Renewal on Housing Vacancy Rates: The Case of Urban Renewal Implementations in Taipei City.</p>	<p>4. Sabrina Howard, PhD Candidate, University of Southern California, USA. Window Seat: Examining Public Space, Identity, and the Politics of Everyday Life through Public Transportation.</p>
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14:00-15:00 Lunch

15:00-16:30 Session VI (Room C - 10th Floor): Urban Components & Infrastructure

Chair: Peter Yannopoulos, Vice President of Global Communications, ATINER, Co-editor, Athens Journal of Business and Economics & Professor, Brock University, Canada.

1. Carolyn Aguilar-Dubose, Professor, Universidad Iberoamericana, Mexico. The Urban Park: Nature and Democracy as Component of a Planning Strategy.
2. Ratna Ghosh, Assistant Professor, Amity University, India & Uttam Kumar Roy, Assistant Professor, IIT Roorkee, India. Evolving Strategies for Housing Development at a Sub-Regional Level.
3. Dominic Hofmann, Research Assistant and PhD Student, Frankfurt University of Applied Sciences, Germany. Infrastructure – Design - Emotions.
4. Pruethipong Xinghatiraj, Civil Engineer, Ministry of Transports, Thailand. The Formulation of Peak Runoff Rate Equation for Road Networks on Frequently Flooded Areas in Central Thailand.
5. Chin-Wei Chen, Graduate Student, National Science and Technology Center for Disaster Reduction, Taiwan and The University of Manchester, UK. How to Assess Footbridges by Walkability? A Case Study in Taiwan.

17:30-19:30 Session VII ATINER's 2018 Series of Academic Dialogues: A Symposium Discussion on Recent International Research in Urban Studies and Planning

Venue: Harokopio University (New Building-Ceremony Hall), Eleftheriou Venizelou 70, Kallithea.

Chair: Virginia Sisiopiku, Head, Transportation Engineering Unit, ATINER, & Associate Professor, The University of Alabama at Birmingham, USA.

1. Ali Cheshmehzangi, Head of Department of Architecture and Built

- Environment, Director of CSET (Center for Sustainable Energy Technologies), Director of UIL (Urban Innovation Lab), & Associate Professor of Architecture and Urban Design, Department of Architecture and Built Environment, The University of Nottingham Ningbo China, China. Smart Cities vs. Urbanism.
2. Carolyn Aguilar-Dubose, Professor, University Iberoamericana, Mexico. From Universe to Pluriverse in Sustainability.
 3. Antonio Zumelzu, Associate Professor, Austral University of Chile, Chile. Sustainability in the Global South: The Role of Urban Morphology.
 4. Giulia Pellegri, Associate Professor, Architecture-Polytechnic School, University of Genoa, Italy. De-Sign Research: Interactions and Results in the International Contributions of the 2018 Design Day in Genoa. Department of Architecture and Design University of Genoa.
 5. Ratna Ghosh, Assistant Professor, Amity University Noida, India. City of Chandigarh.
 6. Raed Al Tal, Assistant Professor, German Jordanian University, Jordan. Cities of Continuous Urban Instability - Amman as a Case Study.

21:00-23:00 Greek Night and Dinner (Details during registration)

Tuesday 5 June 2018

07:45-11:00 Session VIII: An Educational Urban Walk in Modern and Ancient Athens

Chair: Gregory A. Katsas, Vice President of Academic Affairs, ATINER & Associate Professor, The American College of Greece-Deree College, Greece.

Group Discussion on Ancient and Modern Athens.
Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)

11:15-13:00 Session IX (Room C - 10th Floor): Urban Structuring, Environment & Special Issues

Chair: Kamran Mirza, Assistant Professor, University of the Punjab, Pakistan.

1. Lucia Martincigh, Professor, University of Roma Tre, Italy, Anna Vincenzoni, Councilor, Town Municipality of Rome, Italy, Marina Di Guida, Postdoctoral Research Fellow, University of Roma Tre, Italy & Giovanni Perrucci, Postdoctoral Research Fellow, University of Roma Tre, Italy. Tools for a Better Liveability in Neighbourhoods: The “Environmental Island” Design Methodology and the Citizen Engagement Process.
2. Lukasz Damurski, Assistant Professor, Wroclaw University of Science and Technology, Poland, Jacek Pluta, Assistant Professor, University of Wroclaw, Poland, Jerzy Ladysz, Assistant Professor, Wroclaw University of Science and Technology, Poland, Wawrzyniec Zipser, Assistant Professor, Wroclaw University of Science and Technology, Poland & Magdalena Mayer-Wydra,

- PhD Candidate, University of Wrocław, Poland. Potential for Conversion of Offline Services into Online ones in Urban and Suburban Neighbourhoods. Examples of Wrocław and Siechnice in Poland.
3. Andrea Ferraz Young, Researcher, CEMADEN Brazilian National Center of Monitoring and Early Warning of Natural Disasters, Ministry of Science, Technology, Innovation and Communication, Brazil. Adaptation Actions for Integrated Climate Risk Management into Urban Planning: An Integrated Approach in São Paulo Metropolitan Area (Brazil).
 4. Cristiana-Maria Pioarca-Ciocanea, Senior Researcher, University of Bucharest, Center for Environmental Research and Impact Studies, Romania. Monitoring Wildlife in Romania – Empirical Evaluation of Argos Location Errors in Romania.
 5. Ratan Kar, Scientist, Birbal Sahni Institute of Palaeosciences, India & Ruchika Bajpai, Research Scholar, Birbal Sahni Institute of Palaeosciences, India. Climatic and Vegetational Changes during the Last 11,500 Years from Glacial Sites in Lahaul Valley, Western Himalaya, India.
 6. Mark John Burke, Researcher, Cambridge University, UK. Home Ownership Participation – A Cross Sectional Analysis of Major Cities.

13:00-14:00 Lunch

14:00-15:30 Session X (Room C - 10th Floor): Urban Place-Making & Form and Special Topics

Chair: Lucia Martincigh, Professor, University of Roma Tre, Italy.

1. Jesus J. Lara, Associate Professor, The Ohio State University, USA. Latino Placemaking: Cultural Resiliency and Strategies for Re-urbanization.
2. Antonio Zumelzu, Associate Professor, Universidad Austral de Chile, Chile. Nodality as a Dimension of Sustainable Urban Form: An Evaluation to Five Neighbourhoods in Southern Chile.
3. Austin D'Souza, Student, Victoria University of Wellington, New Zealand, Jacqueline McIntosh, Senior Lecturer, Victoria University of Wellington, New Zealand & Bruno Marques, Lecturer, Victoria University of Wellington, New Zealand. The Togetherness of Strangers: The Role of Ethnicity in 'Place-Making' the Therapeutic Landscape.
4. Abraham Paulsen, Academic and Researcher Geography Institute, Pontificia Universidad Católica de Chile, Chile. Pentecostalism in Anti-Ghettos in Santiago Chile's Metropolitan Area: Bajos de Mena, a Case Study Designed to Generate a Theory of Religiosity in Urban Spaces Classified as Vulnerable.

15:30-17:00 Session XI (Room C - 10th Floor): Drawing & Representation: Environment-Landscape-City II

Chair: Patrizia Falzone, Professor, University of Genoa, Italy.

1. Michela Scaglione, Adjunct Professor, Università degli Studi di Genova, Italy. Basic Methodology for the Knowledge of a Territory through the GIS: Analysis, Surveys and Representations.
2. Ruggero Torti, Research Grant Holder, Università degli Studi di Genova, Italy. *Signum* and Visual Identity.
3. Francesca Salvetti, Professor, University of Genoa, Italy. Quality Standards for the Restoration of Color Values in Urban Areas: Color Projects.

20:00- 21:30 Dinner

Wednesday 6 June 2018
Mycenae and Island of Poros Visit
Educational Island Tour

Thursday 7 June 2018
Delphi Visit

Friday 8 June 2018
Ancient Corinth and Cape Sounion

Carolyn Aguilar-Dubose
Professor, Universidad Iberoamericana, Mexico

The Urban Park: Nature and Democracy as Component of a Planning Strategy

The park is a space imbued with a duality which is confirmed by a long-lived and constant ingredient, when one talks of NATURE, and a much more recent, but no less powerful one, when one talks of DEMOCRACY. It brings the ideas of paradise, country in the city and landscape to the fore, as well as health, repose and community.

Parks, invaluable components of public space, can be forceful advocates for building collective memory, as well as for forming an identifiable and significant urban structure.

This research demonstrates that parks continue to represent a moral space, a space of 'goodness', through layers of commonplaces found in survey testimonials and drawings, through books about parks and about the city, as well as through newspapers, films, television series and paintings.

Not all professionals responsible for the design and care of parks understand this duality, or the wealth of diverse meaning parks convey to all types of users. Designers, Planners and Managers see the park as an 'object', a passive space whose success is centered on rearranging physical attributes. Users consider the park to be a 'subject', an active element of the city. The park can lose its power and become fragile when projects do not meet users' expectations.

Parks and park systems are a reliable planning strategy. In the present discussion on the 'spaciality' of social problems, the urban park can contribute to promote a healthy, legible, just, beautiful and livable city.

Raed Al Tal

Assistant Professor, German Jordanian University, Jordan

&

Ibaa Al-Zubaydi

Architect, German Jordanian University, Jordan

Trans-placed Communities: The Impact of the Iraqi Community on the Spatial and Socio-cultural Urban Structure of Amman

The influx of Iraqis to Jordan came in two major waves. The first wave had taken place in 1991 when Iraq was subjected to a devastating war following its invasion of Kuwait, while the second wave resulted from the US-led war against Iraq in 2003. In both waves, the Iraqi immigrants can be grouped into three categories. The first relates to those Iraqis who came seeking temporary safety from the spread of violence back home, but for whom the idea of returning to Iraq remains uncertain. The second category is made up of those Iraqis who came to stay for family or any pressing reasons; and the third group includes those who viewed Amman as a transit station towards other destinations.

The second wave has proven to be not as short-lived as was the earlier one, due to persistent living hardship in Iraq. The Jordanian government statistics and documents show that when searching for long-term permanence, a large number of Iraqis bought or built houses or apartments which will be discussed in farther details later. In addition, this long-term permanent residency means that the Iraqis have to move their own business or to establish new one.

This research addresses the long-term pattern and establishing businesses in Amman by the upper-middle class and high-class of Iraqi immigrants. Also the research questions why do those Iraqis have selected certain areas, and finally by testing the two questions the research will examine if they did form an Iraqi community within the urban fabric of Amman and what kind of characteristics dose this community has physically, socially and economically. To give a comprehensive and fully understanding answers for the research problem a multi-dimensional behavior and physical urban theories and principles will be applied such as place attachment, place identity, place memory, trans placed, sense of place, sense of community, urban structure urban forms and spatial dimensions, and this will be studied in an analytical operated methodology.

The findings of this research will help to establish an assessment urban tool for testing the impact of the conflict trans-placed communities on the physical, as well as, the social and cultural urban structure of the multi-layered cities such as Amman.

Mark John Burke
Researcher, Cambridge University, UK

Home Ownership Participation – A Cross Sectional Analysis of Major Cities

This paper examines the effects of macroeconomic movements across developed and developing markets and tests the widely held assumption that increased overall economic performance leads to, or contributes to, increased home ownership participation in metropolises. Analysing twelve select countries and their capital cities through multivariate regression analysis, with varying socio-economic trajectories, it is proven that there is no observable correlation between an increase in indicators of national wealth and increased home ownership. This research posits that a more nuanced understanding of factors leading to home ownership within major economic hubs and metropolises is required, as well as proposing a number of causes of housing shortages in cities, along with avenues for future research.

Patrizia Burlando

Professor, Università degli studi di Genova, Italy

&

Sara Grillo

Architect, Università degli studi di Genova, Italy

Complexity vs Simplicity

The architecture, the landscape, the urban planning, the information technology and the other disciplines merge and move towards extreme evolution. As part of the design of the city, clarity and simplicity are sought in the representation that is opposed to the formulation of increasingly complex forms challenging the limits of the territory and the rules of statics. In search of extreme and unusual shapes and heights to overcome a fictitious challenge between power and ability, it is opposed to the need to simplify the representation and make it elementary. The design of the city is an action that humankind has always done and that the various cultures and populations have developed by creating different rules: orthogonal grids, main axes, concentric patterns and the most varied forms. The development of new settlements is determined by the design of new infrastructures, new axes and the creation of new blocks and buildings.

A peculiar phenomenon of recent years, which inspires and goes beyond experiences of the past (ideal cities, etc.), is represented by the creation of new cities in the United Arab Emirates where the limits do not exist, the territory is designed with artificial forms, the coastline is remodeled with figures and elementary representations, ever higher and bizarre skyscrapers rise with extreme rapidity requiring considerable economic resources and technological capabilities. This search for complex forms of buildings is observed all over the world; it is now a challenge among the greatest architectural firms to use parametric design to create new buildings. This technology allows us to overcome the limits of the past and the design of intrepid shapes that release from simple geometric shapes, creating a new contemporary language. It is clear that without a proper cultural and intellectual background it is only a game with shapes. This new way of designing the city and its parts must be in some way understandable by everyone, therefore the need to find clear and elementary methods of representation. The general agreement and the acceptance of new forms is essential for identification in the new language. It spread, therefore, the use of schematic concept representing linearly developing a project from simple shapes and using actions such as emptying, rotating and adding. Actually, even if the design process is represented in a schematic way, very complex but formally and functionally 'perfect' buildings are obtained, so the generated forms require considerable computational capabilities that are often impossible without the sophisticated design software.

In conclusion, analyzing the development of new expansions in various parts of the world, the speed and the design typologies happening these transformations, the contrast that is developing in the design is highlighted: the search for increasingly new and complex forms and competences in opposition to an extreme will to communicate them in a simple way. In conclusion, analyzing the development of new expansions in various areas of the world, the speed and the building's typologies of new transformations, the contrast that is developing in the design is highlighted: the search for increasingly new and complex shapes and skills in opposition to an extreme will to communicate them in a simple way.

Mecit Cetin

Associate Professor, Old Dominion University, USA

&

Lianyu Chu

CLR Analytics, USA

Anonymous Truck Re-identification Algorithms for Estimating Freight Flows between Data Collection Stations

Most transportation agencies rely on point detectors (e.g., inductive loops, axle detectors) located at specific locations on highways to collect data on traffic volumes, vehicle classes, and other relevant attributes of traffic. By utilizing data collected from such point detectors, researchers have developed vehicle re-identification algorithms to match measurements at two sites that belong to the same vehicle. This enables anonymously tracking the movement of individual vehicles between different data collections sites which in turn provides valuable information for the estimation of travel times, travel delays, origin-destination flows, as well as for the calibration of two weigh-in-motion (WIM) equipment if the measurement sites have WIM sensors.

In previous research, it has been demonstrated that there is enough variation within the truck population in terms of axle spacings and vehicle lengths, which enable anonymous re-identification of trucks between two measurement stations (e.g., two WIM sites). In this paper, the performance of a Bayesian model for re-identification of trucks is analyzed when data from distinct types of sensors are available. Depending on the availability of sensors and vehicle measurements at the two stations, four scenarios are considered:

- i. SG: In this scenario, only loop detector signature data are utilized as input for the truck re-identification.
- ii. VC: In this scenario, it is assumed that vehicle length as well as axle spacings measured by a vehicle classification system are available as inputs for the re-identification algorithm.
- iii. WIM: In this scenario, in addition to the VC data, axle weights are also used as the input.
- iv. ALL: In this last scenario, all available information from WIM and SG scenarios are utilized as input for the purpose of re-identification.

The re-identification models are then tested with data collected from six different WIM sites in CA. Since the re-identification models require ground-truth data for model fitting and testing, the transferability of such models to other sites is also evaluated to understand how these models would perform when ground-truth data are not available. The results show that the VC

scenario gives the lowest accuracy whereas ALL scenario the highest. Since the majority of the trucks are FHWA class 9, their axle spacings do not necessarily exhibit large enough variation for distinguishing individual trucks, hence the low accuracy of the VC scenario. ALL scenario, as expected, has the best performance since all available data are being utilized. In addition, SG scenario typically performs better than WIM scenario. This indicates that signatures contain more information than the WIM data in distinguishing individual trucks.

Chin-Wei Chen

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How to Assess Footbridges by Walkability? A Case Study in Taiwan

Walking has been regarded as the most basic way to move in daily life. It increases pedestrian activities and encourages interactions with neighbours. Also, "Walkability" is widely accepted concept to evaluate pedestrian environment. However, pedestrians' environment has been ignored by urban planners in east countries, and open space is easily squeezed by motorists. On the other hand, footbridge is a crucial walking network to connect diverse destinations. Nevertheless, urban professionals usually consider footbridge construction as single development or "engineering" project in east Asia, ignoring footbridge as a part of pedestrian infrastructure in cities. As a result, the aim of this research is to identify the composition of pedestrian friendly footbridges, and establish a suitable assessment framework for footbridges by walkability. This paper would analyse several case studies, trying to give a conceptual framework of footbridges by walkability. Then, street survey might be used for understanding users' perspectives, and test the whole footbridge assessment framework. This research will show high-care for pedestrian-friendly environment and promote sustainable lifestyle in cities.

Ali Cheshmehzangi

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Eco Fusion: Augmented Eco Innovation for Urban Development

Eco Fusion is a term, coined by the author, highlighting the importance of eco urban development at multiple scales of the built environment. This was utilised as a comprehensive method to recent teaching in China and developing a new platform of knowledge in the field of research; a platform that offers a blend of eco-development strategies and possibilities that may eventually enhance the current practice of eco design and planning. This paper is aimed to highlight the meaning and importance of this new term and how it is then aimed to focus on issues and opportunities of eco-development in the context of China. This comprises three levels of eco design at three urban spatial levels of eco-city (city/district level), eco-community (neighbourhood level) and eco-building (site/building level). The paper will go through each level individually and together as in one package of eco development knowledge.

By doing so, we first critically assess the context of New East City in the City of Ningbo, East China, a new zone that is promoting the green development plan of the city. As part of this process, this study explores Chinese contemporary urban development and directions of new design principles. The paper then offers an in-depth research in the field of eco-development from multiple scales. In this process, five directions of masterplanning were generated by a group of undergraduate final students, and each highlighting a particular aspect of eco development. These were then utilised for development of key performance indicator (KPI) systems and directions towards urban innovation scenarios that were then finalized for students' urban design and architectural projects. This paper highlights the one-year long teaching approach to the idea of *eco fusion* and how it was then recognised as an augmented eco innovation for urban development. It will then conclude on the emergence of this concept from both research and practice perspectives.

Norbert Csizmadia

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Geofusion - Mapping of the 21st Century

The presentation 'Geofusion' guides the audience with the help of maps in the global world of the 21st century through the quest for the winning nations, communities, leaders and powers of this age. The explorers and the geostrategists of this century are expected to present guidelines of our new world full of global social and economic challenges. To do so, new maps are needed which do not miss the wisdom and tools of the old, but complement it with the new structure of knowledge. Using the lately discovered geographic and economic interrelations, the presentation tries to give a prognosis of the global processes. The methodology contains the survey and analysis of many recent publications worldwide, regarding geostrategic, cultural, geographical, social and economic surveys structured into global networks. The result is a collage of the global map of the 21st century mentioned above. In conclusion, the presentation displays the results of a several year-long study giving the audience an image how economic navigation tools can help the investors and travelers to get along in the changing new world.

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Potential for Conversion of Offline Services into Online ones in Urban and Suburban Neighbourhoods: Examples of Wrocław and Siechnice in Poland

Services originally developed as natural concentrations of human activity, reflecting the Christallerian hierarchy of central places. Today those natural mechanisms are challenged by strong competition from online facilities. More and more services are offered by the Internet and this affects the traditional 'bricks-and-mortar' urban development. In this paper we examine the potential for conversion from offline to online channels in urbanized neighbourhoods.

The research sample reflects the current trends in human settlement in Poland and includes a well-established urban neighbourhood (Pereca Square in Wrocław) and a rapidly developing suburban municipality (Rynek Square in Siechnice). A social research conducted in 2017 among users of public spaces and among service providers (276 respondents in total) enables drawing reliable hypotheses on the relationship between offline and online services in local contexts.

The results show that about 60% of customers in Wrocław and 74% in Siechnice use online shopping whereas only 25% of service providers in Wrocław and 19% in Siechnice offer their products online. There is a significant potential for conversion from offline to online channels (and for hybridization of both of them) which is relatively higher in suburban neighbourhoods but lower in urban ones.

The paper contributes to the current debate on the real-virtual dichotomy in urban development. In particular it addresses the question of the conflicting (competitive) or supporting (complementary) role of the Internet in shaping urban functions. It also gives a valuable insight into the demand / supply relationship in various (urban and suburban)

settings and defines the potential for hybridization of online and offline channels in local urban services.

Sewodo Augustin Degbe

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&

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Dry Port Development: A Pivot Strategy to Enhance Sustainable Transit Traffic via West African Corridors

As the business environment becomes more competitive and global than ever before, service industries, such as ports, are placing greater emphasis on customer satisfaction through providing quality services efficiently. Togo, like many countries in Sub-Saharan Africa, is enjoying a period of rapid growth in the past decade and within this period, Togo's international trade has grown tremendously. However, like many other coastal developing nations it lacks a dry port which can enhance the efficient and effective transportation of cargoes via the country's corridor as well as relieving the pressure on the sea ports. The ability of countries to deliver goods and services on time and at the lowest possible cost is a key determinant of integration into the world economy today and landlocked developing countries in West Africa, continue to face serious constraints and challenges in the areas of trade, transit, and overall socio-economic development. Unfortunately, just as traffic continues to grow through the transport corridor by each passing year, so are the difficulties in managing the trade. Conferring to, access by hinterland nations to use the seaport(s) of a neighboring coastal country, is a legal right. Therefore, coastal nations are gratified to open their port(s) to hinterland nations.

The essence of this paper is therefore, to select an optimum location for the development of a dry port in Togo based on specific criteria relevant to the objective. The study conducted a field study in order to determine specific criteria which are considered relevant and influential to dry port location decision making. A simple forecast of container throughput for the port of Lomé was also applied using regression analysis in order to analyze the growth rate of traffic and associated capacity constraints that the port might experience in the nearest future. A Gravity location model was also employed, at the land-side in order to ascertain the transportation cost of goods from the port of Lomé to the hinterland markets with a cost minimization objective. The Gravity model was further used to determine an appropriate location for a dry port in Togo in order to benefit from economies of scale and to initiate an appropriate cargo distribution strategy.

Finally, SWOT analysis was used to analyze the endogenous and exogenous factors which are considered to be crucial to the objective of

this research and Sokodé a city in the central region of Togo was selected to be the best location for siting a dry port.

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Jacqueline McIntosh

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&

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The Togetherness of Strangers: The Role of Ethnicity in 'Place-Making' the Therapeutic Landscape

New Zealand is an increasingly ethnically-diverse country with immigration rising rapidly over the last 40 years. However, there are growing concerns that representation of different ethnicities are not always present and that a failure to acknowledge this could further increase the gaps in social and cultural inequality. With increasing globalization, some fear increasing sameness throughout the world and with it, global assimilation in the direction of dominant groups and societies. Others maintain that the effects of globalization are largely superficial and that the deep structure of cultures are largely unaltered as a result. This paper acknowledges differing forms of place production but maintains that culture, ethnicity and race all play a big part in the way that people choose to activate themselves within their natural surroundings and claim their 'right to the city'. Using Hofstede's deep cultural dimensions of individualism and collectivism, this paper aims to highlight the key differences in the types of behaviors that these two clusters typically exhibit in the outdoor environment. Drawing from case studies both internationally and locally, it finds a positive relationship between cultural dimension and engagement with the outdoor realm. It also finds a lack of accommodation for minority groups in many outdoor public spaces. Adopting a position of plurality rather than unity as a defining characteristic of a public, it proposes an alternative vision of urban life where the social relations of difference can be instantiated without exclusion. This means an environment that can provide for the activities of different groups who can dwell together *without* forming a community. Highlighting the similarities and differences between the needs of these two groups, it posits design considerations for improving cultural inclusion in public outdoor spaces; facilitating the creation of parks or natural spaces where a larger variety of ethnicities can participate, exercise and recreate.

Zeynep Dundar

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Effects of Konak Tunnel in Izmir on Lived Space

Large-scale decisions taken for the city, due to political and economic reasons, apply pressure to the spaces of daily life and do not ignore the urban space and the right to the city. The construction of Konak Tunnel in İzmir which connects Konak, the political and trade center of İzmir city, to the other important parts of the city started in September 2011 and finished in May 2015. Konak Tunnel consists of 1,674 meters two tubes. Two-year period for construction was foreseen but the area was declared 2nd and 3rd degree archeological, urban and natural site by İzmir Number 1 Regional Conservation Council of Cultural and Natural Wealth. So the construction lasted four years. The construction of tunnel started without geological studies, ÇED reports and even bidding. Civil society organizations, chambers and municipalities opposed to the project from the beginning. Also during the construction, important historic monuments and ruins were found because the tunnel area has at least 400 years of history.

During the construction process, cracks and damages emerged on the several houses and roads in Damlacık which is the neighborhood located just above the tunnel. Expropriation decisions taken for Damlacık caused rent debate due to Körfez view, proximity to the city center and not given clear information to the public about the damage before the tunnel construction. Damlacık with the history of 400 years is one of the oldest Turkish quarters of Izmir. Although it is 100 meters far from the city center, because of the wrong city politics the area has stayed away from the city center and in time, it has become a neighborhood that has been forgotten and even forced to be forgot. Damlacık, in the middle of Izmir, is one of the rare places where the neighborhood culture and union are still alive.

Neoliberal policies which has influenced all over world since the 1980s, lead to inequalities and human rights violations in cities. Neoliberal policies dictate to the citizen economic and political decisions taken by the governments. Therefore, the right to speak on the spaces they live is taken away from the citizens, urban spaces in major cities turn into a commodity and capital that relies on power becomes the new arbiter on daily spaces of citizens.

During the process, the residents of Damlacık who were faced with the danger of losing their homes organized forums and showed their reactions to the project but many houses in Damlacık were damaged and expropriated. Residents were forced to move to other parts of the city. This case clearly shows that urban planning of the public sector is based on the accumulation of capital and it disregard the lived spaces of the city. In this study a comprehensive reading of the situations which Konak Tunnel has caused

from the beginning of the Tunnel planning will be discussed according to the terms “right to the city”, “lived space” and “daily life”.

Sara Eriche

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Between Reality and Virtuality: Digital Tools for the Enhancement of Cultural Heritage

The field of new heritage uses a range of digital tools and communication technologies to interpret and reconstruct cultural heritage. It has become evident that the digital representation of cultural heritage is not the only challenge of research and questions are asked about the future challenges of research. This study examines some of the challenges, such as engagement and evaluation, that have been addressed in creating virtual environments of cultural heritage.

Virtual environments that are integrated with cultural heritage and represented through digital media are often classified as "virtual heritage". Today, the new digital tools offer us the chance to experience virtually reconstructed historical sites or virtual heritage sites such as visitors, travelers or even residents.

Some extensive forms of technology mixed with the real world known as "Mixed Reality" and "Augmented Reality" have also been applied in the experience of archeology and heritage. These applications are frequently identified with the reconstruction of ancient sites in the form of reproduction of accurate 3D models. Virtual environments that are culturally embedded are often classified as "virtual heritage". Emerging media and digital tools offer us the opportunity to experience 3D historical sites rebuilt virtually as visitors, travelers or residents. Many critics have identified several problems that often inhibit the spread and widespread use of virtual assets. However, these criticisms are mostly focused on the "process" or the "product" but do not consider the "user".

This study was created with the aim of experimenting and consistently adapting IT applications capable of displaying in a mixed environment, three-dimensional images and informative data related to cultural and artistic heritage, both existing and not, with direct application to the case studies of Villa Ottolenghi in Acqui Terme and the Polytechnic School of Genoa.

The research project wants to use a transdisciplinary perspective that is able to find solutions converging to issues related to contemporary museology, which generate complex cognitive dynamics based on the spatial exploration of data and the systemic understanding of the processes and relationships that distinguish them. There are many fields of application of digital design, in particular identifiable to the often overlapping areas of instrumental design, creative design and "utopian" design (Purini 2003). Thus Unali, which in relation to the representative models induced by information technology, identifies as theoretical-operational spaces of architectural

design, a representative-instrumental space, a conformational-creative space, a media-informational space.

In the specific analysis, and representation of architectural assets, the digital dimension is confronted with the reality of architecture, the synthesis of spaces, surfaces, volumes, materials and technologies, also the result of processes of change and stratification testimonials of events and architectural cultures that have succeeded over time.

The synthesis image is generated by the computer language, constant interface between operator and model. As the drawing tools play a not indifferent role in the final graphic realization, analogously hardware and software influence the creative process, sharing the same process (Gaiani 2008).

The search for possible solutions and the systematic application of the current integrated survey tools, data cataloging and digital restitution allows to compare parametric /assisted three-dimensional modeling software with computational/generative design software along a real application path.

The research project brings with it various methodological considerations; the objective is to analyze both the implementation paths and the results obtained through the critical use of digital tools, comparing the outcomes and the necessary resources.

Through the systematization of data related to these paths, an application reference framework could be defined that provides indications about the most appropriate areas of use in the field of communication (visual/informative/graphic), in the face of a careful analysis of the state of the art of the national and international digital culture and the comparison of integrated metric-geometric survey systems with the experience of modeling the metric data acquired for the analysis of the historical-architectural heritage in integrated procedures for conservation, protection and enhancement through 3D Rendering and Augmented Reality.

Virtuality thus understood triggers knowledge and action with the aim of reaching a more conscious critical position of digital representation and of virtuality in the value of dimension other than the real.

Patrizia Falzone
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Color and the Urban Environment: The Survey on Facades Painted with Frescoes of Houses and Palaces of the Historical Centre of Genoa

In the context of the city and of the urban form the color element certainly appears to be a distinctive element of the identity and recognizability of the places. In particular, in the European historical city, the color element with its monochromatic, bichromatic or polychromatic decorative elements, is an inseparable component of the individual architectures, of the urban spaces as well as of the entire city.

All this comes out clearly in the case of the great historical center of Genoa (Italy), where this use of frescoed paintings appeared in the fifteenth century, evolving in different styles, up to the early twentieth century. A great heritage, which involves first of all problems of knowledge, and then of restoration, conservation, enhancement.

Genoa, in the “Siglo de oro de los genovesos”, the sixteenth century, dominated by the great figure of Admiral Andrea Doria and by the Genoese entrepreneurial nobility, is also in the artistic culture an important reference center in Europe.

One of the elements that spreads from here is the phenomenon of the façades painted in fresco, which for late fifteenth - early sixteenth extends in northern Europe, with the common practice to apply not only to the new buildings, but especially to the renovation and expansion construction - houses - palaces - castles - a function of both formal unification with the decoration, it is celebrating the family.

This Genoese tradition initially connects to the Lombard and Tuscan culture of the fifteenth century, purely classical, due to the direct relationship with the Magistri Antelami, Lombard builders active in the Middle Ages also in Genoa. This tradition developed itself in reference to the Roman artistic culture of the sixteenth century.

The most representative typologies, often by famous artists, are:

- **Lombard style typology**, in reference to the work of the painted façades of Bramante, perhaps the least known aspect, characterized by its strong and classical fifteenth training, (which took place in the humanistic circle of Urbino), which he imports into Lombardy and in Milan.
- **Roman taste typology**, fully sixteenth century, expressed in the work of Peruzzi, of Raphael, of Perin del Vaga and of Polidoro, based on mythological and historical figures and figurative scenes.

- **Alessi tipology**, purely architectural character, derived from Galeazzo Alessi architecture.

The presence of these artifacts still today characterizes single scattered buildings in the historic city, but sometimes also urban spaces (streets, squares, alleys) where they are often many preserved examples of this widespread practice, perpetuating an urban image and a particular and unique, strongly identity.

So the theme of knowledge, preservation, restoration and enhancement of this tangible heritage are all key issues for the purpose of maintaining identity and image of the historic city in all its components.

Above all, it is fundamental the issue of knowledge, and graphical analysis typologies that must accompany those historical, archival, mineralogical and physico-chemical, for the purpose of proper conservation and/or restoration, namely:

1. survey, in 1:50 or 1:20 scale, the architecture fronts and the decorative apparatus in black and white;
2. survey, in 1:50 or 1:20 scale, fronts and painted decorations in color values;
3. survey and representation of the degradation of that the decorations and of the architecture;
4. survey and representation of detail of individual decorative elements, up to 1:1 scale.

Single building:

- Painted façade of Palazzo Spinola in Strada Nuova (today Via Garibaldi);
- Painted façade of Palazzo Cattaneo Adorno in Strada Nuova (today Via Garibaldi);
- Painted façade of Palazzo Pallavicini in Piazza Fontane Marose;

Urban spaces:

- Pinelli palaces in the Piazza Pinelli;
- Palaces of Strada Nuova in the overall interpretation of color in their sequence.

Andrea Ferraz Young

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**Adaptation Actions for Integrated Climate Risk Management
into Urban Planning: An Integrated Approach in São Paulo
Metropolitan Area (Brazil)**

This work explores some questions highlighting how political actions and public decisions can improve the resilience of people and places in São Paulo Metropolitan Area (SPMA). What are the connections among city planning processes, climate change and resilience? How political decisions could connect planning and governance with special focus on adaptation and resilience? Cities face a chronic stresses and/or acute impacts, therefore special focus should be on the development of regulations and incentives to the interactions of concepts on climate change, city adaptation and resilience, through the perspective of transition for urban resilience, which enable cities change and build capacity of innovation in face of uncertainty. Changes in many extreme weather and climate events have been observed since 1933 and precipitation patterns are projected to change in the future (2030-2050), possibly resulting in floods caused storms or water scarcity caused by droughts. The urban areas in SPMA are highly complex with interdependent systems (i.e. airports, commerce and international trade, industry). A failing caused by an extreme event (e.g. storms, heavy rains) in this urban system can result in cascading impacts that can disrupt such as that occurred in 2011 (i.e. interruptions of energy, transport system, and communication). On the other hand, between 2013 and 2014, SPMA has experienced a terrible drought and scarcity of water. For this reason, almost ten years ago, precisely in 2010, it was developed a scientific project called Vulnerability of Megacities to Climate Change in São Paulo Metropolitan Area. We can say that many of the expected events actually occurred such as the floods in 2011 and the drastic drought between 2013 and 2014 as much as the return of floods in 2016, 2017 and 2018 (during summer seasons). Actually, we will take a retrospective of what has been technically analyzed in the past and the evolution of the events up to the present moment. Resilient cities will require new issue and problem framings, analytical procedures, and deliberative public processes that together can generate norms and practice for safest places. Physical changes without accompanying social, political and institutional engagement will ultimately fail to prevent disasters.

Teodoro Georgiadis
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The Role of Urban Modelling in Preserving Citizen's Health

In few decades, the urban population will represent more than $\frac{3}{4}$ of the entire world population. The places where the humankind will live will be crucial to assure the proper conditions of wellness, accessibility to the services, and dignity. The structure of the cities will be of paramount importance in assuring these conditions and politics should be aware that actually exists the possibility for a proper modeling of the city itself. Even if societal conditions are not possible to be exactly parametrized, all the other physical inputs that leads to impact on the public health can be modeled in order to assure, at least, a minimum impact during cities regeneration. The aims of this presentation is to highlight to some experiences conducted in urban environments.

Ratna Ghosh

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&

Uttam Kumar Roy

Assistant Professor, IIT Roorkee, India

Evolving Strategies for Housing Development at a Sub-Regional Level

This study is an attempt to tackle the existing and upcoming issues related to housing at a sub-regional level, where, at the core of the study area herein termed as Greater Roorkee Area, lies the city of Roorkee, which has since long been an established educational and institutional hub of national importance. The analysis of this region reveals its increasing dynamism and shifts towards the tertiary economy from a primarily agricultural region. The core strategy to tackle the emergent issues from the study was thought to be a balance between regulating the intensity and location of development by giving due consideration to the ecological fragility apart from anticipated future growth in transportation and employment areas. Adopting this scale of study provides the researcher an opportunity to explore the issues in details and therefore the results that are produced are location specific apart from covering the regulatory framework aspect.

Dominic Hofmann

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Infrastructure – Design – Emotions

Introduction. The presentation is based on an ongoing Ph.D. project. The aim of the presentation is to explain the influence of design on the modal choice. Symbolic, aesthetic and functional levels of design will be considered. These results will help manufacturers and operators of sustainable transport and direct transport infrastructure to classify the importance of the aforementioned factors. In addition, through an appealing design, an emotional bonding to a mode of transport can be established. The research is concentrating on sustainable transport modes like public transport, sharing-systems, walking and cycling.

Theoretical background. The transport sector causes 18% of all greenhouse gas emissions in Germany (umweltbundesamt.de, 2016a). The traffic sector also dominates the primary energy use with around 24% of all consumptions (umweltbundesamt.de, 2016b). The trend of the overall energy consumption over the past 20 years is steady increasing. A large proportion of emission and consumption are attributable to motorized private transport and air traffic. The primary objectives of transport planning are to avoid and relocate traffic as well as handling traffic in an environmentally friendly way (Müller, Scholich 2010).

Methods. For the interdisciplinary approach, a comprehensive mix of methods was necessary. The first method was a comprehensive literature review. Practical knowledge was gained during a local conference (with corresponding workshops), where 80 experts participated in 2015/Frankfurt. Furthermore, 27 expert interviews were conducted in early 2016. Furthermore, qualitative surveys in several case study examples in Europe were done in 2016/2017. In 2017, a quantitative user survey was done with overall 400 participants. The findings of all methods result in comprehensive recommendations for traffic planners.

Results and Conclusion. The project/research is still ongoing. First results show, that the importance of design, regarding the modal choice, is a research gap. Especially the necessary interdisciplinarity scares off a lot of researchers. But all the interviewed experts mentioned that the potential of that approach has a fundamental importance. The conference will be used, to present first exclusive results of the project, especially scientific findings of the quantitative surveys. An interdisciplinary project, carried out by engineers, influenced by architects, designers, psychologists and sociologists to promote sustainable transport modes.

Sabrina Howard

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The Window Seat: Examining Public Space, Identity, and the Politics of Everyday Life through Public Transportation

“Window Seat” uses public transportation as a lens through which to explore the relationship between social identity, public space, and democracy. Through ethnographic inquiry, interviews, media analysis, and critical engagement with literature in sociocultural psychology, urban studies, and gender studies, “Window Seat” moves beyond an urban planning approach to public transit to interrogate questions of individual and collective identity, civility, and violence by asking: “How does using public transit as the entry point provide unique insights into the relationship between social identity, politics, and public space”? and “How do our experiences in public space contribute to our ideas about ourselves and our relationship to the world”?

Benjamin Kaiser

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Some Problems of Interpreting Spatial Analysis Results

While various disciplines of urban research describe the city as an architectural product in terms of functionalism, the methods of *spatial analysis* try to grasp the spatial arrangements defined in terms of architecture analytically and propose to interpret them as expressions of socio-economic relations. Such an interpretation can only be achieved by recourse to functionalist perspectives that describe the corresponding social conditions and their spatial impact. However, there is so far no uniform methodology of interpretation to be identified, which leads to a twofold conceptual difficulty: on the one hand arbitrary interpretations are serious threats, since results can be interpreted differently depending on functionalist terms, on the other hand there is a risk of circular explanations.

This interdisciplinary approach aims at developing a theoretical framework within which formal and functionalist approaches of urban research can be linked consistently in order to achieve a more precise handling of *spatial analysis* results. The variety of functions of the architectural space is set out to be restricted by both absolute and relational formal properties of architecture as well as by the respective *condiciones humanae* and *condiciones sociales*.

Since the methods of *spatial analysis* relying on the relational properties of the architectural space, they are first to be scaled to the absolute properties of the human dimension (Jan Gehl). The principle of pertinence (Philippe Boudon) is auspicious to achieve this goal.

On this base, second, architecture is set out to organize the accessibility to public, semi-public and private spaces and thus the possibility of encounter as a precondition for any social interaction. In the case of internal architectures (i.e. residential buildings), the degrees of privacy and security increase corresponding to the amount of rooms to be passed.

Third, the possible functions of external architectures are heavily constrained by the respective community. For example, central public open spaces can function as a village square, market place, parking lot or as a traffic area, depending on technologies, the internal social cohesion of the community and the circumstances of the surrounding region.

Thus, the presented methodological approach will propose a more accurate and more reliable interpretation of the results of those recognized tools of *spatial analysis* that are globally received in present day (digital) planning practice.

Ratan Kar

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&

Ruchika Bajpai

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Climatic and Vegetational Changes during the Last 11,500 Years from Glacial Sites in Lahaul Valley, Western Himalaya, India

The higher Himalaya is an exceptional repository of past climatic records, which provides a unique prospect to study the interaction of glaciations and climate during the Quaternary Period. Among the various proxies, pollen grains recovered from the terrestrial sediments offer a broad outlook of the vegetation and significantly help in understanding the long term climatic changes. Pollen-spores preserved in the sediment layers provide details about the environmental conditions at the time of their deposition. Hence their alterations, both qualitatively and quantitatively, in the sediments at different depths, are excellent indices for the analysis of temporal variations of climate. The objective of the present study is to decipher the past vegetational and climatic changes during the Holocene (~11,600 years) from selected glacial sites in the Lahaul Valley, India. The area is a cold, high-altitude desert located in the Trans-Himalayan region, characterized by alpine, steppe type of vegetation.

Palynological studies have been undertaken around Hamtah and Chattru glaciers from the surface and sub-surface sediments. The study of surface samples has brought out the pollen-vegetation relationship, which has been used as a modern analogue to deduce the past vegetational and concurrent climatic changes from the sub-surface sediments. In the outwash plains of the Hamtah and Chattru glaciers, two trial trenches having a depth of 90 cm and 130 cm respectively, were dug to rebuild the vegetational changes with reference to past climatic fluctuations. Overall, the arboreal pollen is dominating over the non-arboreal pollen in both the profiles. Various climatic phases have been inferred since the last 11,500 years BP to Recent, on the basis of the changing frequencies of arboreal and non-arboreal pollen (AP/NAP ratio).

Jesus J. Lara

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Latino Placemaking: Cultural Resiliency and Strategies for Re-urbanization

The purpose of this presentation is to understand the factors that contribute to the establishment of Latino neighborhoods in urban areas, and to explore how these Latino communities contribute to the creation of social, economic, and cultural resilience for their residents. To address the research objectives, this presentation examines a series of commercial corridor case studies in different urban areas across the U.S. in order to learn from best practices, and to draw out some lessons on cultural, social, and economic resilience among immigrant neighborhoods. These cases show public policy makers, academics, and business owners as examples of how Latino communities can revitalize retail corridors and improve both the economy and quality of life.

An overview of the steps that planners and policymakers can take include responding to an urban population's increasing diversity and changing demands, examining the processes and mechanisms that contribute to ethno-cultural alienation in Latino neighborhoods, and guaranteeing that any revitalization efforts in Latino communities will enhance local assets. Some prominent urban scholars argue that the idea of creating community via deterministic designs must be re-evaluated and that urban patterns of class, culture, race, and ethnicity should be part of the redevelopment of urban places (Marcuse 2000, Harvey 1997). The study areas are currently part of a transformation process resulting in areas with vibrant commercial centers, and these centers help maintain the social networks that provide ties to Latin American home countries while working to acclimate new immigrants.

A detailed analysis of business activities and census data in the case studies illustrate changing spatial patterns and demonstrates how ethnic minority entrepreneurs are giving new meaning to such abandoned and dilapidated landscapes as strip malls and older, unmaintained neighborhoods. This presentation also investigates the specific ways in which urban spaces are being transformed and modified to suit the needs and cultural preferences of their residents.

Latino immigrants play an important role in shaping the built environment, and what that role implies for the future. Scholarship in Latino urbanism is practiced across many disciplines, with scholars engaged in research from a variety of perspectives and geographic representations. Books such as *Latino Urbanism* (Diaz and Torres, 2012), *Diálogos: Placemaking in Latino Communities* (Rios and Vasquez 2012), *Barrio Urbanism* (Diaz 2005), *Hispanic Spaces*, *Latino Places: Community*

and Cultural Diversity in Contemporary America (Arreola 2004), and Latino Metropolis (Valle and Torres 2000) all these provide a foundation for discussions about the future course of Latino urbanism in the US.

Sang Hyup Lee

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The Korean Traffic Count System and The Role of KICT in National Traffic Data Collection

Traffic volumes based on the vehicle classification are the important basic data which are directly used for transportation planning, transportation network planning, highway design, highway management, automated highway control and so forth. In Korea they are collected by two types of collection methods, one of which is the continuous traffic count and the other is the short duration traffic count.

The continuous traffic count is conducted by collection of traffic data for 365-day period a year using permanent traffic counters. The Ministry of Internal Affairs began the nationwide traffic count in 1955. Eleven years later, the Ministry of Construction took charge of the task. In 1985 loop detectors were used for continuous traffic count. In 1995 automatic vehicle classifiers were installed for everyday operation on national highways for the first time. Currently the continuous traffic count data are collected at about 630 spots on national highways and at about 200 spots on national expressways using automatic vehicle classifiers.

The short duration traffic count, the other type of the traffic count system, is conducted by collection of traffic data for a few days period using portable traffic data collection devices. Currently the short duration traffic count data are collected at about 785 spots on national highways. The collection occurs one time for the same spot a year. In this case the vehicle classification data are collected manually.

Unlike continuous counts, short duration counts are performed by collection of traffic data for a few days period and thus, the magnitude of deviation of collected data from AADT varies depending upon when data collections take place. Therefore, this study was done to find out the best months and days of data collection of each highway classification in order to enhance the accuracy of AADT estimation.

The study result shows that 1) for urban highways and rural highways, the weekday traffic volumes show the least deviation from AADT for months March – November, and 2) for tourist highways, the traffic volumes on Fridays and a few days before and after the vacation periods show the least deviation from AADT. Therefore, in order to enhance the accuracy of AADT estimation for the whole national highway short duration traffic count, it is recommended that first, data collection days for tourist highways should be selected to be Friday or a few days before or after the vacation period, and then, data collection days for

urban highways and rural highways should be selected to be weekdays of months except December – February.

Tolga Levent
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Urban Regeneration or Urban Degeneration? A Concealed Story of Urban Change in Turkish Metropolitan Cities

Just before the New Millennium, in year 1999, a high intensity earthquake hit Turkey and caused massive damage and destruction in northwestern cities of Anatolia. Just after the societal shock of this earthquake, all the stakeholders of urban development realized the fact that the possibilities of such large-scale losses in Turkish cities are relatively high due to the low physical qualities of building stock. In a very short period of time, depending on a broad consensus, urban regeneration appeared as the strongest option by replacing unqualified buildings with the qualified ones.

At the very beginning, urban regeneration was conceptualized as a panacea curing all kinds of urban problems. This conception increased the popularity of urban regeneration, both in theoretical and practical domains. It has become one of the widespread concepts in theoretical domain, the sign of which is the increasing number of graduate studies focusing on different aspects of urban regeneration. In the practical domain, since they are strongly supported by local and central authorities, the number of urban regeneration projects has increased as if they are the only legal interventions to built environments.

The apparent dominance of urban regeneration projects on planning practices does not mean that they are problem-free in Turkey. There is a theoretical ambiguity about the definition, input-outputs and processes of urban regeneration. The practical reflection of this ambiguity is a varied range of projects, which have been dominated by the *concrete* expectations of subcontractors and land developers, like more construction areas or more urban rents. The projects are obviously successful by increasing the physical quality of building stock because of the recent advancement in construction technologies. However, they also cause some problems related to the economical, social, cultural and spatial dimensions of cities. With reference to many cases, it can be easily said that the costs of these problems are more than the benefits of urban regeneration projects, especially for tenants and low-income property owners.

The aim of this study is to concentrate on the problems resulted from urban regeneration practices in a systematic way to reply the question whether urban regeneration projects create a kind of urban degeneration or not. In the first part of the study, there is a brief historical description of urban regeneration in the Turkish context, focusing mainly on the methods and priorities of urban regeneration. This description is important to understand positive and negative aspects of ongoing processes of urban regeneration. Second part concentrates on the general problems of urban

regeneration projects with reference to different urban dimensions. The clear definitions of these problems are significant because this study assumes that urban regeneration projects may cause urban degeneration if these problems are concentrated around certain projects. The conclusion of the study proposes possible changes in the processes, priorities and principles of existing urban regeneration practices so that the possibility of urban degeneration could decrease.

Hsuan Lo

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The Influence of Urban Renewal on Housing Vacancy Rates: The Case of Urban Renewal Implementations in Taipei City

After their rapid economic development, many urban areas around the world have less and less developable space, and the notion of Urban Renewal (UR) has been developed to address many urban issues. The concept was first developed in America in the 1960s, and initially emphasized large-scale redevelopment, which led to oversupply and housing market saturation. Although conceptions associated with UR that employ small-scale renewal have since appeared, many local-level governments still apply large-scale redevelopments as the primary method, including Taipei City, which causes long-term ramifications. For instance, compared to the capitals of other Asian countries, Taipei City truly possesses higher Housing Vacancy Rates (HVR) and has the largest number of large-scale UR cases. Also, after reviewing available literature, it is evident that UR and HVR share similar notions such as house price level, housing attributes, investment motivations, and urban development. Therefore, this research aims to identify the correlation between UR and HVR through HVR's influencing factors to evaluate UR's influence on the housing market. However, the broad variety of immeasurable factors such as personal preference are not the emphasis in this research, meaning that this research stresses the supply-demand side.

Although the analysis result found that the correlation between UR and HVR is weak and even slightly negative on the basis of the spatial and quantitative analysis of housing prices and attributes, according to statements from interviewees, investment motivations and urban development of UR still impact HVR evidently. The main reasons why housing price and attributes do not influence HVR significantly is just because there are several barriers to implementing UR such as the lack of other incentives and the gaps between departmental policies. Thus, from the analysis results and international cases, it is suggested that Taiwanese governments should make UR more attractive to investors in order to improve urban environment on the one hand, guidance and regulations should also be amended to clarify and simplify UR procedures to prevent UR implementation from increasing HVR through excessive investments and urban development on the other hand. Finally, this research will point out the specific issues and solutions as findings and recommendations to address the problems between imperfect UR institutions and high HVR.

Massimo Malagugini
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&
Maria Linda Falcidieno
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The Representation is a Visual Language

It is a well-established opinion that representation can be meant as a potentially universal language, because it goes expressed through visual references, common background.

This is true for to the whole spectrum of visual expression: photography, mixed techniques or drawing, computerized information; this is valid for all applicative fields, realistic drawing, technical drawing, relief, editorial and advertising graphics.

Different representations, depending on the aims and different languages to express them; this means that the expressions of communication through images are transmitted by different ways, are based on different prerequisites and use different tools and methods.

It does not only refer to drawing or relief or graphics, but also to the whole vast world of representation; not only traditional techniques, but the whole field of image redaction.

The research about representation as visual language is conducted according to different trends: on the one hand, the investigation about the concept of awareness, participation and responsibility in the drafting of a visual message, while, on the other, the recognition of the components of the message itself.

Lucia Martincigh

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Anna Vincenzoni

Councilor, Town Municipality of Rome, Italy

Marina Di Guida

Postdoctoral Research Fellow, University of Roma Tre, Italy

&

Giovanni Perrucci

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Tools for a Better Liveability in Neighbourhoods: The “Environmental Island” Design Methodology and the Citizen Engagement Process

The constant increase of private vehicular traffic and its arrogant pervasiveness worsened the urban environment liveability in many Italian cities and destroy more and more their true essence. Only in the last thirty-year period, in Europe, there was a marked acceleration in scientific research and policymaking, for defining and experimenting traffic calming strategies and measures aimed at improving the level of safety and accessibility, creating more shared spaces and increasing quality of life, especially in neighbourhoods. Lagging behind other European countries, also Italy started to relate the slow speed principle to the liveable district notion; thanks to the New Traffic Code, the concept of «Environmental Island» was introduced: a «single urban zone delimited by the main road network, aimed at recovering urban spaces’ liveability». The «Environmental Island» can then be meant as a possibility not only for reorganizing vehicular mobility but also for upgrading residential urban areas and satisfying dwellers’ daily life needs.

The analysis of limits and possibilities of application demonstrated that the used methodology could take, both from scientific and operative viewpoint, to interesting results defining actions’ location, priority and range and providing administrations advice on the opportunity to act. It is indeed the tight interlace between design process, involving technicians, and public consultation process, involving citizens and local administrations, that can achieve success. In order to ensure the effectiveness of this work, a widespread awareness of the need of changing rooted habits, regarding urban space use, has to be developed; this becomes then the best occasion to implement a type of collective education that leads to a more responsible behaviour from the overall sustainability viewpoint.

For years, the topic here presented was researched, also featuring pilot studies in Rome, and now is going to become an applied research; thanks to the collaboration with various stakeholders, a participation process,

aimed at defining the implementation of an Environmental Island in one of the oldest and most central districts of Roma: Rione Monti, is currently underway.

Abraham Paulsen

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**Pentecostalism in Anti-Ghettos in Santiago Chile's
Metropolitan Area: Bajos de Mena, a Case Study Designed to
Generate a Theory of Religiosity in Urban Spaces Classified
as Vulnerable**

I herein analyze the geography of religion, and from the aforementioned viewpoint, the spatial distribution of Pentecostal temples and places of worship in Bajos de Mena, an area located in the Municipality of Puente Alto in the Metropolitan Region of Santiago Chile. I posit the issue of socio-spatialization of vulnerability and disaffiliation, Pentecostalism and the dynamics of secularization. The sector is categorized as an anti-ghetto in which there is evidence of specific categories of secularization and religious movement.

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Monitoring Wildlife in Romania – Empirical Evaluation of Argos Location Errors in Romania

Tracking animals and movement data collection is a challenging task due to the technological and data quality constraints (Turchin, 2015). Location transmitters must be resistant to shocks, appropriately sized to the animal monitored, and include a long lasting battery or alternative power source for consistent two-way communication between devices and remote satellites. A device meeting all these parameters is cumbersome and heavy, therefore difficult to use. The challenge is the device's physical size since such a device must not exceed 5% of the animal's body weight.

The global navigation satellite system such as GPS offers the possibility to collect acceptable quality data, but the devices equipped with GPS are particularly heavy and not suitable for many species. For small size species is more appropriate the use Argos systems, but the location of a Platform Transmitter using Doppler effect influence the accuracy of location (McClintock et al., 2015). Argos operator, Collecte Localisation Satellites - CLS, attribute the position of a PTT to a location class based on geometrical conditions of the satellite pass and stability of the transmitter frequency (Madry, 2015), however, little is known about the degree of the accuracy of error prediction in Romania. To overcome the lack of data about Argos telemetry accuracy in Romania, we performed a field test with 5 low power solar PTT's (GeoTrak, Inc. USA, 23 g) in 4 geographic locations in static, low speed, and high-speed condition. We compared Argos and true GPS locations, analyzed the error structures and tested the influence of filtering methods on the quality of Argos location datasets (i.e. retaining best location classes, keeping only the locations complying with the maximum speed of the studied animal, Douglas Argos filter based on spatial redundancy, movement rate and angles (Douglas et al., 2012)). We conclude that Argos locations in Romania exceed the error values assigned by CLS and the data need to be filtered and tested before movement analysis.

The study was supported by a grant of the Romanian National Authority for Scientific Research, PN-III-P2-2.1-PED-2016-0568 Argos based applications for real time wildlife monitoring in Romania (BioMoveFix).

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&

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Microscale Detection and Characterization of Lane Changes using High Resolution Driving Data

Microscopic simulation models are founded on a series of tactical driver behavior based models most prominently among those are the car following, lane changing, queue discharge and gap acceptance models. With the emergence of high resolution probe vehicle data that are generated at rates at or exceeding 1 Hz, and with ongoing efforts at digitizing the road infrastructure in preparation for the operation of connected and autonomous vehicles, the time is ripe to exploit those capabilities to detect and characterize microscale lane changing behavior. This effort is in part motivated by the need to properly calibrate and validate current lane changing/ selection algorithms in microscopic models and in another part by the emerging ability to identify lane changing “hotspots” as potential safety problem locations on the roadway network.

The research approach relies on data generated from an in-vehicle unit called “i2d” for intelligence to drive. The unit collects and archives in the cloud second by second data on vehicle position, speed, 3D accelerations among a host of other metrics extracted from the OBD-II vehicle port in near real time. Units were installed in approximately 30 vehicles driven by volunteers in a naturalistic driving setting. Archived driver behavior i2d data dates back to 2014, and includes over 50 million seconds of driving under a variety of road, environmental and traffic conditions. The initial work consisted of developing and validating a lane detection algorithm. The algorithm, implemented in the R platform, uses as input 1 Hz individual vehicle positional data, along with lane-by-lane latitude-longitude information defining the centerline and edges for each lane. Taking advantage of several embedded R utilities, the algorithm identifies the lane position closest to the vehicle and assigns that lane until it identifies a crossing of the line divider between the current and destination lane. The start and end times of a lane changes, along with the lateral speed associated with each are also tracked. The algorithm has been validated through a series of controlled experiments where pre-specified lane changes (to the right and to the left lane) were executed and videotaped both on a series of straight and curved road sections. Out of the 26 controlled lane changes in that experiment, the algorithm had a detection rate of 93% and a false alarm rate of 8%. Moreover, the majority of the detected lane changes were properly characterized as mild, moderate or aggressive. The lack of perfect

concordance was primarily the result of noise presence in the longitude/latitude data from the vehicle GPS unit.

Subsequent to validation, the algorithm was run on the larger dataset, and the location, intensity and direction of lane changes were characterized. The presentation will cover both model development, validation and applications both for mobility and safety purposes.

Francesca Salvetti
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Quality Standards for the Restoration of Color Values in Urban Areas: Color Projects

Introduction: Polychromy in architecture has always been an integral part of the buildings with its ability to influence shapes, volumes and proportions; fundamental identity component of reference for cities, environments and places that over time has generated images that characterize the landscape in any part of the world on a mnemonic and perceptive level.

In the twentieth century, the role of color in construction and its study as a qualifying aspect of our environment led to the emergence of multiple fields of investigation on historical documentary, technical/objective, theoretical/sociological observations. The control of the colors on an urban scale, in particular the historical one, where the signs left by the past are present and evident, becomes an element where the architectural debate has led to the formulation of different approaches and experiments in design choices. To date, the perceptual chromatic study at urban / environmental/landscape level can be divided into three macro areas: the color of historic buildings, the color of public housing / urban buildings and the color of new buildings.

Research Methodology: The theme color of historic buildings has been investigated since the second half of the twentieth century through the Color Plans, Color Projects, redevelopment of road axes aimed at the identification and use of methods and models of study, attentive to the complex of urban furniture , also considering the aspects related to the visual perception of the chromatic values hypothesized for the single building and its context, for the purpose of quality and congruence of the interventions. Here we will analyze the origins, the development of plans and color projects in urban areas and in particular the practices currently in use, analyzing in particular the differences and peculiarities of some case studies.

Expected Outcomes: In Italy, the birth of the Color Projects, was intended to standardize and standardize interventions on historic buildings and to intervene on the colors of the historical centers as a whole. To date, issues related to the color component in the urban landscape, continue to refer to territorial-landscape areas at the municipal level, implemented through the Plans and the Color Projects and adopted at the administrative level as an instrument for urban planning. What are the most widespread theoretical/practical attitudes in color design? What aspects are still to be explored and the new perspectives for specific national regulations in this regard?

Nattapon Sang-arun
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Two-Stage Inequality Decomposition Analysis of Thailand's Spatial Economy from 1995 to 2015

This study analyses spatial economic inequality in Thailand over the 1995-2015 period using two-stage inequality decomposition analysis to divide the levels of spatial inequality: between-region inequality, between-provincial cluster inequality and within-provincial cluster inequality. The analysis shows that overall inequality has decreased particularly since 2007 which performed by the declination of between-region inequality. On the other hand, between-provincial cluster inequality has increased which means when the trend of overall inequality is downward, another inequality occurs. This situation reflects on the spatial agglomeration of economic activities, it also found in the level of within-provincial cluster inequality. For these reasons, the further spatial economic development policy should deeply emphasize the development in the levels of provincial cluster and province and also integrate with the other perspectives of development.

Michela Scaglione

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Basic Methodology for the Knowledge of a Territory through the GIS: Analysis, Surveys and Representations

The research, developed in the PhD School of Architecture at the Polytechnic School in Genoa with relator Prof. Arch Patrizia Falzone, has developed a "method of investigation" aimed at knowledge of a Ligurian system coast and its hinterland, and identified the best data management, through the use of an information system able to relate the information gained.

The research identified a processing system and data management, aimed at the diagnosis, and therefore also to the project: a system implemented for the purpose of monitoring, both on the ground that built on.

The data are derived from the analysis of this knowledge punctual - land and built - including the historical, socio-economic and environmental data more significant: from the territorial scale to the building scale.

The study and analysis carried out are aimed at identifying the identity and vocation of a territory, through a project of knowledge of the natural and the anthropic background: a milestone to assess what future scenarios might be most appropriate.

The hypothesis underlying the research argues that an integrated study carried out by the Information Technology and Geomatics can form the cognitive structure complete, adequate for any kind of intervention: rehabilitation, monitoring and development of the area.

The issues investigated during the research were:

- What, how much and how to collect the data necessary to actually describe a critical and complex territory?
- What is essential to document and represent?
- What type of representation is used?
- How is the acquired system-data configured?
- What communication techniques and narrative models can be used to facilitate the accessibility of results?

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&

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Decoding the Power Relations in the Production of Space by Mapping Controversies Method: İzmir “Basmane World Trade Center” Case

Space has many dimensions and it has been conceptualized in a variety of ways within different disciplines. Disciplines such as geography, planning and architecture have developed concepts from interrelated perspectives seeing space as a physical phenomenon, a condition of mind or a product of social processes (Madanipour, 1996). In this study, space is discussed as a “process” in a relational approach. Space is not an immutable product but a dynamic process implicit power relation among different actors who have different motivations, tools and reflections. Taking the space as a process, not as a final product, will decipher the relations of power embodied in the space and makes all layers of the space visible. Approaches that consider power, space, society and subject as different poles, and evaluate the relation between these poles as cause-effect relations do not provide this opportunity. This can be achieved through a relational and process-oriented approach. Actor Network Theory (ANT) is an alternative theory with its relational and process-oriented approach.

ANT has its origins in studies of the sociology of science and technology, associated with the work of Bruno Latour, John Law, Michel Callon and many others in 1980's. ANT sorts out spatial configurations of variety of actors, both human and non-humans, who are placed and positioned differently in networks and construct different relations and forms of power (Bosco, 2006). To analyze the space as a series of transformations enables decoding these power relations that make the space controversial. “Mapping controversies” method, based on Actor Network Theory, is developed by Bruno Latour for such analyzes. The method offers a new way to follow and document interactions, translations and transformations during the production of space (Yaneva and Heaphy, 2012).

This paper applied “mapping controversies” method for decoding power relations in the case study area “Basmane World Trade Center” in İzmir, Turkey. The land is located in a region that was used to be an Armenian neighborhood in Ottoman period and there was a hospital on this land. After “The Great İzmir Fire” in 1922, the land was destroyed. In 1923, The Republic of Turkey was founded and planning cities in a modernist way became the primary politic of the new government. İzmir's first city plan was prepared by Rene-Daymond Danger and the land got

its triangle shape with a size of 20.866 m² by this plan. The land was used to be a central transportation hub until the garage functions moved to another region in 1975. The land was transformed into an empty and precious lot in the city center which has been provoking different actors with different motives.

Land owners, developers, mayors, investors have involved in a process with a motive to profit from high value of the land. Their interventions have translated the program (from "tourism and trade center" to "hotel and convention center"; from "hotel and convention center" to "metropolitan activity center"; from "metropolitan activity center" to "tourism-trade area with housing and municipal service area"), height limitation and total construction area (from 97.000 m² to 104.000 m²; from 104.000 m² to 230.000 m²) for several times. Nongovernmental organizations have involved in a process for common good and filed several cases, organized panels and protests against the investor-friendly projects. Many renders has been served via press to create "the skyscraper" image among public. Ground was broken for twice: symbolic ground breaking in 1988 for one project, the physical one was for another project in 1998. However, the construction halted in 1999 and the land became a lagoon with its new habitants: fishes, mice, mosquitos. The discourses changed from "the highest skyscraper" to "the hole of shame".

The constantly changing relationships between land owners, city mayors, nongovernmental organizations, investors, city planners, architects, citizens, animals, greenery have produced and reproduced the land. There is still not a completed construction in the project area but there has been ongoing controversies following several political and economic issues, planning processes and jurisdiction in the heart of the city. To map the ongoing controversies, data is collected by referring to the project proposals for the area, land use plans, implementation plans and their revisions, the news published in media, press releases of Chamber of Architects and Chamber of City Planners. The collected data is visualized chronologically by diagrams. Actors are grouped as human actors, non-human actors, and institutional actors. Their interactions in different periods are visualized as actor networks. The links are emphasized depending on actors' concerns and motives like rent, design or common good. The network of power relations in the production of space is made visible by its dynamic, controversial and constantly changing characteristics with this method.

Ruggero Torti

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Signum and Visual Identity

The contribution focuses on the analysis of the role of the sign as the foundation of the visual identity of artistic-cultural artefacts, also intended as a connotation of their place of belonging. Today the cities, the territories and consequently the architectures and the works of art contained in them must emerge from the visual anonymity to stand out, even for the purposes of socio-economic development. The attention is then placed on a possible process of conception of a visual identity system that starts from the territory, from the city and its characterizing artifacts and is capable of transmitting identity and attractiveness to the users, be they residents, tourists, operators. The intent is to demonstrate the effectiveness of communication design in the definition of a sign or a system of signs that represent and make impressed in the memory the characters considered essential of a place and of what qualifies it, passing through the analysis of some case studies. We then arrive at a first conclusion that shows how the systems of Visual Identity defined for a given territorial and/or urban reality, also through significant artifacts, on the one hand they must be recognized as belonging to the population of the place itself, which must identify and reflect in them and, on the other hand, must also succeed in giving new impulses and possible future developments.. Ultimately, the definition of a sign - o of a system of signs - identifying a place can assume a relevant importance also in the conversion of territorial and urban areas.

Pruethipong Xinghatiraj

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The Formulation of Peak Runoff Rate Equation for Road Networks on Frequently Flooded Areas in Central Thailand

Many disasters have occurred in Thailand, leading to loss of life and economic damages. Most disasters are from storm- and flood-related. Most flooding disasters have been blamed from the effects of deforestation due to the development of transportation network. So, when heavy rain continues, surface runoff is increased, particularly in areas where roads were developed. If the drainage system is insufficient, it will cause more flooding problems.

The design of the drainage system is based on the maximum flow rate calculated traditionally by methods that are in the form of equations or graphs. However, there are some limitations on using such methods, especially on the urban areas in central part of Thailand that are difficult to determine the exact size of the appropriate rainfall area. This leads to the insufficient design of the drainage capacity. To remedy flooding problem in frequently flooded area especially on central part of Thailand, this study will determine the maximum flow rate through the use of mathematical model on the DEM, satellite image, rainfall intensity, soil characteristics, etc. The results show that maximum flow rates from the mathematical models are closer to the actual data from satellite images than the calculation from the traditional method.

Shaopeng Zhong

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Optimal Road Congestion Pricing for Both Traffic Efficiency and Safety under Demand Uncertainty

The impacts of road congestion charges on traffic safety are often overlooked in evaluating the benefits of congestion charging practices and searching for traffic safety strategies. This paper aims to examine how congestion pricing affects both efficiency and automobile safety. The first part of the study proposes and formulates the general traffic accident minimization pricing (TAMP) problem. Considering within-day and day-to-day travel demand fluctuations, a multiobjective bilevel optimization model under stochastic travel demand is developed based on the TAMP problem. This model is employed to determine the optimal toll levels that minimize both the negative externalities of congestion and accidents. Numerical results indicate that the traditional efficiency-oriented congestion pricing scheme, which does not consider impacts to safety, is often implemented in a less beneficial manner with regard to accident reduction.

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&

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Between ‘Shan Shui’, the Analysis of Settlement’s Pattern through the Landscape Drawing

Introduction: Drawing for the landscape is a traditional visualized representation which reflects the way human perceives the landscape, nature and urban environment. One typical representation of landscape is Chinese ‘Shan Shui’ painting which reflects the philosophical interest in nature. Great discussions and comparisons between ‘Shan Shui’ and the western picturesque have been made recently by scholars in cross-disciplines. The common point is that they all focus on representing the landscape, especially mountain, river and some pavilion or settlement between them. Some information is visualized while some is narrated. From aesthetic gardens, kinesthetic garden to space-time continuum, a variety of interpretation involving body, movements and urban contexts try to describe and understand a dynamic landscape through the static drawings. However, with a distance some landscape drawing can also be read as somehow half-aerial view perspective, which offer much more possibilities to understand the landscape and urban environment from historical perspective.

Research Questions: What does ‘Shan Shui’ graphic representation reveal in the context of bottom-to-top rural settlements? Can the landscape drawings work as an assistive tool of mapping in the urban morphological study?

Expected Outcomes:

- 1) Compare the western landscape painting and Chinese ‘Shan Shui’ painting, and study the philosophy which directs the drawings into different representation of urban landscape.
- 2) How the configuration and perspective, as techniques of drawing, manifest the point of sight towards the landscape in the process of creation? How distance and elevation be shown by the paintings?
- 3) What do the visual resources reveal in the dealt with geographic terrain? How do we select the site of settlements in a natural environment between mountain and river?

Case study: Bouyei minority’s settlement is a type of traditional rural village located in Pingtang, Guizhou Province, Southwest China. With

mountains around, the settlements are scattered near rivers in some physical rules shaping by the landscape. The urban setting, however, in turn shapes the landscape as well as a whole. In the scope of this paper the settlement's pattern and structure, and its relationship with the landscape will be analyzed by using landscape drawing and mapping.

Antonio Zumelzu

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Nodality as a Dimension of Sustainable Urban Form: An Evaluation to Five Neighbourhoods in Southern Chile

The transformation of Chilean cities has followed the similar morphological pattern change as observed in European and North American cities. From individuals to communities, social relations have been in a decreasing observed manner following the individualistic single-family housing model. Consequently, this way of living has reflected its features on the morphological function of the city, forming new residential structures, changing the city scale and hence provoking numerous environmental debates on sustainability. In recognition of city patterns at different scales, neighbourhoods are identified as the basic sustainable unit of the city, in which socio-urbanistic concepts are rather tangible. By looking critically at the unfolding of urbanisation process and the change of social relations, neighbourhoods are under threat to lose their vitality and identity. This research aims to evaluate Nodality as a dimension of sustainable urban form. Nodality promotes the sustainability of the urban form through providing public spaces where all the shops, local services and social interaction occur. Five neighbourhoods in the city of Valdivia, in Southern Chile, are evaluated in this research. The objective is to explore the vitality of the social environment in neighbourhoods and the influence on the components of its urban forms. The method Morpho is used to explore the morphological conditions that influence the human activity. The static snapshot and gate methods from Space Syntax theory are used to analyse the intensity spatial occupation and human activities on public spaces, to explore how different spatial elements are influencing in the generation of levels and spatial hierarchies. The results show that certain neighbourhood nodes have greater degree of adaptability in their morphology to generate diversity of uses, which in turn promote greater sustainability of the urban form. The article concludes with respect to future challenges to promote the development of more sustainable urban forms in Latin American cities.