

Mobility, Translocalisation and Transduction: The Resilience of New Urban Commons in the Era of Advanced Technospheres

Manfredo Manfredini*

Abstract

We submit that the translocalisation and digitally augmented networking of contemporary urban communities have created a form of associative engagement that is highly resilient, transformative and metastable. To validate this hypothesis, we discuss one empirical study on Instagram's data in Auckland, New Zealand. Findings validate the hypothesis. Conclusions claim that a reframing of the question of the commons is necessary for spatial disciplines to contribute to the affirmation of a universal *right to the city*.

Parole chiave: Mobilita' Urbana, Urban Commons; Spazio Pubblico; Resilienza; Translocalismo.

Keywords: Urban Mobility; Urban Commons, Public Space; Resilience; Translocalism.

1. Introduction

The world will be urban, and this comes with manifold potentials and challenges for the sustainable development of cities. The paramount significance of urbanism for global resilience and the interdependence of all stakeholders is unanimously recognised and formally acknowledged by the United Nations' *New Urban Agenda* (NUA) (2017). Public space is central to the NUA since the way its provision has been implemented includes criticalities that hinder its crucial role in supporting the social, cultural, and psychophysical well-being of city inhabitants. Particularly critical instances are semi-public spaces, such as the central social places located within urban enclosures of consumption, which epitomise the progressive urban fragmentation that produce conditions of socio-spatial segmentation, displacement, segregation, and exclusion. Semi-public spaces hinder the exercise of the "right to the city" since they exacerbate the rigid structural inequality in society that marginalises the weakest from the conception, production, association, use, and enjoyment of the rest of the collective space and urban commons (Harvey, 2010, 2012; Lefebvre, 1996; Purcell, 2002). These criticalities of the transformation of public space are enhanced by the emerging forms

in which publicness is spatialised: the digital augmentation of the public sphere profoundly changed the relationships between places, community relationality and civic engagement. Disciplines specific to spatial conception, such as architecture and urban planning, have increasingly struggled in engaging with these transformations of the core spatialities of public relational life. Urbanists, designers, and place-makers need to rethink the theoretical framework as well as the conventional processes, methods, and practices for analysis, planning, and delivery of visions, strategies, and tactics.

We propose the refoundation of the discourse on public spaces, combining theoretical and empirical investigation, through the recognition that the increasing conflictual condition of publicness, underpinned by the transductive reality-virtuality continuum, has an ambivalent agency on the (alienating/emancipatory) performances of public space in social, cultural, politic and economic life of both local and translocal communities that rely on it (Manfredini, 2017, 2018; Milgram et al., 1994; Mitchell, 2003). Questioning the value of the traditional public/private dualism, we propose an approach that acknowledge the coextension of the private and the public realms and formulates a methodology to analyse it.

We maintain that the emerging condition leads to the formation of a new kind of space: the *metapublic space*, the epitome of the latest modern metamorphosis of the semi-public space of the consumerist enclosures. Metapublic space is a thoroughly economised public space with superior civic centrality, referential association and ligibility, and a powerful digital infosphere. It has a dual alienating/emancipatory agency. On one hand it increases the alienation and consumerist intensity of the modern shopping mall by implementing attractive eventful, hedonic atmospheres that whilst bringing to a new level their spectacular hyperreality (Deleuze, 1990; Jameson, 1991), guarantee total usage programmability and behaviour control. On the other, it supports the growth of a powerful emancipatory counterspace: one where processes of collective reappropriation of space creates a new type of inclusionary commons.

The commons of the new type are instituted through processes characterised by three main features: *itineration*, *metastability*, *spatial transductivity*. Itineration is related to the capacity of the commons to migrate, being materialised in instances that are use different physical infrastructure. Metastability is referred to the transient and metamorphic nature of commons that alternate presence to material latency. Spatial transductivity is referred to the capacity of the commons to virtually move across space using technological devices that enable to have an immersive experience that transform actual space. These features are distinctive of the relationality

emerged in the aftermath of the “digital turn.” Their occurrence is a function of digital pervasion, which has its apex in preeminent social places with advanced *technospheres* where the digital realm can fully deploy the power of its embodiments through the combination of virtual, augmented, and mixed-reality applications (VAM).

The activation of the new commons has a decisive counterspatial agency that scales up complexity and differentiation in spatial production processes, strongly intensifying the autonomy of people in the engagement with their own social and spatial contexts. The established mechanisms activate the political agency of places towards the reappropriation of disembedded territories, such as the semi-public spaces. Individual and communities are empowered in countering the dominant forces that tend to increase the sectarian polarisations of existing inequalities.

Studies of key characteristics of the new metapublic spaces outlined such a paradoxical condition also in New Zealand urban centres, showing how their spatial disjunction from the rest of the city is countered by their ubiquitously accessible digital hyper-connectivity (Manfredini, 2018; Manfredini, Tian, Jenner, & Besgen, 2017). This reflects two key phenomena relevant to the NUA implementation: 1) the shift from a financialised collaborative consumption (Ritzer, 2015; Ritzer & Jurgenson, 2010) to an even, free, and equal participatory differential production (Harvey, 1996; Lefebvre, 1991); and, 2) the progressive effect of digitally augmented transduction onto the social life of translocal communities in their steady deterritorialising and reterritorialising processes (Brighenti & Kärrholm, 2019).

2. Semi-public space and the new commons of the advanced digital age

Social cohesion a primary factor for the development of sustainable and resilient cities as they face the fast and radical anthropological changes generated by digital technology. This paper analyses the socio-spatial implications of the transformation of relationality networks, focusing on the forces behind latent struggles in contested central urban spaces of rapidly developing contemporary cities. Specifically, it addresses the transformation of inclusionary urban commons, discussing the problems impacting on the development of both physical and functional redundancy of the associative spatialisation patterns of post-consumerist urban communities, and showing the factors that increase the vulnerability of urban commons subject to displacement and financialisation of their infrastructures. Firstly, it formulates a theoretical framework to analyse how hegemonic economic powers have amplified crucial urban problems, such as socio-spatial fragmentation, polarisation, and inequality. Secondly, it discusses criticalities and opportunities

emerging from the conflicts between the forces that control and expand the digitally augmented networkability of key assets in urban commons. Thirdly, it discusses the results of the analysis on semi-public geographies, focusing on their capacity to reintroduce practices of participation and commoning that reassemble fragmented relational infrastructures, translocally combining social, cultural, and material elements.

The theoretical framework follows a comparative critical urbanism approach inspired by *the right to the city* and the *right to difference* (Harvey, 2012; Lefebvre, 1991, 1996, 2003; Purcell, 2002, 2003). It elaborates on the discourse on sustainable development that informs the NUA, addressing specific socio-spatial relational practices that counteract the dissipation of the “common worlds” caused by sustained processes of urban gentrification and homogenisation. It uses critical instruments that analyse how the subsumption of urban space conception into closed circles of expert managers led to citizens’ dispossession (Hodkinson, 2012).

These instruments enable to detect how the new urban commons, and specifically in the one located within semi-public spaces, produce novel spatialisation patterns have the potential to make the commons “bounce forward” after the crisis caused by the withdrawal of direct state involvement. They show how the emerging commons are metastable institutions, enacted by digitally augmented and mobile embodiments, which include powerful forces for their emancipation from dominating external hegemonic forces. The Lefebvrian lens reveals how their capacity to turn the setbacks into setups for success is linked to their ability to decouple their actants, separating those that constitute productive presence (no matter whether materially actual or virtual) and the ones that are present for control and domination purposes (mainly elements imposed with material occurrence). This capacity is then linked to three fundamental incipient processes: *pervasive translocalisation* (i.e., the shift towards territorialisation patterns that dissipate the traditional bounds of social networks to continuous, discrete and fixed geographical territories), *recombinant transduction* (i.e., operations implying the digitally advanced coming together of heterogeneous forces that augment the “metastable state” of a space), and *publicness hybridisation* (i.e., the creation of ambivalent conditions of territorial control). These processes and their relationality agency contribute to the production of more efficacious, robust, supple, and redundant chains of associations. However, their subjection to a critical trade-off is identified: since the new resilient commons depend on augmented transduction, they thrive in the most relationally active and equipped technospheres of the semi-public space of consumption enclosures – places that offer their infrastructures at no apparent direct cost, whilst imposing a loss of independence.

To understand the implications of this trade-off it and disentangle the changes in power relations at play in these places, this study provides evidence of the production of advanced simulative and transductive counterspatialities that reconstitute inclusive and participatory systems of relationality in a representative place of enhanced consumption in Auckland, New Zealand.

3. Digital space analysis of the new translocal and transductive commons

Acknowledging the increased relevance of the digital public sphere in urban processes, our study uses visual-locative media to detect and analyse the emerging relational counterspatialities. To collect and process substantive amounts of user-generated and location-specific content data regarding both historical and real-time information (Kuznetsov & Paulos, 2010) a dedicated set of methods, and tools has been developed. Multivariate data sourced from visual-locative services provide a large quantity of material on interactions, relations and place-based representation of people and communities in relevant chronological series (Boy & Uitermark, 2017). We used Instagram, the globally most popular service of its kind, since it has a rich socio-spatial relationality content, is pre-eminently visual, affords scalable interaction, operates in near-ubiquitous and time-continuous ways, and, importantly, is open, participatory, highly accessible, and does fairly represent all digitally active social groups.

Methods adopted in our analysis of Instagram data are based on international state-of-the-art research (Borgatti, Everett, & Johnson, 2018), yet required substantial refinement and adaptation to match the research project's goals specific to the New Zealand context. Data collection was developed to cope with recent API access restrictions and a proprietary scraping software used. Data processing has combined conventional and experimental methods to detect both quantitative (e.g., spatial distribution and strength of interaction) and qualitative (e.g., interest areas, places' memorability) elements. Visualisation has employed traditional processing to produce graphs and maps (e.g., in- and out-degree distribution graphs and heatmaps; Boy & Uitermark, 2017) that have been complemented by procedures specific to multivariate datasets (e.g., to produce *pixel-based* scatterplots, projection methods, such as multidimensional scaling, and *axis-based* coordinate plots; Kerren, Purchase, & Ward, 2014). Our analytical phases (data mining, processing, and visualisation) focused on two integrated areas: 1) network analysis, concerning social network composition and dynamics; and 2) semantic analysis, regarding textual discursive component characteristics. The network analysis investigated the relationship between individuals and their contribution to the rest of the network by identifying connectivity, their

influence (centrality), and the groups that are formed (community). The semantic analysis concerned the topics of interest and the dynamics of interest-based networks.

The multivariate exploration and visualisation methods were designed for the analysis and presentation of data concerning how social groups with distinct relational and dynamic characteristics respond to different urban spaces. They included various tools to find network outliers, patterns, and trends, and enable us to detect and comparatively analyse network clusters with variable size and density. Such tools detect distribution patterns and their dynamics, by tracking IDs, followers, posts, comments, replies, and likes, and constitute and compare denser network clusters, providing multiple visualisation options. In order to describe complex interactions on entire social networks, they focus on topology (Smith, Rainie, Shneiderman, & Himelboim, 2014) and identify and partition them in either exclusive groups or hierarchical clusters. The level of coherence and aggregative strength of communities are also detected and comparatively analysed (Fung, 200; Soler, Tencé, Gaubert, & Buche, 2013). Various indices have been developed to study communities' centrality (i.e., group/cluster polarisation), segmentation (i.e., parochial structure), similarity (i.e., pattern consistency), interactivity (i.e., exchange frequency; Boy & Uitermark, 2016) and interdependence (i.e., reciprocal support between separate networks; Kenett, Perc, & Boccaletti, 2015).

Network analysis was also combined with semantic content analysis to understand how people communicate on the same social media platform and create parochial environments to share their interests and approaches (De Nooy, Mrvar, & Batagelj, 2018), whilst having fundamental differences such as language, attitude, or beliefs (McPherson, Miller, Smith-Lovin, & Cook, 2001; Neuendorf, 2002). This part of the research enabled us to classify communities in sociological types (e.g., *lifestyle vanguard* and *cultural entrepreneur*; Boy & Uitermark, 2016). Furthermore, we adopted semantic analysis to understand psychological and behavioural factors reflected in textual elements which people use in their everyday lives (Schwartz & Ungar, 2015). Our methods for semantic analysis were designed to detect discourse complexity, interest area, and affinity (Manikonda, Hu, & Kambhampati, 2014), as well as differences between social groups based on age, gender, and ethnicity (Manikonda et al., 2014). Content components were categorised in general trending topics (e.g., arts/photo/design; Shahzad et al., 2017) using automation to process large datasets. Experimental analysis methods, such as the crowd-calibrated geo-sentiment analysis, have been developed to utilise time intervals and location tags to retrieve and process data for the detection of clusters of positive, neutral, and negative opinions.

Our analysis of digital commons used as a case study Sylvia Park, one of the 10 metropolitan centres of Auckland. Data were sourced from the main Instagram POIs (points of interest) of the mall that dominates the centre. Instagram is the most popular visual-locative service in New Zealand, with users exceeding 35% of the total population in 2018. Data of the entire 2017 calendar year were collected. A database with posts' metadata (ID, URL, time, etc.) and content (images, comments, likes, etc.) was formed. A data cleaning was performed to remove duplications, commercial, and improper items. Relationships between the different forms of interaction were detected by dissecting the network into parts that identify the number of people using multiple types of communication, the preferred type of communication, and the proportion of people using each kind of interaction. The typological analysis of the network used Himelboim classification (Himelboim et al., 2017). The assessment used centrality, modularity, and fraction of isolates indexes, which included the identification of the quantitative distribution of users in communities and the classification of the latter in three balanced size brackets: small, medium and large. The network analysis also comprehended the evaluation of dynamics of the overall activity to unveil how well a place is performing over time and reveal cyclic patterns.

Findings of the network analysis showed a large number of active users, in excess of 120k, and interactions, over 150k. Most of the users (almost 90%) were linked to others and constituted stable communities (the minimum size of communities was set at 15 members). Over the year, the network reached a total of 236 communities, which tended to consolidate in larger aggregations (51k people in large communities, 50k in medium, and 21k in small). Communities resulted as a hybrid combination of Himelboim's three types: the *polarised*, with large interconnected groups (the network includes five main community clusters); the *fragmented*, with multiple disconnected brand clusters (the network comprehends a large number of them in the medium-size bracket); and the *broadcast*, where one or more celebrities have dominant centrality (e.g., four communities are each polarised around single international personalities in sport, spectacle, and fashion). This reflects the multiform composition of Sylvia Park's translocal communities. The dynamic analysis found a general and sustained trend of growth over the year. Monthly figures showed posts increased by 12%, comments by 136% and likes by 152%, with peaks of interaction in school/university holiday periods (a primary at the end of the year and a secondary between June and July). Community variations showed a steady consolidation trend considerably higher in large communities, with mergers that saw most people remaining in the expanded communities.

Findings of our semantic analysis on people's language showed expressions in English greatly outnumbered the ones in any other language, yet including a noteworthy presence of Māori ones. Findings on topics of interest revealed the presence of ten macro-categories. These categories had a highly variable ratio of occurrences, with the highest ones being food and drink (23.5%), people and society (15.4%), places and architecture (13.5%), events and entertainment (12.6%), and fashion and style (12.4%). The relevance of place reference emerged for the central role that its proxy, *places and architecture* references, occupied in some communities, and for its high discursive association with socialising nourishment practices embedded in references to food.

Overall, a well-performing and cohesive system of networks has been found. Its large number of interactions was evenly distributed in all its components (likes, comments, and posts); formed strong connections between different community sizes; had few disconnected, isolated, and small communities; showed a unified and low hierarchical structure made up of multiple lineages; and continued growing at a fast rate. Importantly, the semantic analysis of interaction in large-scale communities detected in the network analysis revealed that, notwithstanding the influence on each community interest exercised by major events or influential persons, the relevance of place for relational life remains substantially stable throughout the year.

4. Conclusion

This paper has analysed the contemporary commons and detected an emerging type of commons described as an institution with mobile, metastable, and metapublic spatialisation patterns generated by digitally augmented processes. This new type is credited with the potential to produce efficacious, robust, supple, and redundant chains of association that countervail the colonising power of external hegemonic forces and prompt the overall commons to "bounce forward" after their crisis driven by the withdrawal of direct state involvement. The effectivity of these novel spatialisation patterns is attributed to their capacity to decouple their actants, separating productive, autonomous, and non-mediated presences from constraining, dominating, and externally controlled presents. This decoupling is associated with three major processes: *pervasive translocalisation*, *recombinant transduction*, and *publicness hybridisation*. These processes are described as game changers in a community's relational life and identified as the origin of the subjection of the new commons to a crucial trade-off: the concession of relevant degrees of independence and self-determination against the usage of necessary infrastructure for the materialisation of the ultimate embodiments of the commons. The trade-off involves the antagonist use of semi-public realms of the advanced consumption enclosures that offer, at no

direct cost, access to prime translocal and transductive urban technospheres with outpacing centrality, relational hyper-activation, and state-of-the-art technological equipment.

This inquiry, built upon the critical tradition of the right to the city, shapes theoretical instruments to disentangle the changes in power relations that underlie the struggle of the new antagonist commoning force for the collective appropriation of historical relationality of people, cultures, and territories in all practices of everyday life. The way the new commons grow their counterspaces at the core of the places that are responsible for the highest decay of their social agency and progressive segmentation and commodification is unpacked and described. Accordingly, empirical validation of the potential counterdiscursive agency of the new commons is offered through the discussion of the findings of recent comparative urbanism research on representative Asian and Australasian cases.

The positive answer that the growth of counterhegemonic forces found in this study both theoretically and empirically gives to the research question comes with a warning: the multidimensional vulnerability of the new commons is a major challenge to the stabilisation and further development of the emerging nondominative modes of relational and associative life. The question of the crisis of the commons and their resilience concept requires an urgent and thorough reframing that addresses the problems emerging in the very impermanent, eventual translocal, transductive, and semi-public new commons. This should take into account the irreconcilable nature and interests of the antagonistic forces supporting the commons, not to mention here their engagement with the “demand” of desire (Manfredini, 2018). This will also lead to a review of the instruments and methods of analysis and intervention necessary to the disciplines of architecture and urbanism to effectively contribute to the development of socio-spatial conditions, where individuals are granted the right to difference and their associations control their own production processes and protocols in the pursuit of a collaborative space of freedom and autonomy.

Bibliography

- Borgatti, S. P., Everett, M. G., & Johnson, J. C. (2018). *Analyzing social networks* (2nd ed.). London: Sage.
- Boy, J. D., & Uitermark, J. (2016). How to study the city on Instagram. *PLoS One*, *11*(6), e0158161.
- Boy, J. D., & Uitermark, J. (2017). Reassembling the city through Instagram. *Transactions of the Institute of British Geographers*, *42*, 612–624.
- De Nooy, W., Mrvar, A., & Batagelj, V. (2018). *Exploratory social network analysis with Pajek*. Cambridge: Cambridge University Press.
- Fung, G. (2001). A comprehensive overview of basic clustering algorithms. *CiteSeerX*, 1–47.
- Harvey, D. (1996). *Justice, nature and the geography of difference*. Oxford: Blackwell.
- Harvey, D. (2010). *Social justice and the city* (Rev. ed., Vol. 1). Athens: University of Georgia Press.
- Harvey, D. (2012). *Rebel cities: From the right to the city to the urban revolution*. Brooklyn, NY: Verso.
- Himmelboim, I., Smith, M. A., Rainie, L., Shneiderman, B., & Espina, C. (2017). Classifying Twitter topic-networks

- using social network analysis. *Social Media + Society*, 3(1), 1–13.
- Hodkinson, S. (2012). The new urban enclosures. *City*, 16, 500–518.
- Kenett, D. Y., Perc, M., & Boccaletti, S. (2015). Networks of networks: An introduction. *Chaos, Solitons & Fractals*, 80, 1–6.
- Kerren, A., Purchase, H. C. & Ward, M. O. (2014). Introduction to multivariate network visualization. In A. Kerren, H. C. Purchase, & M. O. Ward (Eds.), *Lecture notes in computer science, vol 8380* (pp. 1–9). Cham: Springer.
- Kuznetsov, S., & Paulos, E. (2010). Participatory sensing in public spaces: Activating urban surfaces with sensor probes. In *Proceedings of the 8th ACM Conference on Designing Interactive Systems*, Aarhus: 21–30.
- Jameson, F. (1991). *Postmodernism, or, the cultural logic of late capitalism*. Durham: Duke University Press.
- Lefebvre, H. (1991). *The production of space*. Oxford: Blackwell.
- Lefebvre, H. (1996). *Writings on cities*. Cambridge: Blackwell.
- Lefebvre, Henri (2003). *The urban revolution*. Minneapolis: University of Minnesota Press.
- Manfredini, M. (2017). The augmented meta-public space: Interpreting emerging transductive territories in enhanced centres of consumption. *The Journal of Public Space*, 2(3), 111–128.
- Manfredini, M. (2018). Rethinking urban commons in the age of augmented transductive territorial production. Proceedings of the *11 International Forum on Urbanism Congress, IFoU*, Barcelona.
- Manfredini, M., Tian, X., Jenner, R., & Besgen, A. (2017). “Transductive Urbanism.” A method for the analysis of the relational infrastructure of malled metropolitan centres in Auckland, New Zealand. *Athens Journal of Architecture*, 3, 411–440.
- Manikonda, L., Hu, Y., & Kambhampati S. (2014). Analyzing user activities, demographics, social network structure and user-generated content on Instagram. *CoRR abs/1410.8099*, 1–5.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415–444.
- Milgram, p., Takemura, H., Utsumi, A., & Kishino, F. (1994). Augmented reality: a class of displays on the reality–virtuality continuum. Proceedings the SPIE: Telemanipulator and Telepresence Technologies, 2351, 282-292.
- Neuendorf, K. (2002). *The content analysis guidebook*. Thousand Oaks: Sage.
- Purcell, M. (2002). Excavating Lefebvre: The right to the city and its urban politics of the inhabitant. *GeoJournal*, 58, 99–108.
- Purcell, M. (2003). Citizenship and the right to the global city: Reimagining the capitalist world order. *International Journal of Urban and Regional Research*, 27, 564–590
- Ritzer, G. (2015). Prosumer capitalism. *The Sociological Quarterly*, 56, 413–445.
- Ritzer, G., & Jurgenson, N. (2010). Production, consumption, prosumption: The nature of capitalism in the age of the digital ‘prosumer.’ *Journal of Consumer Culture*, 10(1), 13–36.
- Shahzad, B., Lali, M. I., Nawaz, M. S., Aslam, W., Mustafa, R., & Mashkoo, A. (2017). Discovery and classification of user interests on social media. *Information Discovery and Delivery*, 45(3), 130–138.
- Schwartz, H. A., & Ungar, L. H. (2015). Data-driven content analysis of social media: A systematic overview of automated methods. *The Annals of the American Academy of Political and Social Science*, 659(1), 78–94.
- Smith, M. A., Rainie, L., Shneiderman, B., & Himelboim, I. (2014). *Mapping Twitter topic networks: From polarized crowds to community clusters*. Washington DC: Pew Research Center, 20, 1–56.
- Soler, J., Tencé, F., Gaubert, L., & Buche, C. (2013). *Data clustering and similarity*. Paper presented at FLAIRS Conference, St. Pete Beach.
- UN-Habitat (2017). *The New Urban Agenda*.

Acknowledgment

This research is funded through the New Zealand’s Ministry of Business, Innovation and Employment of programme *Building Better Homes, Towns and Cities, National Science Challenge* contestable fund - *Give Us Space project*.

* Honorary Professor, Hunan University, Changsha, China; Director, Senior Lecturer, Auckland University, Auckland, New Zealand