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A FOCUS ON PEDAGOGY



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TRACING THE INTENSIVE: ON ASSEMBLAGES, TECHNICITIES AND URBAN PEDAGOGIES

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INTRODUCTION

Nowadays, emerging technologies continuously shift our understanding of human evolution as well as influence the understanding of architecture and the urban environment. With the heated discussion on terms such as the metaverse, emerging socio-technological attractors that incorporate state-of-the-art research in diverse trajectories gather the attention of scholars and experts in different fields such as artificial intelligence, blockchain and machine vision. Topics like these bring the discussion of digital, data-driven techniques in tension with conventional design practices. In architectural and urban design, the development of digital technologies enables a great variety of technical methods facilitating the extraction of certain aspects of urban life through qualitative and quantitative analyses and simulations. Such technologies, for example mapping, filmmaking, geographic information system (GIS), parametric modelling or VR/AR technology, are increasingly included in architectural and urban education.¹ However, the rapid growth of such technologies has also been questioned on whether it could enhance the very understanding of urban conditions or evoke our critical thinking about the dynamic, transient, and intensive encounters in the everyday activities of urban life.²

In this sense, this article aims to examine the relationship between technologies and urban life by embracing assemblage theory as derived from philosophers Gilles Deleuze and Felix Guattari.³ From a cultural-technological perspective, it then highlights the significance of experience and sensibility in understanding urban life as an assemblage. Moreover, this article further gives some insight into the role of urban pedagogies in facing the complexity of urban issues in the cosmopolitan context. Echoing the previous discussion on technologies, it attempts to examine the potentiality of engaging transdisciplinary knowledge in architectural and urban education. Finally, it goes back to the broader concerns by raising an open-ended question: how digital literacy could produce a form of urban literacy, and how does lack of knowledge of the entanglements between architecture and digital technologies leads eventually to an impediment of understanding how urban life is influenced by both.

ASSEMBLAGE THEORY, TECHNICITIES AND COSMOPOLITAN URBANISM

Assemblage theory has increasingly been used in social sciences research due to its capacity to address indeterminacy, emergence, becoming and complex relationship in and among systems.⁴ The concept of the assemblage was first introduced by philosophers Gilles Deleuze and Felix Guattari as the term *agencement* which refers simultaneously to the action of parts coming together and to the resulting ensemble.⁵ An assemblage, in a general sense, is a whole “whose properties emerge from the

interactions between parts”.⁶ In other words, the “whole” and the “parts” are inseparable and irreducible. Different from a simplified understanding of unity, which defines the relations between the parts and the whole in advance of their emergence, assemblage theory allows the possible emergence, synthesis and emancipation of parts in a process of constant multiplicity. Assemblage thinking, thus, offers a new perspective to focus more on the system as embedded in time, in a dynamic and continuous intensive transformation amongst parts and eventually the incremental becoming of the whole.⁷ As opposed to traditional system theories, assemblage theory has four main differentiating characteristics according to Manuel DeLanda’s extensive interpretation in which the following examination is largely based.⁸

First and foremost, assemblage theory positions against reductionism and the totalizing point of view. While acknowledging the emergence of an assemblage from the interactions between the parts, one also needs to recognize the affordances and constraints acting on the parts from the formed assemblage. In this case, assemblage theory overcomes the simple top-down and bottom-up binary in the examination of a system. Speaking of the urban system, assemblage theory refuses to reduce a city directly and solely to the buildings, infrastructures or communities but allows us to think of these parts in a co-functioning way. In this sense, it challenges existing digital representations trends that extract functions of buildings as points of interest or reduce multiplicities of cities into mixed spatial distributions and simple spatial correlations.⁹ It would also hardly be enough to focus on the complex interactions only *within* an assemblage. Rather, it would be better to see how the formed assemblages act *inwards* on the emergence and decline of such complex interactions.¹⁰

The second characteristic of assemblages is their historically-produced contingency. In other words, assemblages are not fixed nor given in advance. An assemblage is an individual entity that is formed by the parts while maintaining the parts in sustaining their coming together. As such, there is no pre-established hierarchy of assemblages but the actual and potential relations transforming between systems. Focusing on the urban system, within such assemblage, the actual and potential relations between humans and non-humans are constantly transforming. Particularly, everyday urban life, in this sense, would no longer be treated as a fixed setting or the mundane and the repetition of the same. Using Deleuze’s terms, it would contain flows of intensities with surging capacities and potentials for emergence between the actual and potential urban relations.¹¹ Such intensities flow immanently, contributing to a transformative process and furthering the becoming of urban life. Therefore, it is a realm of intensities, lying between the actual and the virtual status of urban beings, requiring therefore more attention in the study of urban life.

Intensity or intensive quality refers to the strength level of pure force or energy; as such, it is related to what Deleuze see as productive differences.¹² Such differences are not the external differences between things but the difference within one and the same system, for instance, differences in temperature, pressure, etc.¹³ A pertinent example to describe how intensity works is the state of water under different temperatures. The thresholds of intensity determine the phase of transitions of water between solid, liquid and steam.¹⁴ The transition between different phases is the continuous and incremental experience from the virtual (real but yet to come) to the actual (real and already here). The intensity flowing between the transcendental principle of difference and repetition is thus the condition of emergence of anything new.¹⁵ In a more spatio-temporal sense, Deleuze refers to the “larval subject” that is a subject “with no fixed identity”¹⁶ it experiences the intensive foldings, migrations and transformations and contains huge potentials to co-evolve together with its environment and to “turn into a fully formed organism”.¹⁷

Here, focusing on urban life, there are two insights from the concept of “larval subject” in the design of urban spaces. Thinking of urban design, the “larval subject” can link to the discussion of the determination in shaping architectural and urban spaces. An underdetermined design can largely afford

a greater range of actions in spaces and enable the multiplicity of architectural and urban experiences, whereas an overdetermined space tends to be one-way with limited experiential diversity and thus constraining the emergence of synergies in spaces.¹⁸ In terms of the design method, a good example of the “larval” could be Koolhaas’s Downtown Athletic Club.¹⁹ According to the architectural historian Hans van Dijk, instead of using the Club’s section as a corrective intervention, or say, ordinary and reductive use of a diagram, Koolhaas uses the section as a deliberate design device to engender the emergence of the susceptible and the unforeseen.²⁰ These two insights, one from the theoretical and one from the methodological, also link to the integration of technologies in architectural and urban design, which will be discussed later together with the third and fourth point.

The third and fourth characteristics of assemblage can be discussed together to address the current issues within the context of cosmopolitan urbanism. Cosmopolitanism, simply put, is “the attitude toward difference and thus the possession of a set of skills that allow individuals to negotiate and understand cultural differences”.²¹ As the difference and interactions are the central components of cosmopolitanism, it is natural to connect it to assemblage theory to gain a better understanding of cosmopolitan urbanism.

The third characteristic of assemblages challenges the conventional sense of scale, indicating that an assemblage can become part of or contain other assemblages. As such, assemblage theory offers a truly relational understanding across multiple scales with a focus on the complex and dynamic interactions between different systems.²² In this sense, the individual would no longer be the undifferentiated entity in an already-given cosmopolitan urban system. Rather, as Gatsby’s own social transformation is nested and reflects the socio-cultural transformation of American cosmopolitanism in the 1920s, the becoming of the individual as a “micro” system is associated with the becoming of a “macro” cosmopolitan system through complex and dynamic interactions.²³ Taking a step further, Guattari uses *ecosophy* to describe such transversal relations between the three ecological registers of environment, social relations and human subjectivity.²⁴ His discourse highlights the intertwinement between the mental development of how people imagine the world, the social development of how people practice as groups, and the environmental changes shaped by technological development.²⁵ Within the cosmopolitan context, such intertwinement of the three ecologies indicates that in order to gain a deeper understanding of cosmopolitics, one must *think* and *feel* with the triple dimensions, the psychic, the social, and the environmental together embedded in their everyday experience.²⁶

The last point is that assemblages are formed and composed by heterogeneous parts. Hence, the examination of the urban system as an assemblage ought to excavate the co-functioning of different natures as a symbiosis that forms the assemblage, rather than applying or reducing the multiplicity into a one-rule-fits-all approach.²⁷ In this case, assemblage theory requires the inclusion, yet with critical consideration, of a wide range of materials that might matter for how we understand the city, including architecture and infrastructure, new and old technologies, software codes, or even literature, movies and so on.²⁸ Consequently, it becomes the locus of a truly transdisciplinary effort.

Especially in the digital age, the awareness of introducing transdisciplinary knowledge in urban studies is prevalently associated with digital technologies.²⁹ However, the so-called transdisciplinary engagement with technologies tends to treat technologies as the “end product”.³⁰ In fact, technology should not be merely the deliverable or result; it is the co-evolving relations between technology and humans. Here one may refer to philosopher Gilbert Simondon and his concept of *technicity*.³¹ According to philosopher Gilbert Simondon, technicity deals with how humans relate to and transform their environment through technology and how these relations transform all of them in their own – humans, technology and environment.³² In other words, the evolution of technical objects tends to be a process of exteriorization of human biological functions, simulated and constrained by shifting environmental conditions, and itself constitutive of the psycho-social domain where norms and beliefs come to reinvest

these biological functions with cultural meaning. In this sense, the socio-political issues in cosmopolitan urbanism are also cultural-technological issues. As philosopher of technology Yuk Hui, argues, one can only understand cosmopolitics by understanding cosmotechnics.³³ Thus, the engagement of digital technologies as transdisciplinary knowledge in cosmopolitanism should aim at enhancing the sense-making in the experience of cultural-technological development.

FOCUS ON URBAN PEDAGOGIES

Turning to urban pedagogies, the discussion may start with the etymology of “education”. Education derives from the Latin *educere*, to lead out. Education, therefore, is leading out of what is already established in the learner. According to cultural theorist Claire Colebrook, education is “not the imposition of some already given truth but the formation of those selves who must grasp the truth.”³⁴ To her, instead of being a “pouring in” or simple conveyance of information, education or learning, is an exercise in the self-formation of “souls” or say micro-perceptions that are potentials for creating relations, response and perceptions.³⁵ Such self-formation starts from experience, moves beyond and turns into the recognition and intuition of one’s own condition for experience. One can hardly learn to swim by replicating the movements of the swimming coach or feeling the waves in the same way as the coach responds; one must respond to the new waves and form the image through the experience and constant encounter with problems. In this sense, the role of education is to facilitate the cognition of experience and sense-making throughout the encounters with the world.

From the previous discussion on assemblage theory and urban life, one might find that experience plays a significant role in nearly every characteristic of assemblages and thus, stitches urban life together. First, the experience of the changing intensities of differences enables the transformation between the virtual and the actual. In urban design thinking, with a lower level of determination in the design of urban spaces, people can have a larger chance to not merely encounter and see but also *experience* the complexity and differences, and thus, stimulate people’s mental engagement in becoming a part of urban life. In design methodology, the experience also plays a crucial role in producing design concepts. Instead of reinforcing pre-assumptions, thinking and experiencing the changes and transformation while using a deliberate design device helps engender the emergence of the potentialities, which are usually unforeseen. Secondly, in responding to the issues of cosmopolitanism, the social and mental experience of humans is associated with cosmopolitan issues on a larger scale. One can only feel and think about cosmopolitan urban issues only when one can links such thinking and feeling to social and mental experiences. Lastly, in terms of the heterogeneity, the integration of transdisciplinary knowledge enables us to feel and experience the diversity and the emergence of discourses about the non/in/trans/meta/posthuman and facilitates the understanding of complex interactions and the blurry in-between status within urban life “in assemblages that flow across and displace the binaries”.³⁶

Speaking of architecture and urbanism, past architecture and urban education are often dominated by numerous ways to produce ideologies and concepts with the manipulation of different materials, geometries, and semiotic elements, but perhaps overlook the basic medium of the discipline that is the field of experience itself.³⁷ The existing use of emerging technologies, to some extent, seal the expansion and transformation of experience and consciousness given by the intrinsic biological sensory and cognitive.³⁸ As argued by Richard Sennett, prescriptive smart technologies tend to “dumb down the citizens”.³⁹ For education, the domination of simulation and visual qualities in “digital design” seems to undermine students’ experience and sensibility of encounters, urban characters, and sensual attributes, such as soundscapes, smellscapes, tactilesapes, etc.⁴⁰ The current engagement of emerging technologies barely changes fundamental conceptualisations or the types of tasks in which planners and designers usually deal with, but solely changes the format they present.⁴¹ Therefore, it is necessary to

review the role of actual experience and sensibility in urban life and bring urban education back to the “real world”.⁴²

In fact, sensibility is “ground zero”.⁴³ In Colebrook’s words: “Once we try to think the origin of all that is, the very ground of being, then we arrive properly not at the origin of sensibility, but sensibility as origin.”⁴⁴ Sensibility, thus, is a crucial part in cognition. It is more than a process that only operates inside the body but rather distributes widely through lived experience across both natural and technical environments.⁴⁵ In this sense, the “embodied mind” or the 4EA approach, namely “embodied, embedded, enactive, extended, affective”, embraces the systems of brain-body-world to understand cognition.⁴⁶ In addition, an embodied mind strongly resonates with assemblage theory and the three ecologies mentioned previously.⁴⁷ As such, it would be possible to adopt the 4EA approach to provide insight into a pedagogical sense in architecture and urban studies in order to bridge the gaps between urban structures, materials and cognition via lived experiences and sensibility from which those synthesized wholes of urban life emerge through artwork and education.⁴⁸

Additionally, such sensibility can be enhanced throughout a variety of experiential knowledge. It includes both the augmentation of the sense through technologies, for instance human enhancement, but also an augmentation of sense through the cultivation of aesthetic and philosophical intuition — the latter currently declining due to the dominating trend of the former.⁴⁹ Such trend derives from the boundaries of disciplinarity, which obstruct the effectiveness of transdisciplinary collaborations and ultimately end up with a blunting or loss of certain senses.⁵⁰ Hence, echoing the previous discussion, the engagement of transdisciplinary knowledge is not only to bring different disciplinary knowledge together but also to experience and use the knowledge from other disciplines to challenge the pre-assumptions and cultivate the sensibility on multiple sides. For instance, in the video *Autopoietic Veering: Schizo Socius of Tokyo and Vancouver (2021)*, the moving-image gives an opportunity to re-order the fragmentation of time, memory and space, and generate a new order from the combination of scales-shifting, overlays, sounds, speed, colours and relations.⁵¹ With such transdisciplinary technics, the sensibility is augmented. It becomes possible therefore to move beyond pre-assumptions and critically consider the use of materials and technologies. In a pedagogical sense, this film provides an appropriate instance to encourage the exploration of potentialities and, particularly within the context of the digital age, to gain a better understanding of technicities from a cultural-technological perspective.



Figure 1. Screenshot from the film *Autopoietic Veering: Schizo Socius of Tokyo and Vancouver (2021)*

CONCLUSION AND IMPLICATIONS

Very recently, Google released another new technology engaging machine learning in 3D mapping and modelling to provide high-end rendering and an immersive view for people to explore urban centres and buildings. Arguably, such technology will soon be introduced into architectural and urban education. However, before fully embracing the eye-catching technology, one might ask: would the technology encourage people's thinking of architecture and urban spaces? Would the rendered impressions assist people in exploring the heterogeneous potentials of urban life? To what extent do such fast-developed digital technologies contribute to the sensibility and the urban literacy derived from everyday life experiences?

Embracing assemblage theory, this article emphasizes the role of experience and sensibility in architecture and urban pedagogies. From a cultural-technological perspective, it highlights the following points as reflection. First, future urban pedagogies ought to see sensibility as ground zero in facilitating the formation of urban knowledge. To do so, the 4EA approach can be used to focus on the actual experience embedded in everyday urban life. Secondly, educators could facilitate the links between individual learners and encourage them to think and feel cosmopolitan urban issues within the diversity and heterogeneity of their interactions. For that, the critical inclusion of transdisciplinarity is necessary. Finally, and to achieve this, one needs to embrace a cultural-technological perspective that critically engages digital technologies and understands them as a constitutive and co-evolving progress of human individuation.

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- ⁹ Examples such as: Carlo Ratti et al., "Mobile Landscapes: Using Location Data from Cell Phones for Urban Analysis," *Environment and Planning B: Planning and Design* 33, no. 5 (2006), <https://doi.org/10.1068/b32047>.
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- ¹² See p.255 in Deleuze, *Difference and repetition*.
- ¹³ See p.222 in Deleuze, *Difference and repetition*.
- ¹⁴ Manuel DeLanda, *Intensive science and virtual philosophy*, Transversals, (London ; New York: Continuum, 2002)
- ¹⁵ See pp.240-241 in Deleuze, *Difference and repetition*.
- ¹⁶ See p.215 in Deleuze, *Difference and repetition*.
- ¹⁷ See p.202 in DeLanda, *Intensive science and virtual philosophy*.
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- ³⁶ See p.33-34 in Rosi Braidotti, "A Theoretical Framework for the Critical Posthumanities," *Theory, Culture & Society* 36, no. 6 (2018), <https://doi.org/10.1177/0263276418771486>.
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