

Transindividual Urbanism Novel territories of digital participatory practice

Annarita Papeschi
The Bartlett School of Architecture, PhD Candidate & Theory Tutor
Flow Architecture, Director

Abstract

Like an omen, the advent of ubiquitous technologies has carried the general expectation for the emergence of new forms of collective authorship. Drawing on cybernetic theory of communication and on the work of French philosopher Gilbert Simondon, the paper builds an ecological and materialist foundation to ideas of digital participation by presenting a discussion of Simondon's *L'individuation Psychique et Collective* (1958). Here, the philosopher describes the individuation of the collective subject as an ontogenetic and metastatic process of psychological and affective events producing the Transindividual, thus offering a biological interpretation of the social process of becoming and a reconceptualization of ideas of knowledge and distribution of information.

By opening the digital participatory scholarship to ecological and post-humanist theory, the paper intends to offer a better understanding of the complex nature of collective feedback, creating the potential for the affirmation of novel mediated urban narratives and aesthetics. These ideas are further explored through a design-research practice that uses biometric sensing, live data visualisation and generative design to investigate the aesthetic, technological and cultural dimension of Transindividuality as a model for collective authorship. The paper presents two projects, The HeartBit Walks and Affectual Infrastructures. These were designed as participatory events for larger event series in London, respectively the London Festival of Architecture 2018 and the E17 Art Trail 2019.

Developed as a psychogeographic mapping event in Hackney Wick, The HeartBit Walks builds on previous methods developed by artist Christian Nold, investigating the use of biometric sensing (Galvanic Skin Response) and live data-visualisations for urban analysis. GSR information was gathered during short group walks and visualised during in-situ group discussions as situated dynamic animations, exploring the modes of reconfiguration of group knowledge through the experiential act of walking. The results were collected in a rich visual index that by rendering the diverse perspectives with granular definition offers a multi-scalar photography of the pedestrian mobility issues in the area.

Drawing on the methods firstly explored in The HeartBit Walks, The Affectual Infrastructures project involved six environmental activists in the collection of environmental sound and GSR data at key locations in East London. The project attempts the detection of common sonic, spatial and emotional connections through the observation of data patterns at group level, exploring the metastatic formation of novel collective environmental awareness and the production of spatial configurations through multi-objective evaluation methods. The results inform a multi-media installation that, working as an adaptive network, releases at intervals the intertwined local sonic recordings, thus materialising for the public the intertwined situated experiences of the activists across space, time and individual identities.

Within an ecological angle that places humans and their living and non-living co-species as the network of actors that collaboratively addresses the production of space, the Transindividual Urbanism project proposes biometric sensing as a tool for the systematic deconstruction of the human agency and the reimagination of platforms for group knowledge creation and collaborative decision-making. By constructing open archives of sensual collective knowledge and exploring generative mechanisms of real-time reflexive awareness, the project radically challenges previous conceived ideas of distributed authorship defining new trajectories of operation with the potential for radically reshaping the processes through which culture and places connect locally.

Keywords

Biometric Sensing, Citizen Science, Collective Authorship, Participatory Design, Simondon

1. Introduction

A few years ago, I came across a little fascinating publication titled “Suspicious images, latent interfaces”. The pamphlet, published in 2009, consisted of a light-hearted conversation between Benjamin Bratton and Natalie Jermijenko discussing data visualisation, where the two argued in favour of what they perceived at the time as a yet-to-be realised potential for data-visualization to act as political dashboards (Bratton and Jermijenko, 2009). A decade later, the global-scale emergence of ubiquitous computing has certainly contributed to the wide-spreading of this expectation and reinforced the anticipation for distributed intelligent mechanisms of decision-making.

Within a parallel discussion on digital customisation and authorship, Carpo (2017) indicates how a still rising expectation for participatory features in architectural design may be linked to the emergence of computational methods since the late 1990s and early 2000s. I would argue with Carpo that the promise of a digital participatory turn sits today still largely unmet. This is true, despite the number of projects that have addressed more recently the mechanisms of digitalisation of participatory urban practices on one side, or the participatory potential of digital fabrication at the other end. These two distinct trends, which include the exploration of methods for collective knowledge aggregation, as well as the formulation of technological platforms for architectural scale open purposive action, describe together the focus of what I will address as the current digital participatory scholarship.

Wikipedia House represents a good example of the limits and idiosyncrasies of current architectural-scale online open-fabrication. The project, described by Ratti in 2015 “as an online, open source platform of user generated housing designs, that anyone can download and print with plywood on a CNC mill and snap together like an IKEA furniture” (Ratti, 2015), sits online today as a barren shelf offering a single house type, the type originally designed by its founders as a prototype for the project. Since its launch the library has been sparsely used and nobody seems to have responded to the invitation for contributions to its online open extension (Wikihouse).

On the opposite side of the spectrum, Nold (2018) offers a fundamental critique to responsive urban planning projects that have attempted the integration of mechanisms of feedback to emotive dataset, and points out how by rendering emotional events as an abstraction, through what is a reductionist operation of quantification of qualitative information, these methods cut de-facto the happenings off from their causations, with an approach that ultimately sabotages the significance of the research findings and trades the possibility of discovering meaningful urban narratives for a misconstrued urban-scale real-time responsiveness.

Despite the two cases just mentioned sit at the opposite sides of the digital participatory project spectrum, they share a common base in what it seems to be a lack of attention toward the political and cultural dimension, a trait that also translates in the production of a deep disconnection between the agencies and motives of these projects and the related proposed materialities and modes of production.

2. Constructing participatory ecologies

My premise is that acquiring a philosophical perspective towards the topic of participation is paramount in order to radically re-imagine the cultural and technological basis of the collective project. For this purpose, I draw firstly on the ecological project of Gregory Bateson, and on the ideas on subjectivity and communication developed in his essay *Form, Substance and Difference* (Bateson, 1972).

Here Bateson describes *information* as something that is brought about by *differences*, as in the case of the territory and the map, where the information that gets onto the map is only given by the discontinuities of the territory, such as peaks or borders (Bateson, 1972, p. 457-58). *Paths of information*, he continues, are not only limited to the body, and, despite there are differences between the paths inside and outside the body, the world of information processing, is not limited by the skin (Bateson, 1972, p. 460).

In principle, he continues, if you want to explain anything in human behaviours, you are always dealing with completed circuits of information. “The elementary system with its messages in circuit is in fact the simplest *unit of mind*; and the transform of a difference traveling in a circuit is the elementary idea, ... the way to delineate the system is to draw the limiting line in a way that you do not cut any of the pathways which leaves things inexplicable” (Bateson, 1972, p. 465).

Ultimately, for a mutual identity to the cybernetic system, he concludes, the *unit of mind* and the non-homogeneous *unit of evolutionary survival*, as developed by the contemporary theory of genetic, coincide. “*The identity between the unit of mind and the unit of evolutionary survival is of great relevance*”, Bateson concludes, as along with this reasoning it is possible to localize an *immanent Mind* in the large biological system, the ecosystem (Bateson, 1972, p.465).

While this text is key in identifying the key concepts that entail the radical ecological redefinition of epistemology, the discussion around its social and political impact certainly also needs to take in consideration Gilbert Simondon’s theory of collective individuation. This is a critical contribution, for its holistic aspiration at connecting psychology to social and

behavioural sciences through an original ecological and materialist perspective, a contribution that at today has been unfortunately only fragmentally published in English.

3. Psychic life and quantum physics: Gilbert Simondon

“... becoming is not a framework in which being exist; it is one of the dimensions of the being, a mode of resolving an initial incompatibility that was rife with potentials”. (Simondon, 1992)

Gilbert Simondon published work is quite limited, and in essence confined to his doctorate thesis and his complementary dissertation both wrote in 1958. But while his second dissertation - with the title of *Du Mode d'existence des object techniques* - was published in the immediate aftermath of his doctorate discussion and had immediate impact, his main dissertation had a more complicated destiny, with only the first part - *L'individu et sa g n se physico-biologique* – published in 1964 and the second part - *L'individuation psychique et collective* – only published in 1989 in French and never published in an English translation in its entirety. Only a fraction of the introduction, in fact, appeared in the ambitious *Incorporations*, edited by Jonathan Crary and Sandford Kwinter (1992).

In the book Simondon discusses the ontology of the collective subject in the form of its ontogenesis. As an alternative to the substantialist and hylomorphic theories of subjectivity creation, Simondon builds an energetic theory of the process of becoming a subject – the *individuation* – in an argument that, by borrowing at large from the natural sciences, sees the physical, psychological and social processes of evolution as deeply intertwined. As an introduction to his main argument Simondon firstly asserts the result of the *individuation* as the couple subject-environment, and proceeds to observe that the *individuation* is a temporary condition that can only manifest in a system with latent potentials as relative resolution. As a result, the idea of ontogenesis of the subject acquires in Simondon's cosmos its full meaning only by designating a continuous process of development (Simondon, 2001, p.28).

The *physical individuation*, the first of the stages of *individuation*, is described as the case of resolution of a metastatic system. Here Simondon offers the example of the genesis of crystals where the process of *individuation* is not given by a combination of given form and matter, but by a resolution from the inside of a metastatic system with rich latent potentials (Simondon, 2001, p. 30). The next stage is the *individuation of the living individual*, in which, Simondon argues, the *individuation* is not abrupt and final as the living subject keeps the permanent ability to new individuations: *“not only he [the living individual] is the result of the individuation, as the crystal or the molecule, but the theatre of the individuation”* (Simondon, 2001, p. 32).

Finally, *“with an analogue hypothesis to the one of quantum physics”* Simondon observes how it's possible to imagine that a regime of metastability may be preserved and conveyed by the individual, and that *participation* may be part of a larger process of *individuation* enabled by the pre-individual reality of the individuals and their potentials (Simondon, 2001, p. 33). The *psychic individuation* and the *collective individuation* are the two following steps that describe the internal and the external relations of the individual. The two individuations have a reciprocal effect on each other and allow to define the category of the *transindividual* as a new type of collective subjectivity that born from an authentic new operation of individuation lives its own changes on the basis of its own specific metastaticity (Simondon, 2001, p .34).

As Simondon further explains, life as individuation is conceived as a discovery, in a conflictual state, of a new axiomatic that incorporate and unifies in the comprehensive system of the individual all the elements of that condition (Simondon, 2011, p.35). Knowledge therefore needs also to be redefined, as it cannot be built on the basis of abstractions from sensations, but *“through a problematic deriving from a primary tropistic unity, a coupling of sensation and tropism, the orientation of the living being in a polarised world”* (Simondon, 1992, p.309). Building an antagonist argument to the theory of information of Shannon, Fisher, Hartley and Wiener (Simondon, 2001, p.61), Simondon therefore explains that *“information is never found, but always the results out of the tension between two different realities; [and that] meaning will emerge only once a process of individuation will clarify the dimension through which these two realities can become a system”*. (Simondon, 2001, p.37).

By redefining the idea of collective subjectivity as a process of change through metastatic phases moved by psychological and affective events, and with the resulting re-conceptualisation of ideas of knowledge and information, Simondon not only offers the basis for a reconsideration of the process of becoming collective and building collective knowledge, but with his transversal materialistic and ecologic approach he indicates the perspective through which a novel post-human and distributed form of authorship can be explored.

4. Exploring metastatic platforms

Transindividual Urbanism formulates a design-research practice that uses historical research, participatory urban analysis and design speculations to explore the aesthetical, technological and cultural dimension of transindividuality as a generative model for collective authorship. With an ecological angle that places humans and their living and non-living co-species as the network of actors that collaboratively addresses the production of space, biometric sensing is used as a tool for the systematic deconstruction of the human agency and the reimagination of platforms for actionable group knowledge creation.

4.1 The HeartBit Walks

The HeartBit Walks was developed as a psychogeographic mapping project for the London Festival of Architecture 2018. The project explored a wide section of diverse urban fabric in East London, stretching across the edges of the newly redeveloped Olympic Park and Hackney Wick, with a particular focus on the complex network of cycling and pedestrian pathways that offer transversal connectivity across the River Lee and the A12.

An initial workshop took place at the Bartlett School of Architecture, Master of Urban Design, to develop an Arduino portable apparatus that, drawing on methods developed by artist Christian Nold, was designed to collect combined Galvanic Skin Response (GRS) - an indicator of the emotive status also used in lie-detecting tests - and General Positioning Information (GPS). The project continued as a two-day public event, involving 25 participants invited to wear the apparatus during explorative group walks in the area. On return to the meeting point, the detailed emotional insights were visualised during in-situ group discussions that focussed on differences between individual and summative experiences visualised as situated three-dimensional models and dynamic animations.

The various accidents that, as perceived by each participant, had been annotated during the group discussions, were further classified through an identification of the primary and secondary sense. For example, an encounter with noisy school children on a bridge was identified as sound-sight, a mother stopping to breastfeed her daughter on the sidewalk was labelled as touch-smell. As a result, a series of dendrograms and sunburst diagrams were produced to illustrate the relations between the specific sense and the recollections of the events. A particular focus was placed on the analysis of six group walks, with the production of an overall map that visualise the different journeys and the intensities of the summative data for each group, together with a set of additional group visualisations overlaying the GSR data collected from the different participants and the position and the typology of the events.

In the overall these visualisations compose a rich visual index of the event that by rendering the diverse perspectives with granular definition offers a multi-scalar photography of the experience. Not only in fact the diverse identities of the participants and the details of how their physical and mental abilities affected their experience are revealed, but through the vertical sensual categorisation of the events incurred, the different experiences are compared and interwoven in a collective visual diary rich of indications and urban insights.

4.2 Affectual Infrastructures

Drawing on the body of knowledge developed for *The HeartBit Walks, Affectual Infrastructures*, was developed for the E17 Art Trail 2019 in London. The project continued to explore the use of GSR information investigating emotional group patterns in urban spaces while initiating a parallel line of research exploring the use of generative algorithms for the production of a collaboratively informed artifact.

Through a call on social media, six environmental activists were recruited. The participants - a mix of academics, designers, visual artists and a psychotherapist – were met at various locations in East London to record a three minutes speech, together with the concurrent environmental sound and GSR signals. Data patterns were observed at group level with the intent to detect common sonic, spatial and emotional connections between the various participants at different points in time. A set of the overlaid GSR signals highlighted the linkages at peak emotional moments; the signals were further analysed with consideration to their urban location and overall spatial arrangement making use of a multi-objective genetic algorithm that searched for three concurrent goals: time proximity, emotional proximity and peaks of tranquillity within the group.

The results informed a spatial installation that materialised for the public the layered situated experiences of the participants. Built with a multitude of hand-formed rattan stems that follow the pattern generated through the multi-objective spatial simulation, the artifact spatialises the emotional group condition offering a physical rendition of the intertwined occurrences and, working as an adaptive network, it releases the six ambient and speech recordings edited with an overlaid structure that responds to the specific pattern of emotional proximity in the group as seen by each participant.

A conclusive panel discussion was organised with the participants to consider the findings. This was the second time that the group physically met after a first preliminary encounter, and the first opportunity for them to review each other outcomes. Acting as an open archive of sensual collective intelligence, the installation and the graphic supporting materials enabled the participants to navigate the different points of view and situated happenings. The experience continued de-facto the metastatic process of collective subjectivity and knowledge creation, ultimately highlighting how the determination of an iterative mechanism of multi-objective responsiveness could potentially offer further moments of group awareness and more opportunities for collective knowledge and purpose growth.

5. Conclusions

The HeartBit Walks and the *Affectual Infrastructures* constitute an initial attempt to explore two critical dimensions of the digital participatory project, dealing on one side with the mechanisms for collective knowledge aggregation, and on the other with the formulation of platforms for open purposive action. In opposition to those cases of responsive design in which the measure of the environmental phenomena is considered in isolation, within a perspective that de-facto ascribes the human subject to an isolated and sanitised position, The *Transindividual Urbanism* project proposes biometric sensing as a tool for the systematic deconstruction of the human agency and the reimagination of a collective project that, within an ecological angle, places humans and their living and non-living co-species as the network of actors that collaboratively addresses the production of space.

Within this context, it is through the construction of open archives of a sensual collective knowledge that aims at maintaining traceable ties with their sources and narratives, and through the introduction of mediated mechanisms for real-time awareness seeking to engage metastatic processes of group knowledge and purpose production, that the project offers some precedents for a collective urban practice that, by dwelling on ideas of open attribution of significance and multi-objective evaluation, offers on a first instance new models of group negotiation and decision-making. But it's by further engagement with Simondon's notion of *tropism*, the complementary half of *sensation* in the coupling of the primary unit from which *knowledge* derives (Simondon, 1992, p.309), that the project's direct confrontation with space production through generative algorithmic methods takes a central role in the attempt to readdress the endemic disconnection between the agencies, motives, and materialities of the current digital participatory project through informed matter.

The result is an emergent aesthetic that informed by the close collaboration of matter, technological infrastructures and human behaviours, radically challenges previously conceived ideas of distributed authorship and defines new trajectories of operation for a digital collective practice that have the potential for radically reshaping the processes through which culture and places connect locally.

Project Credits

The HeartBit Walks

Psychogeographic event, London Festival of Architecture, 2018

A project by Flow Architecture, Annarita Papeschi and Vincent Nowak

Lead researcher: Annarita Papeschi

Team: Annarita Papeschi, Vincent Nowak, Alican Inal, Cait Brock

Affectual Infrastructures

Multimedia Installation, E17 Art Trail 2019

A project by Flow Architecture, Annarita Papeschi and Vincent Nowak

Lead researcher: Annarita Papeschi

Team: Annarita Papeschi, Vincent Nowak, Jessica Lo Faro, Iva Liberta, Vanessa Panagiotopoulou

With contributions by: Samuel Bedford, Iva Liberta, Vanessa Lastrucci, Claudia Pasquero, Maria Chiara Piccinelli, Rachel Summers.

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*All citations from this text have been translated to English by the author.