Performing Weedist

AI & SOCIETY
https://doi.org/10.1007/s00146-023-01671-8

OPEN FORUM

Performing Weedist

Kwan Queenie Li[1] · **Joel Austin Cunningham**[2]

Received: 23 February 2023 / Accepted: 11 April 2023

Abstract
The world is currently facing a wave of data centre construction. Fuelled by an explosion of data production and the emergence of edge computing, our cities are witnessing the materialisation of new architectural typologies that increasingly convolute notions of digital and bodily distinction. Whilst the last 2 decades have seen the proliferation of separate human and post-human urban environments, here we consider the agency and performativity of human communities within increasingly tangled contexts. As edge computing continues to bring the material reality of data processing closer to our physical bodies, perhaps its time to reassess who, or what, our cities now serve. In an age of unprecedented digital transformation, when our identities seem to be ever more intangible, how we might perform within environments that are increasingly catering to our digital rather than bodily needs? Today, the Anthropocene expels nature to the periphery. Tomorrow, humans become marginalised—"weeds", thriving in an epoch of data.

Keywords Data centres · Data · Weeds · Performativity · Urban planning · Co-existence

1 Weeds

The ecology of weeds is a popular subject amongst artists and scholars. The 2016–2018 Vera List Centre Prize for Art and Politics was awarded to artist Maria Thereza Alves' body of work Seeds of Change. Alves' work studies New York City's colonial past and trade history through ballast flora found on merchant sailing ships travelling through European port cities. The ballast flora's uncertain and broad origins allow us to question the notion of plants that "become native" ('Maria Thereza Alives, Seeds of Changes: New York, A Botany of Colonisation', n.d. 2023).

For the 2018 Taipei Biennial, artists Jeffrey Hou and Dorothy Tang, in collaboration with students from several countries in the Asia–Pacific region, led similar research into the origin of city weeds. Titled Plant's-Eye Views of Taipei (2018), Hou and Tang examined local plants to understand the physiological characteristics and life histories of weeds, as well as their adaptive features and exosystemic behaviour ('TAIPEI BIENNIALEN—Jeffrey HOU and Dorothy TANG' n.d. 2021).

In contrast to research-based work addressing the topic of weeds, artist Michael Landy in *Nourishment* (2002) highlights plants' diaspora and their adaptability to "find little bits of soil to prosper" through aestheticism, arguably to the appeal of art collectors (Tate n.d. 2021). In addition, the writer Nina Edwards in her book Weed (2015) extends the relevance of weeds in today's society beyond their ecological or aesthetic characteristics, to their ability to grow in unattended spaces, and thus their adaptability to complex environmental contexts (Edwards 2015).

What is a weed? What defines weeds if the term "plants" is insufficient to address their essence? In the Oxford English Dictionary, the label 'weed' refers to an unwanted wild plant, a description that rejects the conventional biological classification of plants into genus and species. Rather, as a type of autonomous and nomadic vitality, weeds are characterised by their ability to evade human dominance and control, often squeezing through the cracks of man-made surfaces. With their autonomous act of growing in cities, urban weeds are relentless and dynamic, resisting

✉ Kwan Queenie Li
kwanque@gmail.com

Joel Austin Cunningham
joelcunningham0@gmail.com

[1] Art, Culture and Technology Program at MIT, Massachusetts Institute of Technology, Boston, USA

[2] School of Architecture and Planning, Massachusetts Institute of Technology, 77 Massachusetts Avenue, 7-231, Boston, Cambridge, MA 02139, USA

Published online: 23 April 2023

Fig. 1 Untitled (Brussels), Joel Austin & Kwan Q Li, C-type photography, 2017

established labels and stereotypes in search of new possibilities and hybridity (Fig 1).

In the age of the Anthropocene, climate change, and geopolitical conflict, plants have been persistently thrust into the spotlight. From landscape design to botanical gardens and urban greenery, plants can function as tokens of state power. Plants have witnessed centuries of humankind's development, forming a sort of living archive of historic migration through colonisation, industrialisation and globalisation. Perhaps most pertinent to humanity's current dilemma, the ecological development of plants may also contain survival instincts—much needed in today's age. The study of weeds, from how plants subvert the contemporary city to their diasporic patterns, might also offer a glimpse into a post-human, digital and virtual era.

2 Data

Today's society can be marked by the transcendence of physical economies into digital and virtual systems. We live in an age of data augmented by networks, from global freight, to cellular data, to the internet. Yet, these virtual systems, and their around-the-clock global connectivity and neoliberal identity, come at a cost. Each digital network ultimately is designed, operated, and owned by nation-states and businesses who (often under the guise of privacy policies, and through tailored digital advertisements) deploy a plethora of tactics to influence our behaviour and shape our desire.[1] Simultaneously, such digital forces have brought about a surge in surveillance technology, with examples ranging from digital social credit systems in China, internet censorship in Turkey, and big data analytics in the United States and beyond (Liang et al. 2018).

Equally significant, though perhaps less acknowledged, our digital and virtual society also takes place on an urban, material scale, in cities across the world. Data centres, telecom hubs, and server farms are burgeoning across urban areas, resulting in an architecture of businesses that exist without human occupation. Home to endless social media data, from dusted profile pictures to our politician's latest tweets, one may consider these architectural containers a manifestation of twenty-first century identity.

With a lack of concern for human occupants, Facebook's Lulea server farm located in North Sweden, resides

[1] (Zuboff 2019) Social psychologist Shoshana Zuboff put forward the example of Facebook's experiment and the Google-Incubated augmented reality game, "Pokémon Go", as a human behaviour modifier, in which the spell of Pokémon hunting has led players into designated zones physically and triggered real-life experience.

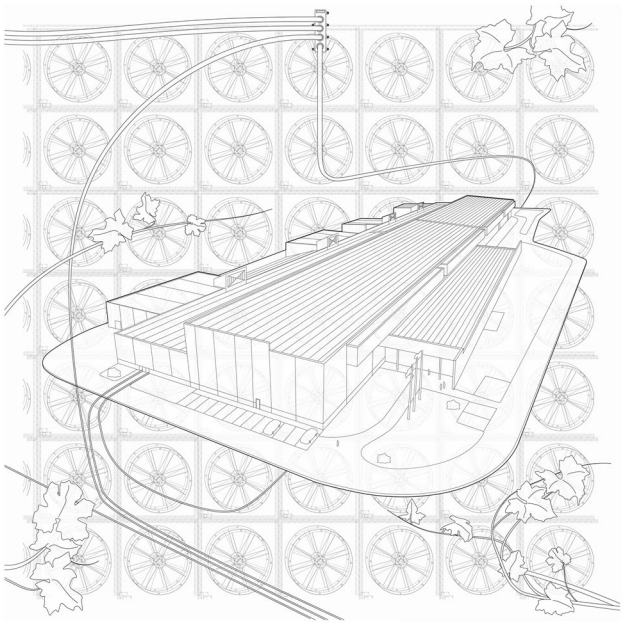

Fig. 2 Facebook Data Centre, Lulea (Sweden), Joel Austin & Kwan Q Li, Perspective drawing, 2019

in a geographic area defined by an extremely cool climate—this reality reduces the facility's air conditioning bill, but also confirms its dismissal of bodily concerns. Contrastingly, the Qianhai Data Centre in Shenzhen, China operates as a "digital lighthouse" for the regional tech-hub. This building disguises the reality of placing thousands of server racks in the heart of the city through a series of artificial green terraces and a digital display of traditional Chinese iconography ('Qianhai Data Center' n.d. 2021). This is an architectural design deceives the cities and citizens it serves (Fig 2).

Being a crucial cornerstone of the internet of things, edge computing exudes a similar vibe of spatial subversion. Technically understood as a distributional strategy to situate data processing closer to end users, or "the edge", this computing typology has been explicitly framed as an architectural decision rather than a type of technology. A decentralised paradigm to optimise bandwidth, latency, resiliency, and data sovereignty, edge computing proposes a trans-utopian value system and allows the offshoring of data processing from isolated mega data centres to our urban centres. It permits spontaneity to users, and almost synchronises virtual happenings with the real clock. The authenticity of life is recalibrated when more and more data centres are found in our cities, the places we call home.

The upcoming epoch of data is more than a contemporary vogue of cyberpunk, speculative futurism or judgement-day abjection. The "edge" of our data production and consumption is growing exponentially, the new world is becoming an infinite polygon of connections, defeating the general isometric rules of physical space. With the growing influx of post-human architecture in cities, all of us, internet users, are contributing to the displacement of humans from our current physical occupation and resetting the ecosystem.

In addition to being a presence in our cities, the towering energy consumption of global data centres now stands at around 220-320 TWh/year (Kamiya n.d. 2021), a figure that would place them collectively amongst the world's twenty-five most energy hungry nations (Statista 2019). Whilst these architectural amalgamations exist to serve our digital needs, they are increasingly becoming a physical concern.

Fig. 3 Equinix HK3, Tsuen Wan (Hong Kong), Joel Austin & Kwan Q Li, C-Print photography, 2019

Fig. 4 A Weed and a cigarette outside a data centre in Hong Kong, Joel Austin & Kwan Q Li, C-type photograph, 2019

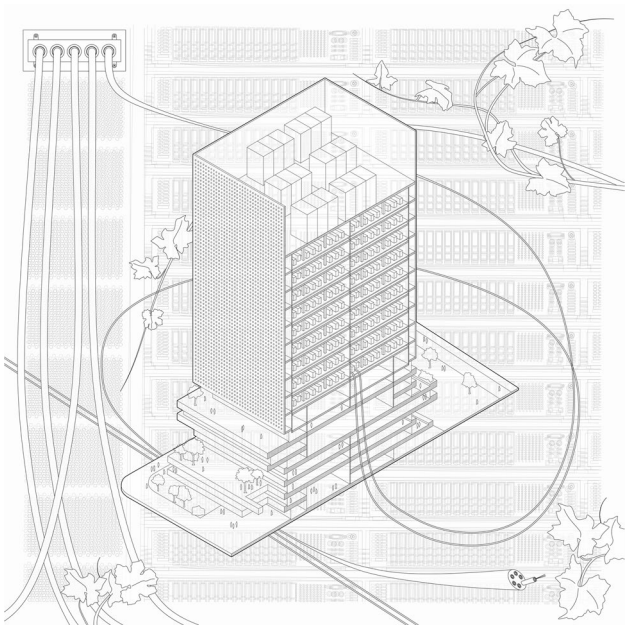

Fig. 5 Qianhai Data Centre, Shenzhen, Joel Austin & Kwan Q Li, Sectional Drawing, 2019

3 Humans

The tropical climate, urban density and searing house prices of Hong Kong make it an apt case to consider this quasi-digital dilemma. Paying the world's highest average house price of 2020 in Hong Kong allows you to acquire 1.6 equivalent houses in Singapore, or almost 3 similar-sized houses in New York City or Paris (Pascual 2020). This golden fable, however, is disconnected with many Hongkongers who simply cannot afford to own a home. In 2016, more than two hundred thousand residents, stretched their daily lives in subdivided units (The Government of the Hong Kong Special Administrative Region 2018).[2] These housing types are unique to Hong Kong which has a median per capita floor area tipping a merely 5.3 square metres (Research Office, Information Services Division 2016).

People's cry for affordable housing remains a lingering echo, whilst the government of the Hong Kong Special Administrative Region (HKSAR) has been incubating a post-human architectural network beneath the familiar visuals of its local scenery. To enable the further growth of the

[2] (The Government of the Hong Kong Special Administrative Region 2018) Subdivided units (SDUs) are formed by splitting a unit of quarters into two or more "internally connected" and "externally accessible" units commonly for rental purposes.

internet and its data servers, the government has deployed a specific set of policies since 2012. These measures include incentivising the development of data centres within redundant industrial facilities, leveraging greenfield sites, and eschewing potential residential developments (Office of the Government Chief Information Officer, HKSAR Government 2016). As a result, the city is now home to more than 50 data centres. Within this particularly intricate context, one may start to consider what lies in wait for local communities faced with the progress of a new generation of ideological and architectural forms. Who, or what, will prevail when faced with such steep land shortage and satirical housing adversity?

Following trends in automation and artificial intelligence, data centres may one day operate and expand without any human guidance. With much of the architectural typology resembling a post-human aesthetic, one can forecast a moment in time when human co-inhabitation is deemed useless. This leaves one to ponder: in light of the world's foreseeable focus on data centres, where are the humans in the "post-human city"?

In "New Dark Age", the artist and writer James Bridle pronounced the current age "dark", not referring to any literal darkness or intellectual void, but to an opaqueness that impedes our comprehension of current situations and our capability to respond accordingly (Bridle 2018). Many of today's relationships, communication, and transactions occur without direct human touch. In a growing atlas of social media existence, human identity is becoming increasingly detached from biological interpretation. In 2019, Instagram announced a policy against excessively retouched imagery and unsolicited facts, it fuelled a philosophical crisis: if our digital existence needs to be policed due to its implications on real-life, could our digital profile then be considered a legitimate reality in itself—one that exists beyond a mere reflection (Facebook 2019)? With Facebook's daily users exceeding 1.6 billion in 2019 (Noyes 2020), our understanding of such phenomena is crucial to both our digital confidence and our ability as humans to exhort an alternative (Fig 3).

4 Weedists

Is it time for a hiatus? Are we as humans doomed hopeless?

Whilst our world digitises and potentially renders biological beings idle, a similar threat of forced co-existence has been a familiar predicament for plants and other non-human livings throughout our anthropological history. Can we draw a parallel between the relationship of weeds surviving through manhole covers, to that of humans surviving amongst data centres? What lessons are there to be learned from plants, their adaptability, growth, and diaspora, that we can apply to an anticipated post-human future?

Reflecting on the non-complying attitude of weeds in relation to technological, man-made, and linear boundaries, "weeds" is an umbrella term that does not specify any species or genus. They are anonymous, everyday greenery that grows almost independently. Against dominant and anthropocentric urban design, weeds exemplify the 'geographic discontinuity' that Michel Foucault once mentioned to Gilles Deleuze in a conversation regarding 'intellectuals and power'. Their discussion suggested that instead of becoming an outweighing force against the common enemy of power, a diffused form of struggle (like weeds) might be a more effective resistance (Foucault 1976). Then, could we learn from the phenomenological observation of weeds in postulating our own post-human manifestation?

The weeds' spirit can be further understood through the philosopher Jacques Derrida, who developed the decentralised, deconstructive approach against a regime of totalisation, in other words, a plausible existence of fixed organising principles in the world. Derrida proposes that instead of taking ideologies as a zero-sum game, "freeplay" can be activated against established structures to unleash a poly-directional paradigm (Derrida 1978). In the speculative struggle between data and humans, perhaps it is not about eliminating one or the other. A vision of co-existence arises when humans learn to navigate a linear, post-human future through freeplay founded on the survival mechanisms of weeds; professing a new human identity as "Weedists".

The notion of "play" indeed rhapsodies the vanguard into alternative social ideologies that pervade digital culture, surveillance, and urbanity. When linear perspectives, such as the binary of human and data, are questioned, one might consider to engage with a radical normality. This "free fall", defined by artist and theorist Hito Steyerl, defines the expression as a multiplication and de-linearisation of given contextual horizons and established perspectives (Steyerl 2011).

Weedists, thus, are in search of a playful identity that operates against a demarcation of our future. Can we break through the universal toils of inflating the neoliberal information age, can we outgrow boundaries and dismantle hegemony through the cracks?

Weeds are modest plants, fluidly formless with an ability to move effortlessly across social and physical boundaries. Alves' ballast flora reminds us how weeds possess diverse histories, diaspora, and native languages without being dogmatically defined or categorised. Weedists are a performance within an urban evolution, the key to human survival in the post-human city (Fig 4).

5 Performance as survival

In 500 BC, the philosopher Plato claimed that an idea is truth, its material is its imitation, and art is therefore a semblance of that imitation, a copy of the copy (Bychkov and Sheppard 2010). In 2020, we witness our world evolving into an algorithm-mediated lifestyle; a post-human architectural collage where digital presence prevails over physical reality. When the virtual is actualised, through the virtualisation of the actual—the borders amongst Plato's notions of "truth", "form" and "copy" become unprecedentedly blurred.

The eclecticism of such concepts can be explored in culture when new societal relationships are imagined through art. This "aesthetic dimension", as defined by the philosopher Herbert Marcuse in 1970, is "the possible Form of a free society". By capitalising the word "Form", Marcuse emphasises that an imaginative manifestation, mediating between rational consciousness and sensuous need, would become increasingly subversive of capitalist institutions, and could substantiate liberty and agency in the twenty-first century's digital explosion (Marcuse 1969).

In response to a quote from the scientist-philosopher Michael Polanyi—"we can know more than we can tell", this abstraction of art can fill a gap in our digital unconsciousness, rejuvenating a tacit knowledge and propelling a development of collective intelligence (Polanyi 1967).

Future—as its urbanity propels towards a post-human condition, the performance of humankind may become the primary reason for our current humanised "cities" to persist as a tangible proof of humanity itself. Whilst a simple, top-down coding of our behaviour into binary and programmable formula may eventually fail to respond to our physical needs, the perseverance of weeds can be seen as a key to human survival. Recalling the previously discussed Qianhai Data Centre in Shenzhen, a digital infrastructure possessing green ornamentation upon its concealing terraces—whilst these plants are complicit in their participation in a programmed, de-human scenery, are they not still alive and blooming to their fullest? Even in the face of technological potency, on occasion the analogue approach of resorting to ecology can be a progressive deviation, an ideological short circuit. A key for humans to survive.

When our physical and social landscapes are gradually torn down to be replaced by digital and physical architectures, it is time for humans to toy with our own complexity. The curtain is up—we perform as humans now, but our truth, form, and copy may ultimately become *weedist* (Fig 5).

"Performing Weedist" is a speculative, theoretical proposition by artist Kwan Q Li & architect Joel Austin, formulating part of their artistic research project, "Data Urbanism: no humans in the city, but weeds", supported by the Design Trust Seed Grant and the Council for the Arts at MIT. A related cinematic work is exhibited at the 2021 Venice Biennale International Architecture Exhibition, Hong Kong Pavilion. The project is digitally archived at https://nohumans.city.

Funding 'Open Access funding provided by the MIT Libraries'.

Data Availability We do not analyse or generate any datasets, because our work proceeds within a theoretical approach.

References

Bridle J (2018) New dark age: technology, knowledge and the end of the future. Verso, London

Bychkov OV, Sheppard ADR (2010) Republic 10. Greek and Roman Aesthetics, 52–67. Cambridge Texts in the History of Philosophy. Cambridge University Press, Cambridge, pp 52–67

Derrida J (1978) 'Structure, Sign and Play in the Discourse of the Human Sciences'. In Writing and Difference. Chicago: University of Chicago Press. http://www2.csudh.edu/ccauthen/576f13/DrrdaSSP.pdf

Edwards N (2015) Weeds. https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1030118

Facebook (2019) 'Combatting Misinformation on Instagram'. About Facebook (blog). https://about.fb.com/news/2019/12/combatting-misinformation-on-instagram/. Accessed16 Dec 2019

Foucault M (1976) Intellectuals and power: a conversation between michel foucault and gilles deleuze. Language, counter-memory, practice: selected essays and interviews. Cornell University, New York

Kamiya G. n.d. 'Data Centres and Data Transmission Networks—Analysis'. IEA. https://www.iea.org/reports/data-centres-and-data-transmission-networks. Accessed 19 April 2023

Liang F, Das V, Kostyuk N, Hussain MM (2018) Constructing a data-driven society: china's social credit system as a state surveillance infrastructure: china's social credit system as state surveillance. Policy Internet 10(4):415–453. https://doi.org/10.1002/poi3.183

Marcuse H (1969) An essays on liberation. Beacon, Estados Unidos

Maria Thereza Alives (2017) Seeds of Changes: New York, A Botany of Colonisation. Michel Rein. http://michelrein.com/cspdocs/exhibition/files/maria_thereza-_alves_seeds_of_change_new_york_a_botany_of_colonisation_en.pdf

Noyes D (2020) 'Top 20 Facebook Statistics - Updated October 2020'. Zephoria Inc. (blog). https://zephoria.com/top-15-valuable-facebook-statistics/. 29 Oct 2020

Office of the Government Chief Information Officer, HKSAR Government (2016) 'Measures to Facilitate the Development of Data Centres'. Legislative Council Brief. https://www.legco.gov.hk/yr11-12/english/panels/itb/papers/itb-gcio11135c-e.pdf. Accessed 5 Apr 2021

Pascual R (2020) 'Most Expensive Property Market - Hong Kong $1.23 Million Per Property'. StockApps. https://stockapps.com/blog/2020/09/22/most-expensive-property-market-hong-kong-1-23-million-per-property/. Accessed 22 Sept 2020

Polanyi M (1967) The Tacit Dimension. Garden City, N.Y.: Anchor Books. https://monoskop.org/images/1/11/Polany-i_Michael_The_Tacit_Dimension.pdf. Accessed 5 Apr 2021

Qianhai Data Center (2022). https://www.mecanoo.nl/Projects/project/231/Qianhai-Data-Center. Accessed 5 Apr 2021

Research Office, Information Services Division (2016) 'Housing Statistical Highlights'. Legistlative Council Secretariat. https://www.legco.gov.hk/research-publications/english/1617issh09-public-housing-20161122-e.pdf. Accessed 5 Apr 2021

Statista (2019) 'Electricity consumption worldwide in 2019, by select country'. https://www.statista.com/statistics/267081/electricity-consumption-in-selected-countries-worldwide/. Accessed 17 Sept 2021

Steyerl H (2011) 'In free fall: a thought experiment on vertical perspective—journal #24 April 2011 - e-Flux'. E-Flux. April 2011. https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/. Accessed 5 Apr 2021

TAIPEI BIENNIALEN (2018) - Jeffrey HOU & Dorothy TANG. https://www.taipeibiennial.org/2018/information/99. Accessed 5 Apr 2021

Tate. n.d. "Creeping Buttercup", Michael Landy, 2002. Tate. https://www.tate.org.uk/art/artworks/landy-creeping-buttercup-p78730. Accessed 5 Apr 2021

The Government of the Hong Kong Special Administrative Region (2018) '2016 Population By-Census Thematic Report: Persons Living in Subdivided Units" Published'. https://www.info.gov.hk/gia/general/201801/18/P2018011800595.htm. Accessed 18 Jan 2018

Zuboff S (2019) The age of surveillance capitalism: the fight for a human future at the new frontier of power. New York: PublicAffairs. https://feb.unhas.ac.id/mm/wp-content/uploads/2020/11/The-Age-of-Surveillance-Capitalism_-The-Fight-for-a-Human-Future-at-the-New-Frontier-of-Power-PDFDrive.com-.pdf.pdf. Accessed 5 Apr 2021