Article

Three Disruptive Models of New Spatial Planning: 'Attention', 'Surveillance' or 'Sustainable' Capitalisms?

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Abstract: This paper compares and contrasts three disruptive models of potential and actual new kinds of spatial planning. These include 'seasteading', 'smart neighbourhoods' and 'renewable spatial systems'. Each is labelled with distinctive discursive titles, respectively: 'Attention Capitalism'; 'Surveillance Capitalism' and 'Sustainable Capitalism' denoting the different lineaments of each, although they all have their origins in the Silicon Valley techno-entrepreneurial milieu. In each case, while the path dependences of trajectories have diverged the progenitors were often erstwhile business partners at the outset. The paper is interested in qualitative methodology and proposes 'pattern recognition' as a means to disclose the deep psychological, sociological, political and economic levels that inform the surface appearances and functions of the diverse spatial planning modes and designs that have been advanced or inferred from empirically observable initiator practice. 'Dark Triad' analysis is entailed in actualising psychological deep structures. Each of the three models is discussed and the lineaments of their initiators' ideas are disclosed. Each 'school' has a designated mentor(s), respectively: academic B. J. Fogg and venture capitalist Peter Thiel for 'Attention Capitalism'; 'smart city planner' Dan Doctoroff for 'Surveillance Capitalism' and 'renewable energineer' Elon Musk for 'Sustainable Capitalism' the eventual winner of this existential 'dark versus light triad' urban planning contest.

1. Introduction

In this contribution, we return our attention to the question of most appropriate conceptual models to drive contemporary spatial development planning at urban, regional and inter-state levels. In previous papers (Cooke, 2020) we have been critical of 'smart city' evangelism, which is what characterises most of the policy press and academic research literature (for a mild rebuke, see Hollands, 2008; more recently, Söderström et al. 2014; Anthopoulos, 2017; Cugurullo, 2017) although contrasts have been drawn by a few more between the technophilia of 'smart' and the sociophilia of 'sustainable' (Yigitcanlar, 2019; Yigitcanlar et al., 2019). One of the few that tries to connect the two spheres is Yun & Lee (2019). They argue that the principal aim of 'the 4.0 Industrial Revolution' is to solve inherent problems of the smart city while simultaneously reducing its expenditure and improving its quality of life. To accomplish this, they advocate the reduction of city expenses by 'platformisation' (see also Cooke, 2008). This means recognising the enhanced GDP value from digital production (over consumption). Value creation is then conceived as a city platform built upon connectivity; its value drastically increases through integrating 4.0 Industry's online to offline convergence – otherwise 'digital twins' - platform. This involves the 'smart' city reflecting on its own reality in terms of its digital twin image in the 'cloud' as the information host. Such connectivity can

45 occur once complete information becomes accessible by interactive citizen participation through
46 smartphones. This is defined as the 'edge' element of the image-reality interface which integrates it
47 into the whole city image available on the 'cloud'. At this point, "self-organization" can theoretically
48 occur as the ideal linkage between the city and citizens.

49   The paper proceeds by elaborating three models of 'platform' informatisation that emanate from
50 what were, less than twenty years ago start-ups that have, by 2020 reached gargantuan corporate
51 scale. On the two ends of this spectrum are two contemporary 'varieties of capitalism.' Within one of
52 the polarities elaborated by Hall & Soskice (2001), namely lies a 'neoliberal' or as they termed it,
53 'liberal-market' model of capitalism. This they juxtaposed to a 'coordinated market' model. The first
54 was then seen as characterising the institutional form of the Thatcher and Reagan economic reforms
55 of the 1980s based on deregulation, privatisation, and liberal industrial relations. The second was
56 seen as 'Continental' or based on Germanic and Nordic 'corporatism' based on regulated competition,
57 state intervention and co-determination of industrial relations. While recognising the superiority of
58 the latter over the former in terms of economic stability, state intervention in the economy, and
59 mitigation of welfare and wage disparities (including spatial development), it has to be
60 acknowledged that some drift towards elements of the former institutional emphases, with some
61 privatisation, liberalising of markets, and weakening of aspects of managed welfare has occurred in
62 the past two decades. Accordingly this contribution examines varieties of neoliberal/liberal market
63 regimes that became hegemonic, not least with policy makers, through the 'entrepreneurialism,'
64 deregulation, informatisation' and 'financialisation' of socio-economic relations of the neoliberal era.
65 Methodologically, 'pattern recognition' involves identifying 'deep structures' not easily visible
66 beneath surface data accounts. While central to complexity theory, it is described as 'the automated
67 recognition of patterns and regularities in data' (Bishop, 2016). An often quoted instance is
68 classification. By setting up theoretically derived categories unexpected or even 'strange' patterns can
69 emerge. The 'Dark Triad' used in this paper is an example. Methodologically, data (e.g. verbal
70 responses) can be analysed according to classificatory elements and sub-elements (E.g. Narcissism)
71 then compared and contrasted with other classificatory elements (e.g. Psychopathy). In qualitative
72 research, interrogation of narratives is designed to enable identification of otherwise hidden sub-
73 structures, for example, 'callousness' which might underlie pathological intent or practice towards
74 others displaying 'quiescence' e.g. residents in a threatened or deprived neighbourhood. The aim of
75 this exercise is to demonstrate which of three 'ideal types' on the spectrum is superior in terms of
76 values such as individual and social autonomy, relative economic security, and sustainable, healthy
77 work-life balance. The paper proceeds by, first, elaborating the three models in question, naming
78 actors closely associated with them and their personality types and interests by reference to so-called
79 'dark and light triad' analysis. Second, it explains a qualitative methodology we term 'pattern
80 recognition' interrogation of deep structures that inform both ideologies and recipes for action and
81 change (Gibson, 2003; Tetlock & Gardner, 2016; Kay & King, 2020). Then finally it anatomises variants
82 of spatial development implications of the 'triad analysis' and 'pattern recognition' that are putatively
83 or actually realised in urban, regional and inter-state form to ascertain the most appropriate for
84 advanced 'anthropogenic' or 'sustainable' living and working. A brief Conclusions section completes
85 the contribution.

2. Three Neoliberal Models: 'Attention', 'Surveillance' and 'Sustainability' Capitalisms

87   The three conceptual models to be discussed in this brief contribution are the following–
88 'Attention', 'Surveillance' and 'Sustainable' capitalisms. First, we delineate, categorise and elaborate
89 the three socio-cultural models in question, equating each with its appropriate position on the 'dark-
90 to-light' spectrum of personality and ideological traits. In reality, since there has been some
91 recantation of the first to be discussed, it moves most and effectively becomes absorbed by the twin
92 poles of the spectrum. However, it begins as an extreme liberalist conviction that is usefully tested
93 out by the analytical framework mobilised before veering towards a moderation of its original
94 position.
95

96   2.1 Attention Capitalism

97   It is referred to here as 'Attention Capitalism' after Tristan Harris (Harris, 2017; Thompson, 2019;
98 Foroohar, 2019) though it can be discerned in the early thought of Herbert Simon (1971):
99   *'....in an information-rich world, the wealth of information means a dearth of something else: a scarcity of*
100 *whatever it is that information consumes. What   information consumes is rather obvious: it consumes the*
101 *attention of its recipients.'*
102   Thus what is Attention Capitalism? An article by urban planner Georg Franck (1999) blames
103 'The Economy of Attention' on the increasing significance of attention in a knowledge society and
104 economy saturated by exponentially increasing data-flows and information-feeds. The four key
105 aspects of Franck's theory of the 'attention economy' are: first, the importance of the fundamental
106 human desire for attention; second, the emphasis on parallels between attention and money; third,
107 the self-reproducing character of attention capital, which 'earns' interest rather as money does; and
108 fourth, the connections between the economy of attention and the expanding impetus towards
109 everyone aspiring to 'celebrity' status and becoming a 'brand'. To unpack these traits a little after van
110 Krieken (2018): first, Franck (2016) is in agreement with Simon's belief 'attention' has the trait of
111 scarcity (an economic value) but attention is also a basic human need (a psychological value).
112 Commoditisation of the psychological value by exploitation of the economic value of attention is the
113 definition of 'celebrity'. Second, unlike intangible abstractions such as 'human capital' or 'social
114 capital,' attention takes on metric value in the form of concrete and comparable 'currency' units such
115 as 'likes', 'recommendations', 'follower' 'influencer', 'engager' and so on, typical of social media
116 rating algorithms in Facebook, Instagram, and You Tube etc. Third, being a celebrity is sufficient to
117 earn an income from attention capital: attention breeds more attention. Paying attention to a celebrity
118 who returns a 'like'; is correspondingly value-enhancing for the 'follower' too. In this transactional
119 landscape the equivalent of the stock exchange, banks and the financial system are the media (mass
120 and social). Fourth, and finally, as increasing amounts of attention are devoted to celebrity and
121 consumption so commoditisation mutates into 'brands'. This produces a new form of social
122 inequality, between celebrities who receive a surplus of attention, and those who get little attention
123 (non-celebrities).As we show later, this explains the addictive power of social media, which seduces
124 its 'influencers' and 'followers' with this ongoing and ever-intensifying struggle for attention. The
125 best representation of the monetisation of taste, appropriately inverted to escape 'brands' is Cayce
126 Pollard, the 'influencer' in William Gibson's (2003) novel:
127   *'The novel's protagonist, Cayce Pollard, isn't a hacker but a brand strategist who's been hired by a viral-*
128 *marketing think tank for a commercial research project....... she practices a kind of semiotic hygiene, dressing*
129 *only in clothes, 'either black, white, or grey,' that 'could have been worn, to a general lack of comment, during*
130 *any year   between 1945 and 2000.' She treasures in particular a black MA-1 bomber jacket made by*
131 *[Japanese firm] Buzz Rickson's....There is now a range of 'Buzz Rickson's x William Gibson' military outerwear.*
132 *Meanwhile, a marketing think tank modeled on the one in the novel, popularized Cayce's fashion philosophy in*
133 *the form of 'normcore,' a trend—forecast, then real—based on the idea of secretive, informed, intentional*
134 *blankness. Normcore influenced design more broadly, shaping the aesthetics of companies like Everlane and*
135 *Uniqlo. The boundary between fiction and reality turned out to be even blurrier than Gibson had thought. He*
136 *had rewritten the code himself (Rothman, 2019).*
137   For Franck (2016) an even better example of 'attention capitalism' is precisely what the readers
138 of this journal do every day, the work of science and scholarship. The value of academic work is
139 largely measured by the amount of attention it receives: the citation rate of the journal in which an
140 article is published, the number of citations the article itself receives, the status of a book's publisher,
141 and the reputations of the book's reviewers. Thus citation is essentially a fee in attention capital paid
142 for the licence to use the cited author's information and ideas. Competition means there is a strong
143 motivation to capture academic attention with the catchy title and cover, the attention-grabbing event,
144 the radical critique of established positions, the provocative stance and, preferably, the association
145 with a recognised scholarly celebrity. As van Krieken (2018) concludes in his review of Franck's
146 schema: '....in the age of social media, this space has expanded enormously to include blog posts,

147 Tweets, Wikipedia, Facebook, LinkedIn and Pinterest mentions. In this sense, academic life is a key
148 example of the fundamental logic of 'celebrification'.

149   2.2 Origins and recent practice of 'Economy of Attention

150   Now that a clear definition of 'attention capitalism' has been provided, the next steps are to
151 review its origins in recent practice, next to the media forms it has taken and various recantations of
152 its ethos before interpreting – particularly – the implications for Franck's analysis for his take on
153 spatial development planning. On the last itemised, given a key trait of the Dark Triad which we
154 conduct in the third section, is Narcissism and especially its vital expression, which is 'vanity'. It
155 might be thought the contemporary work of 'starchitect' planners is a prime candidate for egocentric
156 treatment. But before that, we turn attention to the work of Stanford psychologist B.J. Fogg's (2003)
157 implementation of 'digital attention capture' at the Persuasive Technology Lab working with his graduate class
158 at Stanford University. This was recalled by alumnus Tristan Harris in the following.

159   *'The reason I care about this problem so much is I studied at a lab called the Persuasive Technology Lab*
160 *at Stanford that taught students how to recognise exactly these techniques. There's conferences and workshops*
161 *that teach people all these covert ways of getting peoples' attention and orchestrating peoples' lives. And it's*
162 *because most people don't know that that exists that this conversation is so important (Harris, 2017).*

163   After the talk, B.J. Fogg protested to Harris that the Persuasive Technology Lab's work had been
164 traduced, but shortly afterwards it changed its name to the Behaviour Design Lab with a mission to
165 foster 'good habits'. However Harris went on, after being invited to be an executive in Google as the
166 in-house 'design ethicist', a post from which he resigned in frustration, to form the non-profit Centre
167 for Humane Technology (CHT). This was used to lobby other 'apostates' like Kevin Systrom and Jack Krieger
168 who founded Instagram and attended Fogg's class at Stanford which became notorious for training a
169 generation of Google, Facebook, Instagram, Uber and Snapchat entrepreneurs to use psychological insights
170 to influence users' practices. Among these, Instagram's founders Systrom and Krieger were known for
171 promoting 'vanity' among its users, a trait that attracted Mark Zuckerberg's Facebook to acquire their start-
172 up for $1 billion in 2012. Subsequently, Systrom and Krieger resigned from Facebook in face of Zuckerberg's
173 hubris, paranoia and psychotic autocracy. Other CFT 'apostates' included Evan Spiegel founder of Snap, Jack
174 Dorsey of Twitter, and Roger McNamee former Facebook investor and mentor to Mark Zuckerberg. Nowadays
175 Dorsey's disaffection is expressed in the fact that as chief executive, he only works for Twitter part-time, has
176 failed to improve Twitter's toxic culture into a safer and kinder environment, prefers to devote time to also
177 managing Square, his digital payments giant, and was in early 2020 being threatened by boardroom raider
178 Paul Singer. The latter built up a $1billion stake in Twitter, and proposing Dorsey's removal alongside Silicon
179 Valley insiders, Baroness Lane-Fox of Soho (London) and four former Google executives. This was averted in
180 early 2020 when Dorsey accepted three new board members and a return of $2 billion to Twitter shareholders.
181 It may be concluded that, recently, shares in leading 'attention capitalist' companies are in perhaps terminal
182 decline (Newton, 2018; Duke, 2020).

183

184 2.3. 'Attention Capitalism' model of spatial planning
185   Although, as we see in the next paragraph, Georg Franck's planning philosophy is very different
186 from the 'libertarianism' of the Silicon Valley 'attention capitalists' it is nevertheless relevant to get
187 some insight into the ethos and actual programme of urban planning proposed by a leading venture
188 capital investor of Facebook and co-founder (with Elon Musk) of PayPal, Peter Thiel. In May 2018,
189 the nonprofit Seasteading Institute that Thiel co-funded with Milton Friedman's grandson, Patri,
190 embarked on a pilot project with the government of French Polynesia to become the world's first
191 floating city (Venice is tethered to its lagoon floor). The group planned to build three hundred houses
192 on an island, which was to be run under its own governance and use its own cryptocurrency called
193 Varyon by 2022. Initially, the project's founders imagined the city as a libertarian utopia free of
194 regulation and taxes. The team's vision later evolved into one that the city was to be a way to live
195 with rising sea levels. Thiel was quoted in the plans as envisioning: 'Between cyberspace and outer
196 space lies the possibility of settling the oceans' living on fish. There were various proposed designs.
197 One was to feature buildings in multiple clusters along with large solar panels and wind turbines.
198 Another was to be in a horseshoe shape and would include ample green space. The project intended
199 to grow much of its food through aquaculture, involving breeding plants and fish in the sea. The

200 habitat was to be fuelled by solar power and desalinated water from the ocean. Thus 'seasteading'
201 became a symbol of the tech industry's joy at conjuring utopian, luxury, 'celebritarian' visions for the
202 future. After a pioneer seastead was towed ashore by the Thailand navy for infringing national
203 sovereignty its owner Rüdiger Koch fled the country, while bitcoin millionaire homeowner Chad
204 Elwartowski and partner fled possible arrest (Palma & Reed, 2019). Meanwhile, after sponsoring
205 Donald Trump's Presidential campaign, Peter Thiel decamped to New Zealand. It was then
206 discovered he received in 2011 citizenship of New Zealand by nefarious and possibly fraudulent
207 means, breaking normal rules of residency by reneging on a promise to promote technology
208 entrepreneurs. After a fire damaged his four-bedroom, $4.8 million home in Queenstown, New
209 Zealand, Thiel used the opportunity to convert a walk-in closet into a panic room. The German-born
210 investor is liberal in his property purchases, with homes in San Francisco, Maui, New York, and Los
211 Angeles, but New Zealand holds special significance as the location to which so many of Silicon
212 Valley's extreme liberal elite plan to retreat in the event of an apocalyptic crisis (Kosoff, 2018). This
213 confirms the old proverb 'that a town planner plans to move to the country (or in this case, the
214 wilderness)'.

215   In the final paragraph following this one on this 'Attention Capitalism' framing we shall
216 interrogate these various planning actions through the lens of 'Dark and Light Triads' analysis to
217 help our assessment of which 'disruptive' planning model, if any, is superior from a democratic,
218 inclusive and egalitarian perspective. Continuing the urban design theme, though, Franck (2018)
219 analysed the work of two architects and sometime city planners he admired, namely Karl Friedrich
220 Schinkel and Mies van der Rohe. However, his emphases are only subtly about how they drew
221 attention to their designs in built form. First, Schinkel 'solved' a problem that existed in classical
222 architecture, which as in the Parthenon in Athens, was 'what to do with the building's corners?' The
223 psychological term for the underlying issue is called 'synaesthesia' which attributes more to
224 perception than reason in explaining why some experiences are more arresting than others. Franck
225 relates this feeling to harmony residing in what he calls the 'intermodal resonance' or musical quality
226 of an aesthetic experience. Thus resonance phenomena typically appear at the edges of perception,
227 in this case, the corners. Shortening the bays (distance between end columns) is superior to
228 lengthening that distance, making the building more compact but 'muscular' (as the Greeks did).
229 Doing the opposite, Schinkel broke the classical rule with his design of the Neue Wache police station
230 in Berlin, locating the capitals of the lengthened spaces between the end columns as ledges
231 overlapping the pediment resting atop the corner columns, on which he could place 'angels' that
232 uplifted an unquestionably 'militaristic' Prussian look meant to draw suitably enlightened
233 observation. He shows that Mies van der Rohe did the same thing with his rigidly rectangular grid-
234 shaped facade of the Seagram building in New York. This did not lend itself to narrowing or
235 widening the corner grids which would violate his 'less is more' dictum'. So after a dozen years of
236 reflection Mies dispensed with the grid at the corners leaving them windowless for the whole height
237 of the Seagram.

238   So where do our exemplars reside on the 'dark' to 'light' spectrum of personality traits, 'likes'
239 and ideologies in respect of 'attention capitalism'? First we describe the two 'triads' in question, the
240 'dark triad' before the less explored 'light triad'. Psychologists concur that the profiles of dark
241 personality traits are defined, first as Narcissism, second as Machiavellianism and third, as (Sub-
242 clinical) Psychopathy (subclinical meaning not visible from a clinical test; Paulhus and Williams 2002).
243 More recently, Paulhus (2014) concluded that *callousness*, the trait of being insensitive to others, is the
244 driver for and bridge among the Dark Triad overlapping the three key personality traits. To be more
245 specific, parsed below from Prusik & Szulawski (2019), Narcissism includes an inflated ego, control-
246 freakery, exultation, vanity, and 'hubris,' being admired and acknowledged by others;
247 Machiavellianism is characterized by cynical, paranoiac, misanthropic, and immoral beliefs,
248 emotional detachment, insouciant and self-serving motives, strategic long-term planning,
249 manipulation and exploitation; while Sub-clinical Psycopathy is denoted by 'imperiousness' both
250 towards other people and social regulatory mechanisms, impulsivity, ingratitude, and a lack of guilt,
251 mortification or remorse for harming others. We have noted that 'attention capitalism' is closely

252   associated with Narcissism, particularly 'vanity' which the founders of Instagram, Systrom and
253   Krieger used and attracted others in the 'class of 2007,' (Foroohar, 2019, p. 114) notably the founder
254   of Facebook, who acquired it. But not long after, Systrom and Krieger resigned due to Zuckerberg's
255   hubris, paranoia, imperiousness and autocratic vanity which cover all three dark traits of Narcissism,
256   Machiavellianism and Psycopathy. So they joined Tristan Harris who resigned after experiencing
257   similar from Larry Page at Google. Peter Thiel is clearly paranoid in his aspiration for 'seasteading'
258   and desire to protect his $5 million sheep-station and himself from the apocalyptic herd in the wilds
259   of New Zealand's Fjordland National Park. According to the *Guardian's* Mark O'Connell (2018), Thiel
260   fears an apocalypse in the northern hemisphere, and sees New Zealand as a place where he can flee
261   from such a disaster. O'Connell reports that Thiel's favourite books are *Lord of the Rings* and *The*
262   *Sovereign Individual*, an anarcho-capitalist tract published in 1997 by William Rees-Mogg. Thus Thiel:
263   '.....is in one sense a caricature of outsized villainy.......But in another, deeper sense, he is pure symbol: less
264   a person than a shell company for a diversified portfolio of anxieties about the future, a human emblem of the
265   moral vortex at the centre of the market........ [New Zealand hedged] the eventuality of some kind of systemic
266   collapse scenario – synthetic virus breakout, rampaging AI, resource war between nuclear-armed states, so forth
267   – Thiel's plan.... was to get on a private jet and fly to his property in New Zealand. (The plan from this point,
268   you'd have to assume, was to sit out the collapse of civilisation before re-emerging to provide seed-funding for,
269   say, the…………)' (O'Connell. 2018)
270   The second of Thiel's favourite books was by *The Times* editor father of the Old Etonian M.P.
271   Jacob Rees-Mogg and as O'Connell (2018) finds it: '........ impossible to overstate the darkness and
272   extremity of the book's predictions of capitalism's future; to read it is to be continually reminded that
273   the dystopia of your darkest insomniac imaginings is almost always someone else's dream of a new
274   utopian dawn'. Thiel's obsession with Tolkien: '.... was also inseparable from a particular strand of
275   apocalyptic techno-capitalism' This 'dark' strand was captured in the art of artist Simon Denny who
276   had become fascinated with the utopian vision of the techno-libertarians of Silicon Valley and the
277   role played by New Zealand in it. First, as Rees-Mogg had advocated, and Thiel acted upon, was to
278   buy land in the country. Second, the fugitive moved to 'seasteading' in which Thiel had once invested
279   but for whom interest had subsequently waned. Third, act 'Mined the Moon' for its ores and other
280   resources, before colonising Mars, a dream shared by Thiel's former PayPal partner Elon Musk. At
281   this point our narrative stops because Musk still shares visions of space-flight, Moon-Mining and
282   colonisation of Mars but he acts on many elements of his visionary landscape, animated by concerns
283   about the sustainability of the planet that the techno-libertarians dreamed of escaping. Thus he broke
284   with those like Thiel whose causes as a Silicon Valley lobbying group called FWD.us promoted a
285   conservative agenda that was anti-Obamacare, anti-unskilled immigration, pro-Arctic oil-drilling in
286   a generally conservative and anti-environmental stance. In that respect, Musk had turned away from
287   the dark triad, some of which traits he nevertheless continues to display, and embraced more of the
288   'light triad' elements. These involve Kindliness, Humanism, and Kantianism which are equivalents
289   to: Kindliness being the belief that, generally speaking, humans are good; Humanism is the belief
290   that humans across all personalities deserve respect; while Kantianism holds that humans across all
291   personalities deserve not be treated as a means to an end. Kaufman et al's, (2019) psychological
292   testing of 1, 500 research respondents showed 'Light Triad' personalities scoring high on 'light' traits
293   tending to be older, female and have experienced less unpredictability in their childhoods. They also
294   tended to report higher levels of: religiosity, spirituality, life satisfaction, acceptance of others, belief
295   that they and others were good, compassion, empathy, openness to experience and conscientiousness.
296   Respondents who scored higher on dark triad traits were more likely to be younger, male and more
297   motivated by power, achievement, and superficial relationships. They also tended to be less
298   compassionate, agreeable, empathetic, satisfied with their lives and less likely to believe they and
299   others were good. Not surprisingly, these contrasts place 'attention capitalism' squarely in the Dark
300   Triad of psychological characteristics with pronounced traits displaying Narcissism,
301   Machiavellianism and Psychotic behaviour, as defined. This is not a good look for democratic spatial
302   planning.

303   **3. Surveillance Capitalism: Attention's 'Original Sin'**

304   In Zuboff's (2019) impressive, critical interrogation of the practices of Silicon Valley social media
305 corporate behemoths there is a relatively brief but expressive discussion and investigation of the
306 aspirations of Sidewalk Labs (a subsidiary of Alphabet, the parent company of Google) for its plan
307 for the harbourside, brownfield site of Quayside in the former docks area of Toronto, Canada. The
308 spokesman for the plan is Sidewalk CEO Dan Doctoroff, former private equity financier, CEO of
309 Bloomberg, the privately held financial, software, data, media firm, and deputy mayor of New York
310 in the Bloomberg administration. Doctoroff is a colleague of Hal Varian, Google's Chief Economist
311 who crafted the targeted advertising model that became the source of Google's billions. Varian's
312 insight was that his employers had discovered they had fortuitously fallen upon the resource of
313 essentially free and ubiquitous data. But the complimentary scarce factor would be the ability to
314 understand that data and commoditise it in the form of advertising. In Zuboff's 'The Age of
315 Surveillance Capitalism' (2019) Varian is parsed as outlining four forms of monetisation. First, data
316 extraction and analysis: this realises 'big data' as the raw material necessary for surveillance
317 capitalism to exploit at scale (which Zuboff calls surveillance capitalism's 'original sin'); second, new
318 contractual forms for enhanced contract monitoring, which meant new ways of enforcing control by
319 automatic digital monitoring of customer behaviour, like car insurance firms monitoring driver
320 behaviour and adjusting their premiums in real time; third, 'personalisation' and customisation as
321 represented in the 'personal digital assistant' (e.g. Amazon's Alexa) that extracts the 'dark data' of
322 personal identity and brings it into the light for the profit of others. As Varian mused half-a-decade
323 ago:

324   *'These digital assistants will be so useful that everyone will want one and the scare stories you read today*
325 *about privacy concerns will just seem quaint and old-fashioned. Google's can monitor your emails, searches*
326 *and locations and constantly remind you about forthcoming meetings or trips, all while patiently checking real-*
327 *time weather and traffic'(Morozov, 2015).*

328   Finally, Varian also envisioned the quest for variety through permanent innovation as crucial to
329 future profitability by 'continuous experiments' such as predictive analytics, machine learning,
330 automated mobility, Google glass, some 'failing fast...or slow' but others succeeding better.
331

332   3.1 From 'Surveillance Capitalist' to 'Smart Neighbourhood' test-bed
333   So the task of translating this ethos into an urban planning 'continuous experiment' fell to
334 Sidewalk Labs' proposed development at Quayside, Toronto though the term 'surveillance
335 capitalism' had yet to be invented but it is implicit in Doctoroff's presentation of Quayside street
336 furniture masquerading as targeted advertising:

337   *'...ubiquitous connectivity; incredible computing power including artificial intelligence and machine*
338 *learning; the ability to display data; sensing, including cameras and location data ads to people in proximity,*
339 *and then obviously over time track them through things like beacons and location services as well as their*
340 *browsing activity...' (Doctoroff, 2016).*

341   While Quayside and Sidewalk Labs can be clearly seen to be driven directly by the
342 overwhelming ambition of Alphabet/Google to make money out of the beacons, location services and
343 people-tracking, more normal public governance, albeit possibly charged with making discretionary
344 rather than democratic decisions about the substance of public design, is less overtly mercenary and
345 hopefully less addicted to "surveillance capitalism". Nevertheless, beneath the smart-tech veneer,
346 Quayside remains inescapably a property-driven machine for profit-making for itself and its clients
347 through predictive advertising exploiting surplus 'data exhaust'. As Morozov (2015), comparing the
348 real personal assistants of the rich with the then envisaged digital alternative for the normal saw it:

349   *'But something doesn't add up here: few of us expect our personal assistants to walk away with a copy of*
350 *all our letters and files in order to make a profit off them. For our virtual assistants, on the other hand, this is*
351 *the only reason they exist. In fact, we are getting shortchanged twice: first, when we surrender our data –*
352 *eventually, it   ends up on Google's balance sheet – in exchange for relatively trivial services, and, second,*
353 *when that data is then later used to customise and structure our world in a way that is neither transparent nor*
354 *desirable. (Morozov, 2015).*

355   Thus although once Google was an unprofitable search company, it is not anymore. Rather they
356   are what Weinberg (2020) refers to as a 'tracking' company. All Doctoroff's (2016) data points allow
357   Google to build a robust profile of a consumer's personalised identity. He continues that by keeping
358   such a close guard on everything thus personalised, Google may know the person better than she
359   knows herself! The result of all that tracking is that Google uses your personal profile to sell targeted
360   advertisements, not only on their search engine, but also on over three million other websites and
361   apps. Every time a person visits one of these sites or apps, Google is stalking her with hyper-targeted
362   ads, trying to influence her behaviour and exploit it. By allowing Google to collect such information,
363   users are allowing hundreds of thousands of advertisers to bid on serving the user advertisements
364   based on sensitive personal data. Everyone involved is profiting from user information, except the
365   user. Echoing Marshall McLuhan's 'The medium is the message,' for the contemporary era: 'The user
366   is the product'.

367   Surveillance capitalism's first foray into localised urban planning began next to Google
368   headquarters in Mountain View, in the heart of Silicon Valley, from 2017. It was designed jointly by
369   'starchitects' Heatherwick Studio and Bjarke Ingels Group (BIG) designers of New York City's World Trade
370   Centre, 'Courtscraper' and 'Spiral' towers. Having cut its teeth on the 'smart annexe' to Googleplex, the
371   company's design affiliate under the Alphabet parent firm, Sidewalk Labs, announced an ambitious
372   'smart neighbourhood,' known as Quayside, in Toronto. The scheme had faced widespread critique
373   since late 2017, when Sidewalk Labs' plan to fashion a neighbourhood 'from the internet up' was first
374   revealed. For example, the following summarises the concerns of informed digital business journalist
375   and founder of BlackBerry, Jim Balsillie:

376   *'Smart cities' rely on IP and data to make their vast array of city sensors more functionally valuable, and*
377   *when under the control of private interests, an enormous new profit pool. As Sidewalk Labs' chief executive*
378   *Dan Doctoroff said: 'We're in this business to make money.' Sidewalk also wants full autonomy from city*
379   *regulations so it can build without constraint' (Balsillie, 2018).*

380   Other criticisms revealed suspicions about turning part of Toronto into a corporate test bed.
381   These were alerted, at first, by the company's history of unethical corporate activities like censoring
382   Google's messaging in China by feeding location, mobility and other positioning data to the Chinese
383   government and illegally tracking movements of Android and iPhone users even when they
384   implement privacy settings to prevent such data harvesting.

385   Nevertheless Quayside is the joint effort by the Canadian government agency Waterfront
386   Toronto and Sidewalk Labs to develop 12 acres of valuable waterfront in the near southeast of
387   downtown Toronto. In April 2019, the appointed (i.e. unelected) managing board of Waterfront
388   Toronto made interim recommendations which led Sidewalk Labs boss Dan Doctoroff to welcome
389   the determination: 'We want to be a partner with Waterfront Toronto and governments to build an
390   innovative and inclusive neighbourhood'.

391   It means Sidewalk Labs will continue to develop its proposal, along with Waterfront Toronto's
392   evaluation of the project after inviting further input from the public. Waterfront Toronto's board
393   would then make a final decision on 31 March 2020. Among new stipulations are restrictions on
394   Sidewalk Labs' ability to collect data in Quayside. 'After two years in Toronto and engaging and
395   planning with over 21,000 Toronto residents, we are looking forward to the next round of public
396   consultations, entering the evaluation process, and continuing to develop a plan to build the most
397   innovative neighbourhood in the world,' Doctoroff added. Sidewalk's preference was to establish with the
398   agreement of the partners an Urban Data Trust. The agency disallowed such unelected data-collection to
399   inform neighbourhood design and resident activities. Even Sidewalk's promise to anonymise and bar the use
400   of data for advertising or to be used by other Alphabet companies cut no ice with Waterfront Toronto. Their
401   determination was for the team to follow existing and future privacy legislation, regulations and policy
402   frameworks of the Canadian government. Thus Waterfront Toronto will manage the data collection
403   and be responsible for proposing any amendments to the City of Toronto. In a major climb-down
404   accepting this:

405   *'Sidewalk Labs agrees to work with Waterfront Toronto and governments to ensure proposed solutions do*
406   *not impede accessibility, freedom of association, freedom of expression, equitable treatment of marginalised*
407   *groups, and public engagement' (Waterfront Toronto, 2019).*

408   The specific condition that had so exercised the agency into curtailing Sidewalk Labs' and CEO
409 Dan Doctoroff's ambitions was as follows: Sidewalk Labs had proposed the up-front creation of an
410 IDEA (Innovative Design and Economic Acceleration) district covering a much greater area (190 acres)
411 than Quayside's trifling12 acres. Sidewalk Labs was told this was 'premature' and the agency needed
412 to see goals achieved for Quayside before collaborating on other schemes: government 'performance
413 payments' to Sidewalk Labs depend on this. Even then, the City of Toronto would need to be
414 supportive especially as it owned the development land in question. Toronto's freezing winters had
415 been dubbed 'colder than Mars'; Sauter, (2018) but Sidewalk Labs designer Rohit Aggarwala,
416 articulating Google's mantra of 'continuous experiments' referred to installing 'building raincoats'
417 to protect Quayside's timber architecture, also designed by Thomas Heatherwick, from harsh winter
418 weather. Further, folding door 'fanshells' that, contrastingly, open up the building frontages,
419 curbless street design, wider sidewalks, wayfinding beacons and heated pavements were other
420 novelties. Questions of sustainability and practicality were issues of controversy for the 'Block
421 Sidewalk' protest movement that sought to stop the proposal to use a 'tech company' to develop a
422 neighbourhood (Gibson, 2019b). This led to the prospectus adjustment promising to use a central
423 square flexibly to house occasional public installation art with a side-square 'sculpture garden'
424 (Shapins & Di Mascio, 2019). But as shown, some Google 'innovations' have the propensity of 'fast
425 failure' not anticipated by Heatherwick Studio's computer graphics. By May 2020 the decision had
426 been reached by Sidewalk Labs' CEO Doctoroff to pull the plug on what former digital entrepreneur Jim
427 Balsillie called Google's 'defanged and mangled mess' (Hackett, 2020). Even if the excuse of economic
428 shutdown related to the Coronavirus pandemic provided the final blow, the writing was on the wall for the
429 project well beforehand.
430
431   3.2 From Ubiquitous Computing to the Disappearing Internet
432   Ubiquitous computing is both the mantra and the intention of surveillance capitalism after
433 Zuboff (2019) but as we have seen the overwhelming ambition of Alphabet to make money out of the
434 beacons, location services and people-tracking has for the moment been somewhat thwarted. City
435 and agency stipulations against articulating techno-terms like 'Urban Data' to mystify
436 neighbourhood users and anticipating infringements of Canadian data privacy laws have 'curbed'
437 Sidewalk's ambitions. Eric Schmidt, Google's CEO has implied that they have 'nothing to hide,' so they
438 are not concerned with the amount of information Google has collected and stored on them, but that
439 argument is fundamentally flawed. Everyone has information they want to keep private: keeping curtains
440 drawn in the dark; covering up in the bathroom, are not perverted actions. Normal personalities express a
441 desire for protection from the hands and eyes of everyone, and absolutely reject people profiting from their
442 identities without their consent or participation. Privacy is essential to democratic institutions like voting and
443 everyday situations such as getting medical care and performing financial transactions. But Google CEO
444 Schmidt at the 2015 Davos World Economic Forum showed his abnormal personality with the following
445 remarks in answer to the future of the Internet:
446   *'I will answer very simply that the Internet will disappear. There will be so many IP addresses…so many*
447 *devices, sensors, things that you are wearing, things that you are interacting with that you won't even sense*
448 *it," he explained. "It will be part of your presence all the time. Imagine you walk into a room, and the room is*
449 *dynamic. And with your permission and all of that, you are interacting with the things going on in the room'*
450 *(Szalai, 2015).*
451   His quote was indebted and ingratiated to both Hal Varian and even earlier to Mark Weiser
452 (1991) and indirectly Mark Zuckerberg. Weiser famously wrote an influential article that many data
453 farmers treated as their secret manifesto:
454   *'The most profound technologies are those that disappear. They weave themselves into the fabric of*
455 *everyday life until they are indistinguishable from it... (and)... that allows the computers themselves to vanish*
456 *into the background... (to)...fit the human environment instead of forcing humans to enter theirs....' (Weiser,*
457 *1991).*
458   So Schmidt had Weiser's insight at the forefront of his mind while publicly expressing the
459 following responses to questions about Google's trustworthiness regarding 'privacy':

460   *'... should users be sharing information with Google as if it were a "trusted friend?" Schmidt responded,*
461   'If you have something that you don't want anyone to know, maybe you shouldn't be doing it in the
462   first place' (Matyszczyk, 2015).
463   Inspired by an earlier data farmer, Scott McNealey, founder of Sun Microsystems a workstation
464   manufacturer, of which Eric Schmidt was previously CEO, had opined:
465   *"You have zero privacy anyway." Sun Microsystems chief executive McNealey famously said in 1999.*
466   *"Get over it." (Popkin, 2010).*
467   In the surveillance capitalism echo-chamber, Facebook's Mark Zuckerberg concurred with two
468   public quotes to the effect that:
469   *'.........none of the cool kids care about privacy. Neither should you' (Popkin, 2010).*
470   and
471   *'People have really gotten comfortable not only sharing more information and different kinds, but more*
472   *openly and with more people. That social norm is just something that's evolved over time' (Johnson, 2010).*
473   At the individual identity or personality level, lack of privacy leads to placing people into a filter
474   bubble, becoming manipulated (Machiavellian not Kantian) by advertisements, experiencing
475   discrimination, fraud, and identity theft by 'dark triad' denizens. On a societal level, it can lead to
476   deepened polarization and societal manipulation (Psychotic) of the kind that 'surveillance capitalism'
477   critics have seen multiplying in recent years. These are shadowy visions of classic 'dark
478   entrepreneurship'
479   By late February 2020, Waterfront Toronto in their technical evaluation of Sidewalk Labs' master
480   plan gave contingent approval to ninety-two 'solutions' that Waterfront Toronto said it would
481   support provided all funding and delivery was handled by the private sector. However it rejected
482   outright sixteen of its proposals such as undersized flats and a shrunken yet fluid use-classes building
483   code. The building 'raincoat', 'fanshell' and 'lantern forest' wind protector innovations were shot
484   down, 'exciting Sidewalk Labs to keep looking for solutions for outdoor comfort in our building
485   designs at Quayside' as a spokesperson responded to these disappointments. Sidewalk's most
486   complex proposal was for an advanced power grid, thermal grid, waste management system and
487   stormwater management system but it too was rejected on feasibility grounds, except for the thermal
488   grid. A further twenty-four elements were halted subject to future funding by the Canadian
489   government, while seventeen were dependent on future policy and regulatory changes by
490   government. The approved measures include mass timber buildings, solar-panel and/or vegetation-
491   covered rooftops, electric vehicle (EV) ownership incentives and charging infrastructure, smart waste
492   chutes and the thermal grid (Summers, 2020). Without the profits from any as-yet-to-be-invented new
493   business model it is hard to see a glowing beacon for Quayside's 'smart neighbourhood'. A $13
494   billion splurge announced in 2019 on property development in low-cost locations suitable for
495   building huge data centres to support cloud computing requirements may be a signpost of the
496   company's next step as it seeks to keep up with Amazon's supremacy in that market (Fazzini, 2019).
497   Accordingly, with a few elements that may in the long-term future make Californian-style living
498   more suitable to 'Life on Mars' the conclusion after the 'progress' thus far of Sidewalk Labs
499   'surveillance capitalism's solutions' to super-smart, semi-green urban planning mean the
500   adjudicating jury must probably remain out while improved evidence for 'outdoor comfort' and a
501   new business model are subjected to 'continuous experiment'.

4. Sustainability Capitalism and the Practical Engineering of Productive Plans

503   Although it was noted earlier that Peter Thiel and Elon Musk were co-founders of PayPal, Musk
504   broke with them because he was unhappy with the business journalism nickname, the 'PayPal Mafia'.
505   These included Thiel (co-founder of PayPal and Palantir), Max Levchin (co-founder at PayPal), Steve
506   Chen, Jawed Karim and Chad Hurley (co-founders of You Tube), Reid Hoffman, (founder of
507   LinkedIn), David Sacks (founder of Yammer) and Jeremy Stoppelman (founder of Yelp). The PayPal
508   Mafia is occasionally credited with inspiring the re-emergence of consumer-focused Internet
509   companies after the dot-com bust of 2000 as discussed in Lacy (2008). According to Lacy, the selection
510   process and technical learning at PayPal played a role, but the main factor behind their future success

511 was the confidence they gained from the physical, cultural, and economic infrastructure of Silicon
512 Valley and their diverse networking skillsets. PayPal's founders encouraged tight networking among
513 its employees, and many of them continued to rely on and trust their networks after leaving PayPal.
514 Many of them went on to found technology firms such as LinkedIn, Palantir, YouTube, Yelp, and
515 Yammer, as well as Musk's firms at the time - Tesla Motors and SpaceX. By now Musk's roll-call of
516 firms also includes his early founding of X.com which acquired the company Confinity. This became
517 PayPal which was eventually acquired by eBay. Musk later re-acquired X.com in 2017. He also
518 founded or co-founded Tesla Motors, SpaceX, Neuralink (healthcare), OpenAI (artificial intelligence),
519 The Boring Company (tunneling), and he is also the Chairman of SolarCity (solar energy and battery
520 storage). Most of the members attended Stanford University or the University of Illinois Urbana-
521 Champaign.

522   4.1 Musk Breaks Free from Extreme Libertarianism

523   Musk's separation from the extreme libertarianism of many of these 'attention capitalists' is
524 grounded. According to Hammerbacher (2017) a former Facebook engineer: 'The best minds of our
525 generation are thinking about how to make people click ads' a sentiment with which he reports Musk
526 agrees with him, saying 'I think there are probably too many smart people pursuing internet stuff,
527 finance, and law. That is part of the reason we haven't seen that much innovation.' The deeper point
528 here, the correspondent infers, is that Musk is not seeking small incremental or adaptive innovations
529 but is always in pursuit of his larger purpose. So what is Musk's guiding ethos and larger purpose of
530 which he is in pursuit?

531   Even as he learned computing as a child the aim of the Blastar computer game he created and
532 sold was crafted to save the world from an alien space freighter. In university, he wrote papers
533 detailing his plans for sustainable energy to try to ensure that civilization could continue to progress.
534 As a successful entrepreneur he was working to create a system of interconnected companies to help
535 'our species in the short term as well as in the long term'. (Musk quoted in Hammerbacher, 2017). He
536 also discussed at length Tesla, its platform interests, and the need for our species to wean itself off
537 fossil fuels. He further criticised the mass displacement of carbon from the ground to the atmosphere,
538 and ultimately into the oceans, as an incredibly dangerous experiment whose ultimate outcome is
539 unknown. In interview, he said: 'We should not do this. We know that sustainable energy is the end
540 point. So why are we doing this experiment? It's an insane experiment. It's the dumbest experiment
541 in human history'. Thus in a few words Musk's strong sustainability ethos is clear as a moment's
542 perusal reveals of his business platform of solar panels, lithium batteries, solar roof tiles and storage
543 systems (Megapacks), electric vehicles, artificial intelligence and healthcare (Neuralink) bionics and
544 robotics, and SpaceX which profits from government and corporate satellite positioning rocketry and
545 payloads.

546   Our interest is in what the 'orchestrator' of these enterprises, presenting a clean technology
547 platform aimed at saving the 'species' through sustainable spatial development has realised in terms
548 of potentially influential urban and regional planning accomplishments. Is it superior to the 'smart
549 surveillance' model expressed in Sidewalk Labs' Quayside in Toronto, Canada or as prescient as Peter
550 Thiel's otherwise extreme libertarian 'seasteading' or 'sheep station' retreat from a potential viral
551 pandemic while awaiting discovery of an exact antiviral vaccine? Importantly, Musk's
552 thoroughgoing aspiration to implement sustainable development – which frequently disappoints in
553 practice – has been shown to work repeatedly, on an inter-regional scale and encompassing inter-
554 continental, global network relations that energise the results. Threats to the species (i.e. human and
555 natural life) animate at each level of his 'sustainable capitalist' model. We can start the narrative at
556 the individual patient or experimental subject level by illuminating the work of Neuralink, a medical
557 research firm based in San Francisco's Mission District in the historic Pioneer Building shared with
558 OpenAI, a complementary Musk enterprise. Like other of his interests, it was stimulated by a science
559 fiction concept, namely 'neural lace' from The Culture, a series of novels by Iain M. Banks. The
560 Matrix-style 'neural lace' is defined as a digital layer above the cortex that would connect through an
561 implant via a vein or artery in a 'symbiote'. The long-term goal of this procedure is to achieve human
562 symbiosis with artificial intelligence, which Musk sees as an existential threat to humanity if it goes

563 unchecked. Currently such neurobionics can enable disabled people to activate their limbs. Musk's
564 intention is that customised software implants would interface with brain signals at fast broadband
565 speed. The company received $65 million DARPA research grant and sponsors animal testing
566 research in collaboration with scientists at the University of California, Davis National Primate
567 Research Centre. Animal testing for products is banned only for cosmetic products in California since
568 January 1, 2020. Musk justified this arguing the best outcome of the human-AI relationship would be
569 where 'we are the AI' rather than an 'evil dictator AI' being in charge.
570
571   4.2 Effective Altruism Faces Messy Reality
572   Messy reality characterises the reputation of OpenAI which became one of the leading AI
573 research labs alongside the likes of Google's DeepMind for prominent research advances.
574   Its mission is to be the first to create artificial general intelligence (AGI)—an algorithm with the
575 deep learning and reasoning powers of a human mind. The dangers of the 'evil dictator' trauma mean
576 AGI could be catastrophic without the benevolent guidance that Musk believes to be vital. OpenAI's
577 prospectus emphasises it will 'build value for everyone rather than shareholders', vowing its
578 'primary fiduciary duty is to humanity' and if lagging a competitor, it would 'would stop competing
579 with it and collaborate instead' leading in 2019 to Microsoft injecting OpenAI with a new research
580 investment of $1 billion (Hao, 2020). Not surprisingly, OpenAI's image and reality have become
581 misaligned as it has evolved a culture of fierce competitiveness and mounting pressure for ever more
582 funding to erode its founding ideals of transparency, openness, and collaboration. Rather, it became
583 obsessed with maintaining secrecy, protecting its image, and retaining the loyalty of its employees.
584   Efforts to correct the over-commercial ethos misalignment came too late for Musk who played a
585 large part in building OpenAI's collective mythology, when he announced he was in 2019 departing
586 the company over disagreements about its direction, though tellingly co-founder Peter Thiel did not.
587 Nevertheless OpenAI recognised its competitors now outranked them prodigiously and they had to
588 cease being a nonprofit business and re-charter as a 'capped profit' public entity. Thereafter the
589 investment was made, actually in the form of cash and credits split between Microsoft and its cloud
590 computing platform Azure.
591   The company rejects claims from critics that this deal is an unholy compromise expressed in
592 their vacillation between naiveté and hypocrisy. This paradox led to accusations of wanting and
593 eating the cake, of wanting a flattened organisational hierarchy not to unduly concentrate power. But
594 what of 'the competition', notably Google that was strengthening its corporate structure by
595 internalising DeepMind and relocating it from London to Boston? How would these incompatibles
596 work? What exactly is power, if not the concentration of resources? Re-thinking the company ethos
597 as a form of 'effective altruism' met eventual agreement among OpenAI's staff. Simultaneously,
598 OpenAI developed a new algorithm that received global publicity. It could extrude fake news at the
599 press of a button, which in the wrong hands could be weaponised. There are two AGI models: one is
600 what can be called a 'portfolio' effect where sufficient techniques already exist and they mainly need
601 assembling and scaling; the other can be called the 'proximity' effect, needing a new paradigm
602 somewhere beyond deep learning. OpenAI's success has come from throwing big data analytics at
603 the technical portfolio developed at other research labs. This strategy was secretive because while
604 OpenAI needed 'attention' for reputation, it has also to be modestly careful and secretive regarding
605 its 'competitive advantage' which is also its reputation for competence and security. OpenAI's
606 priority task, present mission and primary aim is to collapse the portfolio and proximity models into
607 one super-synthesis. A currently secondary project that will eventually rise to prominence is on how
608 to make such advancing AGI systems safe for human utilisation. Thus the 'dark triad' elements of
609 Narcissism and a little Machiavellianism are countered in corporate strategy debates by attempts at,
610 if not 'saintliness,' then at least 'light triad' ethical and moral sensibility to the contradictions of
611 humanism in a callous world.
612
613
614   4.3 The Logistically Efficient Underlying Model of Sustainable Capitalism

615   We move on next to three more concrete paradoxes of saintliness in a narcissistic world by
616 reference to two manifestations of Musk/Tesla's 'sustainable capitalism' investments in renewable
617 energy buildings, infrastructure, and mobility. Accounts of Tesla's design and construction of its
618 lithium-ion battery production system reveals in its 'pattern recognition' of spatial deep structures
619 can be revealed more simply than some of Musk's science fiction inspirational learning. Some of the
620 dilemmas in these processes are revealed in his address to Tesla workers about to be made
621 temporarily redundant owing to the hesitant early performance of manufacturing the popular Tesla
622 model 3 at the Fremont assembly plant:
623   *'There are many companies that can offer a better work-life balance, because they are larger and more*
624 *mature or in industries that are not so voraciously competitive. Attempting to build affordable clean energy*
625 *products at scale necessarily   requires extreme effort and relentless creativity, but succeeding in our*
626 *mission is essential to ensure that the future is good, so we must do everything we can to advance the cause'*
627 *(Musk, 2019).*
628   Some critics see Machiavellian intent in this injunction to an arguably exhausted workforce to
629 think of the higher purpose those to be made redundant were leaving behind, though they would be
630 re-hired when Tesla's manufacturing problems died down. One even deemed his address as
631 displaying what Musk implied with these words is an example of what is known as the 'dark side'
632 of emotional intelligence.
633   We can see the concrete evidence of the contribution of the Tesla subsidiary Solar City that
634 manufactures lithium-ion batteries (LIB) for solar roof tiles and utilises Powerpack solar storage
635 megapacks both for individual renewable energy customers and at community scale by reference to
636 the achievements and design arrangements of these facilities. First, Solar City was built on brownfield
637 urban land at the former Republic Steel plant at Buffalo, New York State. Located at RiverBend, vacated
638 in 1982 following the firm's acquisition and transfer toMonterrey, Mexico the site was transformed with New
639 York State's 'Buffalo Billion.' This was 'rustbelt reconversion' aid earmarked for development of a clean energy
640 business incubation centre and funded with $225 million of the 'Buffalo Billion' in 2013-4. New York State
641 bought the plot, which was ultimately leased to Tesla, in partnership with Panasonic, for its SolarCity
642 Gigafactory (2) which opened in 2017. Tesla's new plans meant abandoning the clean energy business
643 incubation centre design in favour of the construction of a 1.2 million sq. ft. factory. With a promise of 3.000
644 jobs and 5.000 state-wide, the administration increased aids to $750 million. Later, at the end of 2019, state
645 officials further wrote down more than $800 million in economic development aids made to Tesla. The plant
646 was earmarked to produce Tesla solar roof tiles rather than car batteries but at relatively low volumes. These
647 were planned to increase substantially to 1,000 roof systems per week by the end of 2019. Despite good rail
648 and road logistics distribution to the housing market has been hampered by attention having been diverted
649 towards the Tesla 3 model's manufacturing problems, now seemingly resolved. Tesla roof tiles are made of
650 textured glass with solar cells hidden inside. Production with joint venture partner Panasonic has been
651 slow. A key problem for Tesla's production process was researching the 'solar-sandwich' process. Accordingly,
652 Tesla struggled with low yield rates, meaning at times scrapping 70 percent of production. Investors,
653 customers and the community's expectations of a reasonable return on the state's investment in terms of
654 jobs, returns from tax outlays, green energy factory footprint and local multiplier effects were all more or less
655 subject to degrees of disappointment.

656

657 **Figure 1.** Tesla and Pacific Gas & Electricity Solar & Wind Energy Storage Megapacks at Monterey,
658 California. Source: Tesla

659   Moving to the energy storage business Tesla's first solar and wind energy farm was only
660 achieved in 2020. The cylindrical Powerpack battery packs are assembled again jointly with
661 Panasonic at Tesla's Gigafactory (1) in Reno, Nevada. Permission has already been granted for
662 construction of 1 GWh of Megapacks to create a massive energy storage system at Monterey,
663 California for energy utility Pacific Gas & Electricity as a further indicator of established intent to
664 store wind and solar power sustainably. Another Megapack is the 129 megawatt-hour (MWh)
665 Hornsdale Power Reserve battery in South Australia, which was installed in 2018. It saved $5.7
666 million in its second quarter of operation based on only the 30 megawatts (MW) of capacity it is
667 trading, delivering a gross margin of $8.9 million. We can conduct pattern recognition of Tesla's
668 deeper structures in the following: brownfield or desert Gigafactory locations, substantial economic
669 development aids, direct highway and rail links, significant business partnerships, experimentation
670 and innovation, substantial job creation, urban labour access, sustainable economic development
671 delivery.

672   Such pattern recognition features are underlined further in regard to the locational analysis for
673 Gigafactories (1, 3 and 4) at Reno, Shanghai and Berlin respectively. These follow sustainable
674 manufacturing design first implemented at Tesla's first, smaller 'megafactory' at Tilburg, the
675 Netherlands. Built in 2013, it is intentionally located next to advantageous infrastructure. This includes
676 alignment with the Wilhelmina canal linking intermodal container barges with the Port of Rotterdam and the
677 high quality and availability of transportation infrastructure. An excellent rail and motorway network connects
678 Tilburg to all major electrical vehicle (EV) markets meaning parts can be distributed to anywhere across the
679 continent within 12 hours. If we move to Gigafactory (1) at Reno, the Union Pacific Railroad (UPR)
680 transcontinental railway runs through the Tesla axis of production and assembly which includes suppliers in
681 Michigan and Ontario, the Nevada LIB plant and a variety of Tesla EV manufacturing clusters along the UPR at
682 brownfield assembly and supplier facilities and distribution centres at Livermore, Lathrop and Fremont in
683 California. Fremont is the main assembly location. Here Tesla influence is shown in its main site, which is a
684 recycled automotive assembly factory, site of the former GM-Toyota joint venture intended to enhance
685 American automotive assembly by learning Japanese production techniques while techniques while also
686 assisting the transfer of small car design competence. The New United Motor Manufacturing Inc. (NUMMI)
687 plant opened on an old 370 acre GM site in 1984 some twenty-two years after GM built it. In 2010 Tesla took
688 possession of the site that GM had auctioned to Toyota on dissolution of the NUMMI partnership in 2010. The
689 urban planning implementation followed production as elsewhere.

690   Thus in Warm Springs, a suburb of Fremont, on old UPR railyards a new 'innovation district'
691 featuring a 'Tesla campus' with an advanced manufacturing plant, an 'innovation cultivator' for technology
692 start-ups in cleantech, life sciences and advanced manufacturing, on 850 acres of former railyards at Warm
693 Springs, Fremont, centrepiece of a new Bay Area Rapid Transit (BART) interchange.

694   Surrounding these are three thousand new dwellings, offices, a variety of related plants and
695 retail outlets with a target of 40,000 employees. The key planning facilitator for this scheme is the Fremont

696 Economic Development Agency with urban developer Lennar, which stresses a Smart-Sustainable
697 combination but without the Sidewalk Labs digital hype. Rather, public transport access for workers and
698 freight is pronounced. Its developer's guide demands at least one publicly accessible urban plaza per planned
699 housing scheme; such plazas to be linked by streets or pathways that include dedicated bike lanes; areas near
700 rapid transit to be built to a density of 50 housing units per acre, allowing higher density according to demand;
701 and limited high rise buildings. The Shanghai and Berlin Gigafactories (3 and 4) emulate the goods and
702 employee infrastructural, brownfield, urban labour density, economic development assistance and loan
703 facilities with heavy AI robotics investment and what some critics see as an over-worked labour force that has
704 been incrementally responded to by industrial injuries medical services and hospitalisation. Despite the
705 website graphics, showing uniform rooftop solar paneling at some Gigafactories to be 'greenwash' rather than
706 installed, Musk's speedy achievement of spatially sensitive and sustainable development is aeons more
707 enlightened than the extreme libertarianism of his erstwhile free marketeer models of comfortable urban
708 living for the many not the few.

709 **5. Discussion and Conclusions**

710   It is not too difficult to identify occupants of the 'dark triad' of personality traits in all three of
711 these accounts of disruptive models of socio-political, economic and urban planning life. The
712 question is to what extent can any of them approach the 'light triad' more clearly than the rest?
713 'Attention capitalism' as an extreme form of libertarian insouciance, solipsism, 'celebrification' and
714 indeed, imperiousness. It is unquestionably the most socially unattractive, exclusive and belittling in
715 its Narcissistic complacency. Readers will recall this entails inflated ego, control-freakery, exultation,
716 vanity, and 'hubris' towards personal luxury and wealth compared to more normal forms of
717 everyday life. So much so that many of its vanity-driven early disciples have rejected it and critiqued
718 the Persuasive Technology Lab that spawned it as a social media and cultural form more generally.
719 Having dismissed this 'attention'-led vision of the egotistic utopia for the elite as wholly impractical
720 in legislative rule-governed and democratic settings, we turn briefly to discuss the disruptive vision
721 of 'Surveillance Capitalism' which is closely associated with Alphabet, the parent of Google and
722 affiliate of both, in the shape of Sidewalk Labs, the in-house corporate urban planning business. As
723 Sidewalk's CEO Dan Doctoroff has stated, the firm is fundamentally in the business of seeking to
724 'make money' over other possibly nobler aspirations such as mitigating uneven development,
725 reducing social polarisation or self-regulating its appetite for identity-theft.
726   We showed that Quayside, Toronto is clearly a forerunner of a totalising formula for deeply
727 embedding identity-theft and exploitation as ubiquitous and unavoidable advertising. We showed
728 that targeted advertising is the distinctive form that 'Surveillance Capitalism' takes under the guise
729 of 'friendly connectivity' (notably Facebook). It is callous, as 'Dark Triad' psychology predicts and
730 predominantly representative of the Machiavellian 'dark entrepreneurial' trait in particular. Readers
731 will recall that Machiavellianism is characterised by cynicism, paranoia, misanthropy, and immoral
732 beliefs such as promoting social abuse of many kinds, polluting the airwaves and dissemination of
733 'fake' information or lies; it displays emotional detachment; insouciant and self-serving motives; and
734 strategic long-term planning through manipulation and exploitation. Sidewalk Labs scatters Google's
735 distorted business model of targeted enterprise under a motto (recently altered from 'Don't Be Evil'
736 to the more neoliberal 'Do The Right Thing') to try to disguise its ludicrous imperiousness. While we
737 have utilised a form of narrative interrogation termed 'pattern recognition' of which the Dark Triad
738 of corporate 'personality traits' is pronounced in Google as the apotheosis of 'Surveillance Capitalism,'
739 its DNA as a 'surveillance' parasite persists in its 'continuous experiments'. Thus, where Tesla
740 constructs EVs including Models X, Y, 3, Semi-truck (articulated), Truck and Roadster on the
741 vehicle side and Powerwall/pack and Solar Roof on the energy side, Google's contribution to
742 EVs is surveillance lidar (light detecting and ranging) for Waymo, Google/Alphabet's autonomous
743 taxi project, for seeing around blind spots and road signs at 500 metres based on a 3D GoogleMap.
744 Its current main customer is Jaguar's I-Pace EV SUV of which 20,000 were bought by Waymo as
745 potential taxis for suburban service in Phoenix, Arizona (Knowles, 2020a). Not satisfied with
746 mapping the planet, surveilling users' search habits and servicing billions of mobile telephones via

747 Android, another 'innovation' is emerging from Google's Department X 'continuous experimentation'
748 unit. The new 'Tidal' project is to conduct surveillance of thousands of fish, observing individual fish
749 habits and behaviour. It is initially aimed at aquaculture, but it requires little imagination to envisage
750 Tidal tracking the large deep-sea shoals of interest, notably endangered marine life like whales and
751 penguins, but also approved species, for industrial fish-factories in remoter ocean areas (Knowles,
752 2020b).
753 So now we come to the third disruptor, Elon Musk and his energetic pursuit of enhanced human
754 'symbiotes' meaning the symbiosis of the human brain with artificial intelligence, which he sees as
755 an existential threat to humanity; and sustainable engineering and construction which, through
756 battery-driven EVs and renewable energy storage batteries and solar roofs are aimed at fulfilling his
757 long-time vision of helping save the species from global warming and climate change. While there
758 are 'dark entrepreneurial' traits in Musk and Tesla's practices, including 'greenwashing' the roof
759 imagery of his Gigafactory (1) in Nevada (and instead buying cheap nuclear power from the Nevada
760 grid), making over-ambitious promises that could not always be fulfilled to investors, harrowing
761 Japanese battery and EV joint venture partners Panasonic and Toyota to suffer or break alliances with
762 them, and freezing out by acquiring Mercedes' single-source supplier of battery 'separator' robotic
763 technology(Tesla Grohmann Technology) causing the founder to resign and gaining 'competitive
764 advantage' over a rival, many 'light entrepreneurs' might even consider making such 'tough business
765 decisions' normal practice. It is difficult not to conclude that, in general, the ethos of Tesla and Solar
766 City and conceivably SpaceX are, on balance, 'Sustainability' inspired. In brief, even SpaceX, which
767 was inspired by Musk's early enthusiasm to live on Mars, has mutated into a highly profitable
768 satellite shuttle for NASA and the vision of 'Mining the Moon' and putting the world's polluting
769 industry up there to clean Earth's atmosphere. Regarding the design process by which Musk's
770 Gigafactories and related EV manufacturing logistics connections with subway, rail and highway
771 haulage (eventually driven by semi-truck EVs) are an exemplary model of integrated working and
772 living, ideally sheltered by sustainable solar roofs and solar-wind battery storage systems already
773 being offered by battery-maker Duracell for individual not yet collective service, point to a benign
774 disruption, totally unlike the contemporary depredations being inflicted by neoliberalism on a
775 suffering planet.

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