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Curating smart cities

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ABSTRACT

In this paper, a curatorial perspective is developed to draw attention to the notion that smart cities are assembled within a field of relations and thus inevitably connected to constellations of actors, histories, materialities and ideas. In this way, a curatorial perspective informed by diverse disciplines such as art history, critical theory and institutional critique, can be used to reveal the struggles through which fragmented, entangled and shifting constellations of technologies, places and policy ideas are purposely cultivated to prefigure new ways of living in smart cities. Drawing on an in-depth longitudinal case study of Milton Keynes (MK), an English new town founded in 1967, this paper examines how concepts of a smart city were used to draw together, catalyze and possibly (re)configure pre-existing policies, narratives and materialities, i.e. to curate smart city developments. Urban curation, understood as the selection, organization and care for a constellation of elements and their relation to place, is revealed to be profoundly political. Actors with local remits curate urban constellations to render them receptive to smart city agendas while pursuing their contextually defined goals and often resisting those imposed from elsewhere.

Introduction

In this article we examine smart cities through the lens of curation, broadly defined as care for the interrelations amongst objects and for the meanings generated through their dialogues with each other as well as with various publics (Obrist, 2014). A curatorial approach is applied to smart cities to reveal how powerful narratives about smart urban futures are anchored in the materialities and heterogeneous constellations (of actors, places, policies and technologies) that constitute the urban. The curatorial perspective is grounded in ongoing debates concerning the impact of storytelling as a site of political struggle in smart cities (Haarstad, 2017; Joss et al., 2017; Söderström et al., 2014). Although a near-hegemonic impact is often attributed to smart city narratives (Calzada, 2018; Haarstad, 2016; Sareen & Rommetveit, 2019), we argue that cities are not passive recipients of smart discourses, technologies and practices “pushed” into their cities from remote elsewhere. Urban actors with local remits engage in what can...
be usefully described as collaborative storytelling to become co-creators of actually existing smart cities, reshaping circulating ideas and recontextualizing smart technologies in order to “arrive at” distinctive responses to their contextually defined goals. Here, the materiality of the city itself can be storied in different ways to make it selectively receptive or refractory to various smart urban futures. To this end, actors with local remits selectively foreground specific elements from the urban constellation and background others – that is, they curate the smart city.

The stories through which cities are rendered selectively receptive or refractory to various smart urban futures are profoundly political. The smart city is often storied as an uncontroversial “sustainability fix” – a technocratic endeavour which helps respond to pressing problems and contradictions within the environment-economy relationship at the urban scale (Martin et al., 2019; Temenos & McCann, 2012). Such stories are central to the smart city movement (Sadowski & Bendor, 2019; Söderström et al., 2014) and are turned to persuasive purposes, solving, deferring or redirecting conflicts between local actors and largely external economic interests. The smart sustainability fix therefore circumvents to a significant degree the contentious politics inherent to planning and democracy in general, with smart city politics predominantly playing out through processes of persuasion, consensus building, teaching and learning (Martin et al., 2019). Thus smart cities almost inevitably become entangled in shifting extra-local networks and identities that make the job of place-based urban governance more complex (Cowley et al., 2018; Luque-Ayala & Marvin, 2015). Such entanglements as well as the tensions and conflicts arising from them matter because smart and sustainable urban technologies shape practices and policies, prefiguring new ways of living in the city. “Smart” is a way of seeing and (re)configuring the places and relationships that constitute the urban, including “smart” policymaking, the design and marketing of “smart” products and efforts to foster “smart” behaviors by “smart citizens” who are conceptualized sometimes as users and sometimes as co-creators of their city (Cardullo & Kitchin, 2019; Foth, 2018; Shelton & Lodato, 2019).

In response, we argue that a curatorial perspective is not only useful to investigate how smart cities are assembled but also to examine the politics and struggles behind such apparently rational, apolitical processes. A curatorial perspective draws attention to the notion that urban storytelling, smart or otherwise, does not take place in a void but is inevitably connected to constellations of actors, histories, materialities and ideas (Haarstad, 2017; Miller, 2020; Sadowski & Bendor, 2019). The curation of smart city projects- understood as filtering, organizing, caring for and making sense of a constellation of elements- has a profoundly political dimension, providing mechanisms of both alignment with and resistance to the changing geometries, mechanisms and forms of power introduced by globally circulating stories about the smart city. Curatorial viewpoints chime well with relational perspectives on contemporary urbanism that conceptualizes cities as created and changed through relational processes infused with meaning and power (Allen & Cochrane, 2007; Massey, 2013; Ward, 2018). Mobile smart city concepts encounter and are translated through local imaginaries, stories, histories and institutional contexts, with representations of one city’s past used to shape and structure another city’s future (Ward, 2018). By strategically building or implying connections linking smart technologies and narratives to specific materialities and (hi)stories of the city, actors with local remits strategically make urban spaces receptive to some smart city initiatives and refractory to others in support of their contextually defined goals.
This research draws on a case study of Milton Keynes (MK), an English new town founded in 1967. As a new town whose development has been guided by a carefully laid masterplan, MK provides a case in which the curatorial intent of a constellation of actors (including planners, architects, policymakers and councilors) is well documented and more readily traceable than what is usual in cities shaped by contingency and organic growth. Throughout the history of MK, authorities have consistently sought to position it as an urban test-bed (PRP Architects, 2010) and its urban fabric has been shaped by multiple smart and sustainable interventions (Cook et al., 2015; d’Aquín et al., 2014; Miles & Potter, 2014; Valdez et al., 2019). Given that MK is a planned, modernist new town that has been consistently positioned as a node for policy and sustainability flows, it is unsurprisingly at the forefront of smart city developments. But before considering the case study, the next sections set out our approach to studying the political struggles of the smart city from a geographically sensitive relational perspective (Baker & McGuirk, 2017; Karvonen, 2020) informed by curatorial theories and practices (Hansen et al., 2019; Martinon, 2013; Obrist, 2014).

**Political struggles in the smart city**

Smart cities are characterized by networked modes of governance driven by public-private partnerships embedded in a paradigm of competitive urbanism (Fuenfschilling et al., 2019; Karvonen, 2018; Taylor Buck & While, 2017) and an associated model of fast policy (Datta, 2017; Peck & Theodore, 2015). Smart city projects are competitive in the sense that they are almost invariably funded by transnational technology companies or by national bodies rather than by local authorities with very limited revenue-raising powers. Cities compete against each other and demonstrate their receptiveness to smart city ideas to secure funding and materialize interventions addressing pressing urban challenges. National governments and technology companies, in choosing to provide resources to some cities and proposals but not others, indirectly define conditions and shape the very parameters of smart city implementation (Hodson et al., 2018). As smart technologies are embedded in the urban fabric, technical standards become de facto laws and technical expertise acquires unintended political powers (Calzada, 2017). Consequently, key political decisions are made by distant actors with no knowledge of the city and no reason to care for it (Allen, 2016).

The resulting tendency of smart city projects to bypass and overwhelm conventional mechanisms of democratic, deliberative planning is a matter of concern (Cardullo & Kitchin, 2019; Cugurullo, 2018; Joss et al., 2017). Cities become potential customers of an ever-growing array of smart city solutions pushed by corporations, vendors and consultants looking for a niche in the smart city product market. Urban actors face information overload as they navigate the technical complexity of smart city products as well as the changing trends, politics, potential conflicts of interest and “mutual wheeling and dealing” (Dowling et al., 2021; Sadowski, 2016). Information overload is further exacerbated by narratives that envision “fast” cities overtaking those that are slow to adapt to a changing world, encouraging the replacement of deliberative planning by fast-traveling solutions that promise to deliver “a city in a box” (Aurigi & Odendaal, 2020; Datta, 2017).
James and Jorgensen (2009, p. 156) observe that “under conditions of information overload, theoretical interest shifts from the production and dissemination to the ‘filtering’ and ‘mobilization’ of policy knowledge”. Framing, defined as the process of filtering information to give it specific meaning and to make it manageable, is recognized as important to understanding the ways in which smart city discourses are used and mobilized (Haarstad, 2017; Joss et al., 2017; Joss et al., 2019). Filters and frames such as the “smart city” narrative reduce information overload but also shape what is seen, and what counts, in terms of policy innovations, preferred models and practices, enabling certain cognitive and political behaviors and excluding others (Peck, 2011). Smart technologies are often storyed as solutions to pressing environmental problems that will also support economic growth and improve quality of life legitimizing technology-led (re)configurations of urban spaces while concealing trade-offs and conflicts of interest and displacing the heterogeneity of interests that shape cities (Grandin et al., 2018).

The dominant smart city narrative is one of algorithmic governance in which “real time” urban data are used to monitor and manage the space–time of cities (Foth et al., 2018; Marvin & Luque-Ayala, 2017). The chief concerns of smart cities framed by these narratives are the efficient management of urban flows and the provision of city services to citizens conceptualized as consumers. Although these smart city narratives centered on standardized, data-driven governance and optimization of urban flows are dominant they are not unchallenged (Foth, 2018; Lynch, 2020). The concerns that arise from such narratives and ensuing debates regarding the role of private corporations in urban development have given rise to counternarratives, e.g. notions of “technological sovereignty” that would see cities not as managers or service providers but rather as facilitators or collaborators (March & Ribera-Fumaz, 2018; Sadowski & Bendor, 2019). Civic conceptions of the smart city as collectively created in place provide a counterbalance to stylized notions of smart policy transfer advocated by technology companies, which would see policies, models and ideas moving around like “gifts at a birthday party or like jars on shelves” (Peck & Theodore, 2012, p. 449) and draw attention to the profoundly political processes through which such policies are adapted and embedded in specific institutional, economic and social frameworks (Crivello, 2015; McCann & Ward, 2013).

Further research is needed to investigate smart cities as sites where contested narratives prefigure new urban futures and where control over such narratives becomes a key political arena. There is a strong link between the stories through which urban futures are articulated and the actually existing smart cities that may ultimately embody such visions (Dowling et al., 2021). However, smart developments do not emerge fully formed as flawless embodiments of those stories but are crafted incrementally over time and woven through existing sites and contexts. Consequently, smart city storytelling may be able to prefigure future cities but it is unable to predict them. The making of smart cities has thus been described as a process of purposive steering or piloting (Dowling et al., 2021). Here we use the notion of curation to investigate how actors with urban remits steer cities by means of what can be described as a form of curation – a meaning-creating endeavour that is simultaneously constrained and supported by structures such as cognitive frames, regulations, materialities and the affordances of technological artefacts. Thus, cities are not studied as passive recipients for traveling ideas but as possessed of the capacity to use stories to reshape even powerful circulating
ideas in order to “arrive at” distinctive responses to their specific challenges while pursuing a range of different and contextually defined goals (Borén et al., 2020; Robinson, 2015; Wathne & Haarstad, 2020).

**Curation in the smart city**

The preceding section revealed that smart city advocates use powerful stories to circumvent conventional mechanisms of deliberative planning but also acknowledged that cities are not necessarily passive recipients of those stories. Near-hegemonic stories about algorithmic, data-driven governance can be embraced, resisted or reframed by actors with urban remits. Consequently, storytelling becomes a new political arena were the conflicts, tensions, alignments and complicities that characterize smart urbanism can be negotiated. In this section we explore how a curatorial lens can be applied to provide insight into the practices through which smart cities are (re)configured and negotiated through such stories. We use curation as an analytical lens to acknowledge that urban storytelling is ultimately grounded in the materialities and (hi)stories of the city itself, creating meaning through the selection, organization of and care for a constellation of elements (Verhoeff & Wilmott, 2016).

Curation has been applied as a useful metaphor or language to understand urban phenomena (Kampelmann et al., 2018; Krasny, 2014; Verhoeff & Wilmott, 2016). In this article, curation is broadly defined as a practice and an epistemic technology (Hansen et al., 2019) whose aim is: “to filter, organize, craft, and, ultimately, care for a story composed out of – even rescued from – the infinite array of potential tales, relics, and voices” (Burdick et al., 2012, p. 34). The word curation is derived from the Latin root “curare” – to care. Contemporary perspectives on curation increasingly emphasize the importance of caring for the interrelations amongst objects, the enhanced meanings that may generate in their dialogue and the objects’ dialogues with various publics, “cultivating, growing, pruning and trying to find help people and their shared contexts to thrive” (Obrist, 2014, p. 25).

Curation is a practice and an epistemic technology (Hansen et al., 2019) broadly rooted in critical theory and institutional critique, art history, anthropology, philosophy and visual culture (Lind & Wood, 2010; Martinson, 2013). Contemporary critical curatorial approaches developed in the late 1990s out of a need to differentiate curatorial projects aiming at research, knowledge production and critical theory from the managerial and promotional models that dominated curating at that time (Milevska, 2013). As a practice, contemporary curation responds to dominance of neoliberal modes of work and the ensuing hyper-production, as the proliferation and reproduction of ideas, raw data, processed information and material products alters the relative importance of making new objects and choosing from a seemingly endless array of possibilities (Obrist, 2014).

Contemporary curation is not simply concerned with collecting and showcasing a collection of objects but demands constant attention to the mechanisms for “funding it, to build up the environments that sustain it, to develop the discursive frames that open it up to other discussions, to endlessly network it with other work or other structures so as to expand its reach and seemingly give it additional credit for wider impact” (Rogoff, 2013, p. 41). As such, it is inherently opposed to the remit and methods that drive institutions to function as “parking houses” into which objects are deposited according to a
standardized system designed by people constrained by economic and bureaucratic principles who find themselves at a safe distance (Lind & Wood, 2010).

Curatorial theory and practice are intensely concerned with interconnections “linking objects, images, processes, people, locations, histories and discourses in physical space like an active catalyst, generating twists, turns and tensions” (Lind & Wood, 2010, p. 63). As such, curators seek “to give the possibility for more lines of demarcation to be drawn, for the fullness of meaning to be achieved and for horizons of understanding to be set” (Martinon, 2013, p. 30). Curation can thus be considered as a rhetorical practice and an epistemological technology for the articulation and management of what should be remembered and what should be forgotten or hidden (Hansen et al., 2019). Curators draw on various traditions of institutional critique to generate creative tensions as their critical intent works simultaneously with and against its subjects. The curator is no longer considered to be a mere presenter of an already existing set of concepts and projects but is rather assumed to be an active social agent, with curatorial projects increasingly focused on the creation of discursive spaces with a potential to intervene in existing power relations (Milevska, 2013; Sternfeld, 2013). One major power struggle mediated by curators is that of resisting the homogenizing impulses of globalization by facilitating dialogues between places, publics and exhibitions. Curatorial work may draw on global circulations but it is always site-specific, as it seeks to generate interactions, discussions and change in a space in which elements in motion interact and overlap, challenging modernist visions of a stable order in which elements and artifacts remain “separate alongside each other, segregated” (Lind & Wood, 2010, p. 150). As exhibitions change places, each place also changes the exhibition, introducing continual feedback effects between the local and the global (Obrist, 2014).

Curation is “an embattled term that cannot be singularized or totalized” (Martinon, 2013, p. 4). The present exploration of curatorial literatures has been partial and inflected by the authors’ attunement to the political struggles of smart cities. As a result of such purposeful engagement and cross-fertilization between literatures, various concerns of the curatorial perspective were identified as potentially relevant to the study of the techno-politics of smart cities, as follows:

- Curation responds to hyperproduction by filtering, organizing and providing a framework for interpretation.
- Curation is defined by caring – about places and objects as well as the meanings, tensions and potentials their interrelations may generate.
- Because curation cares about place, it is inherently concerned with power relations and with the feedback between the local and the global.
- Curation is not simply concerned with the acquisition or conservation of objects but also encompasses the mechanisms for funding them, sustaining them, developing their connections and amplifying their impact.
- Curation is critical, simultaneously working with and against the subjects of its care.

Having identified common ground and shared concerns linking curatorial theory and current research on smart city politics, the following section explains the method used to investigate how those concerns inflected the processes through which an emerging new town was credibly storied as a smart city.
Method

The curatorial concerns presented in the preceding section are explored through a detailed longitudinal case study documenting various smart and sustainable urban experiments which were curated into the MK:Smart program in Milton Keynes. Consistent with the canon of longitudinal case study research, we pursued an ethnographic sensibility including data collection via 22 interviews and from 30 documents produced by a variety of actors. The interviews were conducted between 2016 and 2019. Interviewees include policy actors, business leaders, technology developers and members of community organizations who were either directly involved in some aspect of MK:Smart or involved in other smart city initiatives with some connection to MK:Smart. Documents analyzed were produced by a range of actors with MK remits and cover a span of approximately 50 years (Webber, 1967 to MKC, 2021a). Our research also benefited from our role as participant observers at a series of policy-oriented events which took place between 2014 and 2021, at which the (largely smart) future of Milton Keynes was envisioned, developed and promulgated. Some of the events were related to MK:Smart (a smart city project led by the Open University), others were prompted by the 50th anniversary of the foundation of Milton Keynes and the publication of the MK2050 vision for the future of the city (MKC, 2020; MKF2050, 2016a).

Scoping how the narratives and imaginaries created in such spaces affected MK revealed multiple practices that could be described as strategic urban storytelling but also suggested that such practices relied on crucial extra-discursive dimensions. MK was not only storied by writing or talking about it – the story of a smart MK was conveyed through things (data centers, sensor networks, robots, wireless electric buses) and through their connections to places and to each other. Projects were connected and amplified in order to convey a story for the sake of national and international audiences, transforming the city into a compelling exhibit to attract investment in an environment of competitive urbanism. Such stories were also conveyed to local audiences through press releases, exhibits, and through the visible materialities of LED-studded electric vehicle chargers, driverless pods and urban robots through which smart urban futures were framed as sustainable, convenient and exciting. Such observations prompted iterative re-engagements with the data in the case study, interrogating how curatorial perspectives might usefully expand the language of policy mobilities to analyze how various actors transform the city into a compelling exhibit while also living with the consequences of their interventions and caring for the resulting constellations (of technologies, policies and institutions). Through the case study, we draw attention to the role the curatorial played in the techno-politics of MK (that is, to examples of filtering and interpretation in response to hyperproduction guided by a critical and caring approach). Once instances of curation were identified, we proceeded to engage with the struggles arising from urban experiments: Who participated? Whose knowledges and claims were considered? How was success defined and measured? What were the socio-material outcomes? How were existing configurations transformed or reinforced? How did interventions fit within existing power relations in the city? (Evans et al., 2016; Ncirí & Levenda, 2020).

The case benefits from good access and working relationships with relevant policy and industry actors that were developed in the course of previous research (Cook et al., 2015;
Cook et al., 2018; Valdez et al., 2018). Such long-term engagement and collaboration call for a heightened reflexivity in order to travel within policy networks without becoming another creature of them, with fact-checking, contextualization and triangulation becoming crucial when extended amounts of time are spent in the company of charismatic global policy entrepreneurs (Peck & Theodore, 2012). However, it also provides the researcher with opportunities to penetrate the assumptive worlds of policy actors, to watch and interact with people on their own territory and using their own language.

Milton Keynes is by no means presented as an example of good practice nor as a reactionary critique of the smart city project. Rather the case situates contemporary endeavors in their historical and geographical specificities and illustrates how, despite broader forces that may lead to some commonalities in all the cases, these specificities really matter for the outcomes and prospects of the smart city. Studies of smart cities are unlikely to provide linear stories and singular perspectives, as cities (smart or not) are shaped by urban wealth of knowledge, wisdom and experiences collectively and privately held by each urbanite and therefore researchers of urban phenomena must take into account and value transitory, informal, soft, implicit, contextual and tacit forms of knowledge (Foth et al., 2007). The account is a narrative, providing a thick description, guided by epistemic commitments to multiplicity, processuality and uncertainty (Baker & McGuirk, 2017). In consequence, the case study will reflect the messiness of a city trying to get a hold of what smartness is, with all the red herrings, false starts, dead ends and unexpected mutations that would not be captured in a neat linear account.

**Case study: curation, complicity and resistance in the smart city**

**Milton Keynes and the planned invention of urban futures**

Milton Keynes (MK) is an English “new town” founded in 1967. Being located approximately 60 miles north of London, MK could have easily become a dormitory city or a satellite of the capital (Clapson, 2004) but the founders of the new town leveraged urban innovation narratives to give it an independent identity. The masterplan produced by the Milton Keynes Development Corporation (MKDC, 1970) storied MK as a place for exploring and even reinventing the future urban environment.

Today’s planners find themselves in a post-industrial era in which the nature of the city is radically changing - indeed the future urban situation has got to be completely re-invented. The rise of the city as a focus of civilisation was not anticipated … Milton Keynes will be, in a sense, a spearhead of this changing phase in urban civilisation. Contemporary planning is now being viewed as the generation of a series of deliberate innovations and catalysts, and the planned invention of the future. (Webber, 1967, p. 7)

The legacy introduced by the founders of MK remains influential as the result of a deliberate effort by local actors in government and industry. Throughout its 50-year history, local actors systematically sought to position MK as a “test-bed” where business and governmental actors could test new ideas, setting standards for future adoption of sustainable urban technologies around the United Kingdom (PRP Architects, 2010). When faced with changed political contexts, institutions were adapted and its urban test-bed image re-storied. Urban futures originally developed in the context of a welfare-oriented social democracy were reframed in alignment to (or complicity with)
a national reorientation to market liberalism. Consequently, MK received continuing support from national government, attracted private funding and continued its economic growth long after other new towns of the era fell into stagnation (Ortolano, 2019). The positioning of MK as a test-bed was explicitly intended to align local materialities and futures with national agendas (ibid). The strategy that MKDC and its successors followed to maintain continuity while adapting to change was almost explicitly curatorial and driven by questions such as “what sort of image can [MK] reasonably project that will fall in line with the current political/economic/social mood?” (MKDC, 1982).

The 2010 Low Carbon Living strategy produced by MK council in response to the Climate Change Act of 2008 exemplifies the privately funded technology-driven urban futures that rendered MK amenable to smart city solutions. When, through the Act, national government signaled its commitment to reducing carbon emissions and its willingness to fund initiatives to meet the targets, MK curated existing urban innovation projects, which were storied together and given new meaning. Several originally unrelated projects funded by different organizations in response to different agendas became a coherent whole: electric vehicle charging points funded by the national Office for Low Emission Vehicles (OLEV); a commercially viable electric bus route relying on wireless infrastructure by the global consultancy ARUP and the corporate group Mitsui; and a project for real time capture of energy-related data organized by Western Power Distribution were used to demonstrate MK’s commitment to sustainable urban innovation, thus developing credibility and attracting further funding.

Curating the smart city

The smart city agenda encountered Milton Keynes as the United Kingdom’s Technology Strategy Board (TSB) launched the “Future Cities Demonstrator” program in 2012. Acknowledging the pressing challenges brought by rapid urbanization worldwide the TSB sought to position the United Kingdom to capture a significant share of the growing and highly competitive market for urban innovation (BIS, 2013; Taylor Buck & While, 2017). The Future Cities program provided a clear example of competitive urbanism as 30 local authorities (including MK Council) submitted bids that showcased their receptiveness and suitability as future smart cities in order to secure a share of the £30 million in funding made available by TSB. Although Milton Keynes’ bid to the Future Cities competition was unsuccessful, the bidding process had resulted in the development of compelling stories and committed coalitions. MK reframed the program as MK:Smart, a university-led intervention to secure £8M from the Higher Education Funding Council for England (HEFCE) through its Catalyst Fund and £8M in match funding from private sector partners.
A strategy that may be usefully described as smart city curation was visibly enacted by local actors including technology developers, civic organizations and council officers. Successful projects were amplified and connections within and beyond MK:Smart were developed. Conversely, smart city projects that failed to support local goals were subtly resisted— they were not actively rejected but they were quietly backgrounded and eventually discontinued. Although MK:Smart was nominally led by the Open University, curation of the smart city in MK was necessarily led by local authorities because they cared for the city, had a sense of its trajectory and were contacted by smart technology providers on a regular basis. The Low Carbon Living strategy of 2010 had increased the visibility of MK and MK:Smart raised it further, attracting proposals from commercial organizations ranging from global consultancies to emerging start-ups. Given the growing number of smart and sustainable interventions taking place in the city, local authorities became aware of the risk that MK could build a reputation “as a city which does not succeed in translating its numerous pilot schemes into coherent permanent improvements” (MKF2050, 2016b, p. 12). The resulting tension made it necessary for local authorities to resist the accelerated flow of policy ideas and technologies pushed into the city (by national agencies, start-up companies, small and medium-sized enterprises and consultancies trying to sell their smart solutions). Specialized officers appointed to this purpose pursued an increasingly selective curatorial approach to assembling the city. For instance, while a transport officer managed day-to-day concerns regarding transport policy and infrastructure, a transport innovation officer was responsible for cultivating a portfolio of innovative transport projects of national and international significance, linking them to the council’s overall transport strategy and development plans to enhance MK’s ability to meet its future mobility needs (MKC, 2021b).

The curatorial work of local authorities was facilitated by the presence of several collaborative civic spaces developed through the history of MK. After the development corporation ceased operations in 1992, guidance documents such as Flexibility 1975 (MKDC, 1975) and the Milton Keynes Planning Manual (MKDC, 1992) ensured that the visions and ideas of the corporation remained influential even as its authority was transferred to the Commission for New Towns, to the English Partnerships and later on to the city council. Continuity within the new spaces of governance was supported through by local government and by local organizations including Community Action MK (founded in 1980 to educate, empower and enable people to champion change in their communities) and the Fred Roche Foundation, an organization that honors the legacy of key figures in the making of the MK masterplan. Although those spaces were not part of the formal governance structures and were not subject to democratic oversight, many of the curatorial decisions that shaped the urban fabric were negotiated there. For instance, the events organized by the Fred Roche Foundation were attended by city officers, land developers, business leaders, leaders of community organizations, senior academics and a variety of retired but still well-respected figures from various planning bodies from the city’s past, who met periodically to debate the future of the city. The events were open to the general public but were predominantly attended by a regular group of elite actors, so as various smart urban futures were debated local authorities and other decision makers could readily gauge the support any given project, technology or idea would receive.
The general public was not deliberately excluded from the spaces of curation and deliberation discussed above but they were predominantly attended by people affiliated with one institution or another. Consequently, citizens of MK did not get first-hand opportunities to participate in the collective storytelling through which the city was curated. Generally, they were not storytellers or curators but consumers, one of the various intended audiences for the smart narratives. Interventions to facilitate encounters and generate new imaginaries about sustainable, citizen-led and smart urban futures were deliberately cultivated in public spaces through events such as the Festival of Creative Urban Living (AFCUL, 2019) or the “Journey to 2050” event which took place inside the shopping centre and included exhibits and presentations such as “Making Milton Keynes a Vibrant, Exciting and Sustainable Place,” “Placemaking Projects around the City,” and “Bringing Robots into Smart Cities” (MKF2050, 2019). As the events were open to public but were not led by it, participation fell short of the citizen-led peer-produced urbanism which would be required to recruit citizens as co-creators of the smart city (Estrada Grajales et al., 2018). Nonetheless, such interventions provided what Fredericks et al. (2019, p. 69) describe as “urban acupuncture” – interventions through which public space is appropriated for new purposes, temporarily changing the nature and feel of a place to “surprise people, stimulate their imagination and create public awareness in citizens”. Such interventions also legitimized the smart and sustainable projects they showcased, securing approval and compliance without necessarily stimulating public debate.

**Outcomes**

While actors with predominately MK remits were not passive recipients of non-local global forces, neither were they entirely free to do as they wanted. Local authorities filtered or curated projects that were not compatible with their vision for the city but when projects were embraced new power relationships arose. The smart concepts and solutions that were ultimately selected for implementation in MK were subject to measurement and governance by the administrators and the funding organizations supporting the smart city programs. Performance metrics formalized through contracts provided funding organizations with the means for exerting power from a distance and encouraging the development of smart initiatives in directions that were aligned with national and transnational priorities. However, even as local actors responsible for managing the projects were committed to meeting externally imposed performance indicators, they also made their own assessments of a project’s success that were ultimately more impactful as they would be used to make decisions about the life and further development of a project after its funding ended. Such evaluations did not look at the project in isolation but assessed its contribution in context of how they could further develop MK’s reputation, complement other projects or even provide the foundations for apparently unrelated developments.

MK:Smart ended in 2017 but many of the apparently ephemeral smart and sustainable projects that were curated by it became permanent components of urban fabric of MK and remain in use or have been repurposed. Although local authorities interviewed expressed their disappointment with the original data-driven version of smart, they did not resist it and did not reject the resources and political capital associated with it.
Instead, smart data was reframed as the foundation for a post-smart MK characterized by deployments of urban robots and trials of driverless vehicles (MKC, 2021a). While in some senses the sediment of “smart” became rooted in the city and transformed it, it also became mobile as various technical and institutional elements of the smart city in MK were mobilized, traveled to and inflected other locales. For example, the expertise developed while building the MK Data Hub has been applied by BT to deploy a related smart initiative in Manchester (UK Authority, 2016), while the Autodrive program jointly deployed in MK and in the city of Coventry informs technologies and policies for autonomous transport nationally and even globally (Armitage, 2019; Hsu, 2018). A smart travel application that provided real-time traffic information was unable to outperform later entrants backed by global corporations but the AI-driven sensor network developed to support it remained in place as policy actors asked for it to be repurposed for other smart transport projects. The sensors were later adopted for projects funded by InnovateUK and Highways England with similar sensor networks deployed in various other locales within the United Kingdom and internationally (iSensing, 2019; TfL, 2020).

The smart ideas, technologies and institutions developed through MK:Smart were consistently embedded and given continuity in local and regional institutional contexts, with local curation ultimately developing smart narratives with regional or even national reach which were leveraged by local authorities to galvanize an ecosystem and position MK as a flagship smart city (MKF2050, 2016a). The continuity of smart concepts in MK is particularly supported through a MK2050 vision meant to guide future development of the city through a series of long-term projects. Smart projects such as those produced under MK:Smart are storied as part of a trajectory of urban innovation, legitimizing a MK2050 vision that includes the construction of a smart city university that will learn from the city as a living lab, the development of a smart, shared and sustainable transport system and the positioning of MK as an exemplar, center of excellence (MKC, 2018) and fulcrum of a smart transport corridor between Oxford and Cambridge. Through this complicity with national agendas (e.g. MHCLG, 2021; NIC, 2018) smart technologies are leveraged to increase the reach and influence of MK within the region, to the point that local authorities envision the creation of the MK metropolitan area and potentially the re-emergence of an empowered development corporation (MKC, 2020).

**Discussion and conclusions**

The case study shows that curation provides an analytical lens suitable for investigating smart city developments, drawing attention to the struggles that arise when urban storytelling becomes an impactful political arena. Stories about rational, data-driven urban futures shape what is seen and what counts in the smart city, effectively bypassing the debates, conflicts and tensions inherent to democratic planning processes. The curatorial perspective critically analyses the processes through which such stories (re)configure heterogeneous urban configurations and are simultaneously (re)configured by them. Importantly, the case also reveals that practices that can be usefully described as curatorial were used by actors with urban remits to steer the emerging smart city in directions that served local agendas and contextual goals. When faced with near-hegemonic smart city
narratives supported by major business interests, curation provides a mechanism through which urban actors can leverage the materialities and (hi)stories of their cities to make them receptive to some versions of the narrative and refractory to others.

Actors in MK did not deliberately set out to curate the smart city but they repeatedly did so by developing connections and fostering dialogues between objects to create new meanings and possibilities. Local actors with a caring yet critical approach to the developing smart city were guided by a vision grounded in the history of place and created spaces where relationships and encounters with smart city discourses, visions, technologies and practices could proceed, simultaneously (re)structuring local institutions and globally circulating notions of “smartness”. At several points through the 50-year history of MK, various actors explicitly set out to story the city in ways that would resonate with its changing context and in the process engaged with some of the central concerns of curatorial theory and practice. Below, we re-engage with each of the five curatorial concerns identified above (in the section “curation in the smart city”) to discuss how smart city curation made a difference.

First, the case study demonstrates that the curation of smart cities responds to hyperproduction by filtering, organizing and providing a framework for interpretation. As a succession of ephemeral smart interventions redeveloped MK, the city could have been rendered incoherent through a process of “Frankenstein Urbanism” (Cugurullo, 2018). However, the various “smart” flows within and through MK’s institutional landscape were heterogeneous but not indiscriminate: Ideas, solutions and potential partners were filtered by actors with a predominately city-wide remit including local authorities, planners and community groups who understood how various potentially smart projects might be aligned or not to the sediment of past projects and to frameworks such as the 1968 master plan and the 2050 vision for the future of MK.

A second feature of curatorial practice is its emphasis on caring: about places, objects, meanings, tensions and potentials. The case study effectively demonstrates the presence of caring urban curation in MK. Local actors caringly curated “smart” so that it could be layered over existing low-carbon policies which were themselves the result of previous caring, place-centered acts of experimental urbanism. The chameleonic act through which the tensions and potentials generated by “smart” were integrated into existing constellations was central to the ensuing (re)configuration of the geographies of power in MK. The smart city project assimilated local institutions and actors, reshaping them but also rendering mobile and amplifying their power by connecting them to national and global smart circuits.

A third feature of curatorial practice identified in the literature and confirmed through the case study is its inherent concern with power relations and with the feedback between the local and the global. The various smart projects within MK attracted investment from national and transnational actors and gave them entry into local spaces of governance but did not entitle them to dictate the terms of “smart” unilaterally. Although their greater resources allowed them to control the governance structures and dictate key performance indicators, actors with predominately MK remits had considerable leeway before the project as they could filter out experiments that did not respond to their concerns and they were also free to choose to support and sustain some experiments and abandon others after the end of initial funding. Smart city policy agendas that appeared to be driven by national and global interests nonetheless provided significant leeway for
urban actors to use in the mobilization of locally determined strategies and contextually defined goals (Wathne & Haarstad, 2020), demonstrating the chameleonic tendency of the smart city (Caprotti & Cowley, 2019; Crivello, 2015) as it enveloped pre-existing agendas.

Likewise, the case study revealed practices consistent with curatorial approaches whose concerns increasingly reach beyond the acquisition or conservation of objects and also encompass the mechanisms for funding them, sustaining them, developing their connections and amplifying their impact. Smart Data centers, sensor networks and low carbon vehicles were not simply pushed into MK but were gradually built in place by coalition of local and external actors willing to find common ground as they collaborated towards a particular vision of smart and sustainable urban growth. Because such narratives about sustainable smart growth in MK did not cause radical change, they did not upset the status quo either and in consequence found many supporters and few detractors. The widely shared narrative became a framework or imaginary that guided the curation of the city as smart urban experiments were selected, connected to the city and to each other. Such labors of curation amplified experiments and made them visible to reinforce pre-existing place-based narratives and attract funding for further interventions.

Importantly, the case study also revealed forms of urban curation consistent with the fifth and final feature of curation identified in the literature. Curation in MK was critical, simultaneously working with and against the subjects of its care. We demonstrate that cities in general and MK in particular are not ultimately powerless, passive recipients of ideas and directives imposed by powerful global interests. “Smart” was not pushed into the city through coercion or regulation but through a process that can be described as inducement or even seduction (Allen, 2016) and which therefore depended on the willing consent and even complicity of local actors. Such complicities did not prevent local actors from engaging with smart interventions as experiments, in the sense that projects became opportunities for critical learning about “smart” in place, to be assessed and if necessary (re)configured not only to improve their technical performance but, importantly, to create a form of smart capable of producing better outcomes for the city.

In conclusion, this contribution draws critical attention to the techno-politics of the smart city in an environment characterized by a rapid flow of ideas and technologies produced by cities engaging in competitive experimental urbanism. The constellations smart policies and technologies interrogated through the case study were revealed to accumulate through a messy, complex non-linear process of sedimentation and practices which can be usefully described as curatorial were used to render diffuse, tangled and inconsistent socio-material constellations into relatively coherent objects of discourse and action. A curatorial perspective challenged linear accounts of cities as passive recipients of globally circulating visions of “smart” or as consumers of ready-made “smart city in a box” solutions. Attention to the curatorial revealed processes which connected globally circulating agendas and smart city technologies to local concerns and place-based stories. Place-based stories about “smart” were not simply reinforced through an accumulation of data centres and sensor networks but were collectively constructed through the way smart technologies, policies, actors and places were filtered, framed, connected to each other and selectively amplified or backgrounded. Crivello (2015, p. 909) observes that “political ideas, although proving to be highly mobile, rarely travel as complete packages;
rather, political ideas morph into fragments containing selective and partial speeches, ideas, general models”. That is also the case for smart policies and their associated technologies, which did not travel as completed wholes into MK and did not flow out of it through clean replication or upscaling mechanisms. Instead, fragments and entanglements of devices, ideas and policies reached into the city or sometimes the city “arrived at them” (Robinson, 2015). By interrogating the ensuing encounters of globally circulating versions of “smart” and locally developed visions of a city and its future, we reveal a developing smart city as a space of generative tensions facilitated by labors of curation undertaken by local actors. The accelerated flow of policy ideas and smart technologies did not overwhelm the slow mechanisms of planning and democratic deliberation in the city. Instead, local actors facilitated new encounters and provided new spaces for imagination and debate, with heterogenous flows and constellations (of policies, technologies and ideas) transformed through curatorial complicity and resistance to negotiate a version of smart which worked for the city.

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