



To what extent can the Fifteen-minute City as an urban design model resolve modern day issues of the urban dweller?

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# Contents

Introduction – The Fifteen Minute City (FMC)	Page 3-4
Part 1: Can the FMC create a welcoming city by being inclusive?	Page 4-11
Part 2: Can the FMC create a vibrant, happy city by improving well-being?	Page 11-18
Part 3: Can the FMC create a safe city by prioritising the pedestrian?	Page 18-21
Conclusion – continuous iterations	Page 21-22
Bibliography	Page 23-32

## The Fifteen Minute City (FMC)

Cities can be centres of culture, social dynamism and innovation; they can also be centres of crime, social isolation and chaos. Cities should be welcoming, happy and safe places since over half of the global population now lives in them, predicted to increase by two-thirds by 2050 (UN:2015). Accelerated globalisation in the 21<sup>st</sup> century is providing increasing challenges, negatively impacting city dwellers; key challenges include social isolation, poor well-being and issues of personal safety. Lockdowns during Covid-19 made the world – from governments, corporations, down to the individual - focus on what is necessary in living environments to optimise quality of life. The concept of the FMC has been considered by commentators as an effective solution to many problems encountered by the urban dweller, creating cities and neighbourhoods that citizens thrive in.

Moreno (2021) proposed the FMC in 2016 as an urban design solution to fast-paced modern city life moving in the ‘opposite direction to modern urbanism’, and was awarded the 2021 Obel Award honouring ‘outstanding architectural contributions to human development’. The model hopes for citizens to satisfy all needs within a short walk or cycle from home (Moreno, 2021), as illustrated in Figure 1. The premise is that quality of life will be optimized if six key amenities; home, work, shops, entertainment, education and healthcare are within a 15-minute walk or bike ride for all residents, transforming a city into a series of ‘walkable neighbourhoods’ (Weng et al.2019). (figure 1)



**Figure 1:** The fifteen-minute city (Hollington, 2021)

Whilst the FMC concept is not a 'radical new idea since it utilises long established planning principles' (Pozoukidou, Chatziyiannaki. 2021:3) having similar theories to Jacob's (1961) who fought against corporate globalisation and Gehl (2010) who aspired for happier and safer cities, Moreno popularised the FMC concept asking; 'why is it that we have to adapt and degrade our potential quality of life?' (Moreno, 2021). Since, this idea of 'chrono-urbanism' is being implemented in cities such as Paris and Melbourne and elements of the concept are influencing urban design worldwide.

The FMC concept is timely post-Covid-19 as a multitude of temporary infrastructures were implemented in cities including cycle and pedestrian paths replacing traffic (figure 2&3); and pop-up stores making amenities local.

This essay will explore to what extent social exclusion, lack of well-being and personal safety are issues for today's urban dweller and whether the FMC concept is an effective design solution. The efficiency of elements promoted by the concept such as localising amenities, reduction of car usage, increased visual appeal and variety and walkability will be considered together with the incorporation of digitalization as an additional design tool within the model. Case studies of cities which enforce the FMC model or elements of it and other theories are considered and the ease and practicality of implementing the strategy is evaluated.



**Figure 2:** Pedestrians and bicyclists on Castellana Avenue replacing automobiles (Anon, 2021)



**Figure 3:** Pedestrianisation taking priority over cars (Anon, 2021)

## Part 1: Can the FMC create a welcoming city by being inclusive?

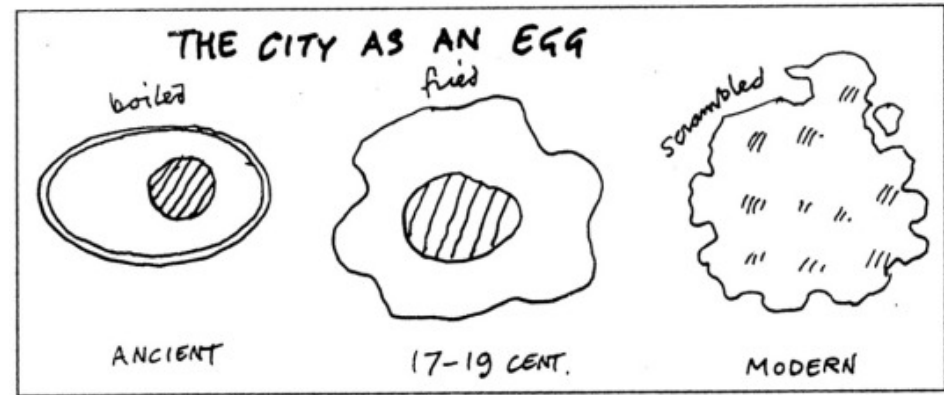
### **Is there a lack social inclusion in the city?**

Rudlin and Falk (2009:115) state; 'community is motherhood and apple pie' implying that 'community' is always positive. Whilst being a community member can be 'an antidote to loneliness' (Rudlin, Falk, 2009:115), it does not suit everyone; Rudlin and Falk (2009:115) note that over the last 100 years the movement out of city centres has been driven 'by a desire for separation... to reduce contact with others.' Whilst some prefer insular lives, Joffe et al. (2021) identify that Covid-19 has created a longing for connection with others; a small but recent study of a stratified sample of 96 city dwellers from London and Birmingham revealed social connection as their 'core aspiration', concluding that generally, urban populations crave community (Joffe et al. 2021). This is supported by Weidenhoeft (1981:45), describing the social desire for communication in unforced environments as a basic human need. Indeed, it is not only the desire for interactions with friends and family but also everyday communications in passing that are essential to 'connectedness'; 'small talk' with strangers; those we habitually walk past on the way to work, baristas, dog-walkers, etc as recently suggested by Sandstrom (2014). In fact, during the absence of such interactions in lockdowns, the term: 'loneliness pandemic' (Sweet, 2021) was popularised and continues to be used insubstantially. Whilst pre-Covid-19, Ortiz-Ospina (2019) claimed there was no empirical data to confirm urban loneliness as an increasingly concerning 'epidemic', it now indisputably deserves attention.

Cities can lack community, augmenting social exclusion in multiple ways, including; 'time pressures' (Joffe, Smith, 2016) due to time wasted commuting in traffic (Moreno, 2021) and increases in technology usage on smart phones, 'eroding community ties' (Joffe, Smith, 2016) making citizens 'massively connected but socially disconnected.' (Moreno, 2021). Jokinen (2019) subjectively affirms the; 'design of urban centres may be the cause for urban isolation'; A city's pathways and road network needs to be legible to ensure its inhabitants feel in place; Lynch (1960) agrees that disorientation can occur in the design of cities street networks, preventing citizens from integrating within the community. Other

authors agree the huge scale of urban life (Jitendra, et al. 2008) greatly contributes to social isolation. To successfully implement the FMC, Moreno (2021) explains it is essential that key amenities are within a 15-minute walk or bike ride, however due to unsustainable urban sprawl (Gurstein, Hutton, 2019),(Figure 4)

Hayes (2020) argues that most suburban neighbourhoods are unwalkable. However, this statement is based off comparisons between only two neighbourhoods - Lucan and Liberties in Dublin, rendering its credibility unreliable. He does however effectively reveal Lucan as less accessible than Liberties due to; 'a tree-like road layout'. (figure 5).

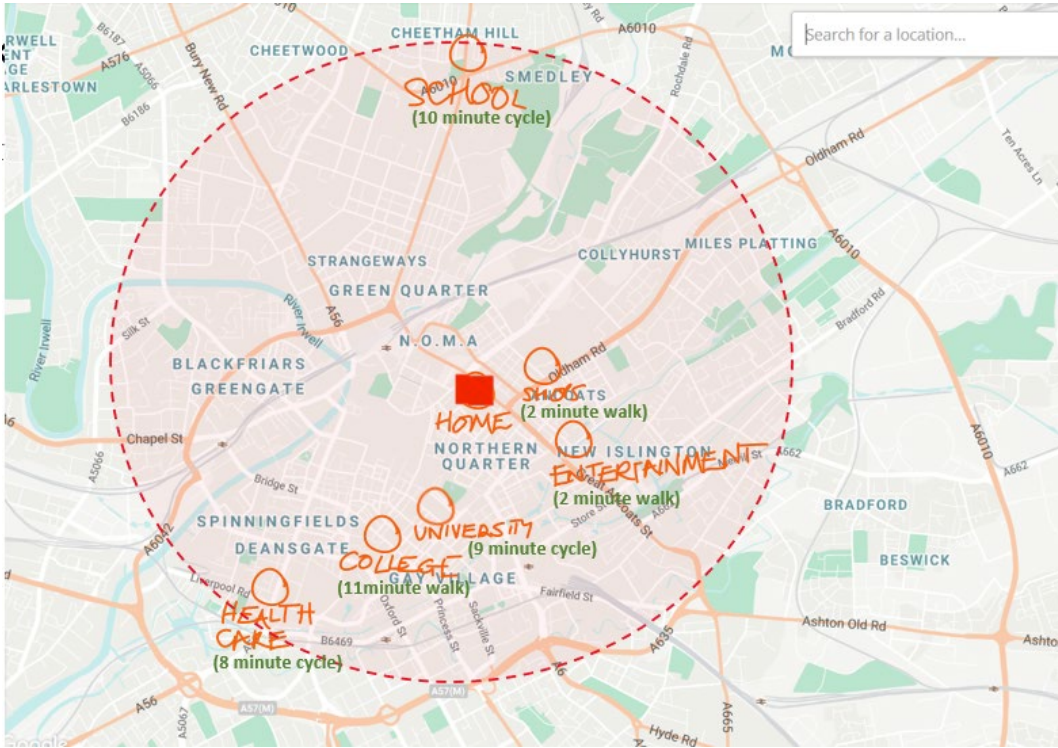


**Figure 4:** Illustration The City as an Egg – demonstrating urban evolution of cities as three types of egg (Price, 2016)

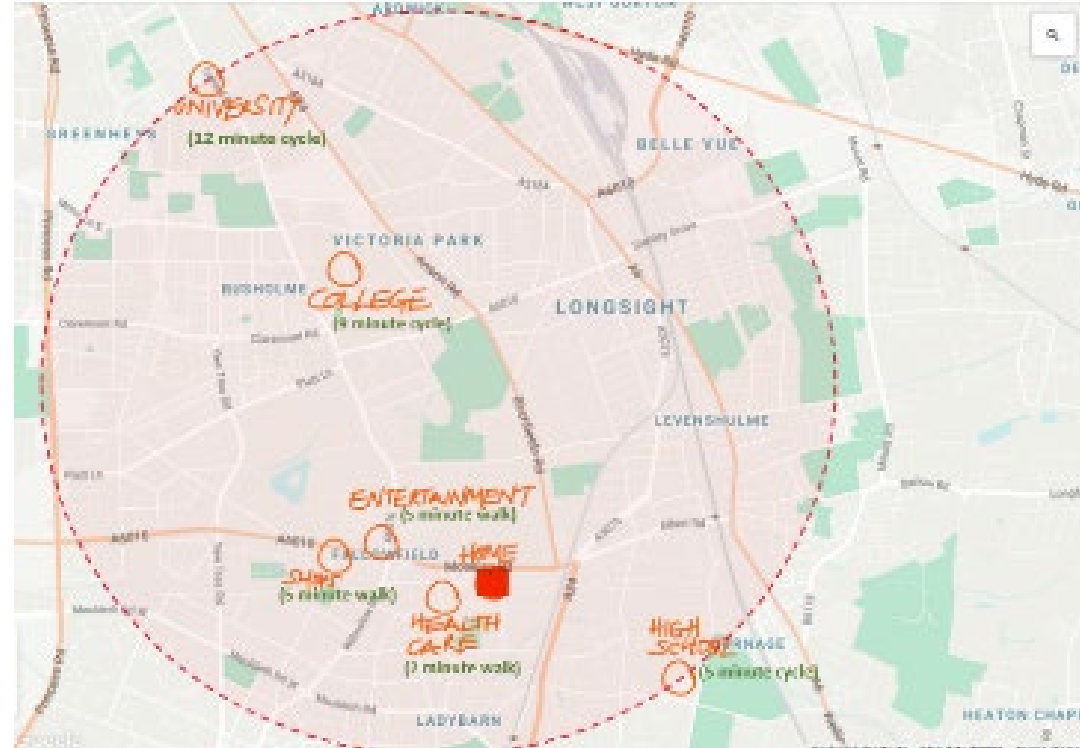


**Figure 5:** Map illustrating two sample areas for fifteen-minute walking distances in Dublin. No. 1 is in the Liberties neighbourhood near the city center; no. 2 is in Lucan, on the periphery (Hayes, 2020)

Primary research was conducted on two addresses in Manchester by to confirming sprawling areas have less local amenities. (Figure 6,7)



**Figure 6:** Map demonstrating local amenities from address in Smithfield Estate, Northern Quarter, Manchester demonstrating most amenities are available locally (Lewington, 2021)



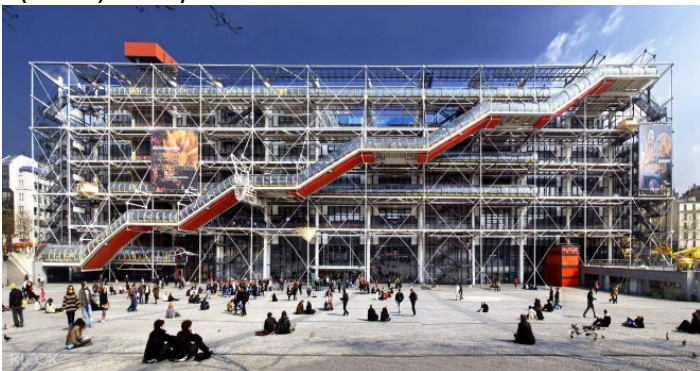
**Figure 7:** Map demonstrating local amenities from authors hom address on Brailsford Road, Fallowfield, Manchester demonstrating less amenities are available locally (Lewington, 2021)

## Could the FMC be a solution?

Lynch (1959:91) explained city forms must be 'non-committal, plastic to the purposes and perceptions of its citizens'. Town and city squares lend themselves to this idea, where open space can be put to a multitude of uses, engendering gathering and social inclusion.



**Figure 8:** Installation in Place Georges Pompidou (Block, 2020)



**Figure 9:** Urban dwellers and citizens relaxing and socialising in Place Georges Pompidou (Migrabi, 2020)



**Figure 10:** Street performances, Place Georges Pompidou (Anon, date unknown)



The morphology of the city is essential in ensuring the FMCs aim of inclusivity by bringing activities to neighbourhoods (Pozoukidou, Chatziyiannaki, 2021). During Covid-19 various authors agree that one of the most notable realisations was time taken-up travelling to work and the lack of amenities at local level (Dudley, 2020, Kun, et al. 2020:5), undoubtedly contributing to the lack of communities in cities (Pozoukidou, Chatziyiannaki, 2021).



Moreno (2021) and others (Frumkin et al. 2004), recognise inequality between richer communities populating urban centres and those living on the outskirts, believing the FMC will benefit social cohesion by making cities ‘polycentric’ – as citizens can travel to where they need don’t without it taking a while - those in city centres have this choice and citizens in the suburbs do not. Moreno (2021) summarises that; ‘having a polycentric territory, (we) can regenerate urban cohesion with multiple services and eventually we will reduce this segregation.’ This ideology is supported by the Paris En Commun vision, which focuses on a massive decentralisation, developing new services for every district therefore benefiting suburban neighbourhoods. To successfully ensure hyper-local amenities, each square metre must serve many purposes (Moreno, 2021), which supports Jacob’s (2016:135) promotion of mixed primary uses.

**Figure 11:** unnamed illustration showing mixed-use spaces (Hollington, 2021)

Paris En Commun's focus on the 'mix of uses' anticipates;

*'transformative public and semi-public spaces having multiple properties such as schoolyards... converted into sports venues or simply cool places which residents can use during summer nights... weekends... holidays.'* (Pozoukidou, Chatziyiannaki, 2021:9)

Additionally, a network of "citizen kiosks" - where residents meet with each other, representatives from the city council and other groups, will offer 'community cohesion services' O'sullivan (2020), engendering social inclusion for all.

Similarly, Plan Melbourne 2017-2050 seeks to face the growing population. An important feature of its FMC is the neighbourhood activity centre – neighbourhoods centre points, which could be workplace and community hubs for interaction and participation (Pozoukidou, Chatziyiannaki, 2020:16). Whilst such a facility could reduce social isolation by encouraging informal meeting, O'sullivan (2020) and Hayes (2020) agree that 'sprawling' cities like Melbourne may require a 'more radical residential densification' implying NAC's may still be insufficient in creating communities.

Whilst the FMC model is polycentric, it could be viewed as 'an enclave — a ghetto – a subdivision' (Glaeser, 2021) dividing citizens from different neighbourhoods. O'Sullivan (2021) agrees, suggesting the FMC may not translate well to the USA from Europe and could in fact 'exacerbate inequality.' Pitter (2021) suggests 'transplanting the FMC template across the Atlantic could be "presumptive and colonial"' and inconsiderate of 'the histories of urban inequity, intentionally imposed... such as segregated neighbourhoods and deep amenity inequity.' Here authors effectively suggest that the FMC is a concept suited to wealthier and denser neighbourhoods.

O'Sullivan believes FMC neglects some demographics and 'erases disabled bodies', which Weng et al (2019) describe as essential to consider to ensure success. O'Sullivan (2021) questions what happens to less mobile individuals such as the elderly, disabled and parents with young children; a fifteen-minute walk or cycle ride will be slower for some - does the FMC ignore these demographics? Little research suggests

solutions for this exclusion and whilst localising amenities through a polycentric model appears effective in concept, more consideration is necessary for less mobile citizens.

Moreno (2021) believes all citizens must be actively involved in the key decision making in transformations of cities to successfully implement FMCs; one way of doing this is through digitalisation. Dembski et al (2020) and Moreno et al (2021) believe that incorporating digitalisation, in line with the Smart City concept, would ensure citizen participation in city design. Smart Cities revolve around the concept of the Internet of Things, of which Maclver (2016) believes the most exciting aspect in cities is how, through data, citizens can play new roles through active participation, however he cautions that while the internet allows citizens to work anywhere and stay socially connected, over-dependence can increase social isolation. Ample research concludes however that digitalisation can connect and encourage participation and therefore social inclusion amongst citizens through online workshops, social media and blog campaigns (Boorsma, 2017).

## **Part 2: Will the FMC make for a vibrant, happy city?**

### **Is there a lack of well-being in the city?**

Well-being can be described as a measure on how; 'happy, inspired and enthusiastic an individual is.' (Robertson Cooper, 2015). In a medically reviewed article, Fraga (2019) demonstrates; urban citizens are 21% more likely to develop anxiety. As well as issues of social isolation as described in Part I, a number of factors within the city can play a role in negatively impacting well-being, including; modern traffic planning a lack of a variety, green space and general visual appeal and lack of agency.

Gehl (2010) enforces most traffic planning does not pay adequate to the quality of city life, which is supported by Jacobs (1961:62) who wrote in 1961, (when there was a significantly lower amount of cars registered on the road in the UK compared to today) how the 'dramatic increase in car traffic in the urban planning ideology of modernism' would 'put an end to urban space and city life and result in lifeless cities devoid of people.'

The urban neighbourhoods' 'internal organisation should be pedestrian-centred,' yet 'most development in the last 50 years has done just the opposite of this' with the pedestrian 'subjugated to the needs of the car and forced into subways and over footbridges' (Rudlin, Falk, 2009:174). This has been experienced first-hand by the proliferation of pedestrian bridges and subways in Leeds and Birmingham to divert the walker away from traffic.

The aesthetics of a city can also negatively impact well-being. Fraga (2019) suggests being surrounded by concrete can give urban dwellers the blues. Personal experience of living in Birmingham (figure 12), with its predominance of grey concrete in some areas, confirm this, which created feelings of negativity and claustrophobia, and a desire to get out of the city as quickly as possible! In contrast cities like Vancouver



**Figure 12:** unnamed image showing Birmingham city centre (Riley, 2014)

(figure 13), whose 'design and build policies accommodate nearby natural greenery,' (Bond, 2017) are recognised as happy and vibrant places to live.

Additionally, Montgomery (2013:50) claims 'an emerging disaster in street psychology', warning: 'As suburban retailers begin to colonise central cities... bric-a-brac and mom-and-pop-scale buildings... are being replaced by blank, cold spaces that effectively bleach street edges of conviviality.' City centres across the UK have become homogenous with the same high street retailers creating a bland experience for the city dweller, when what is needed is cities that are 'more surprising...more variegated,' (Jacobs, 1958)



**Figure 13:** unnamed Image showing greenery in city of Vancouver (Anon, 2019)

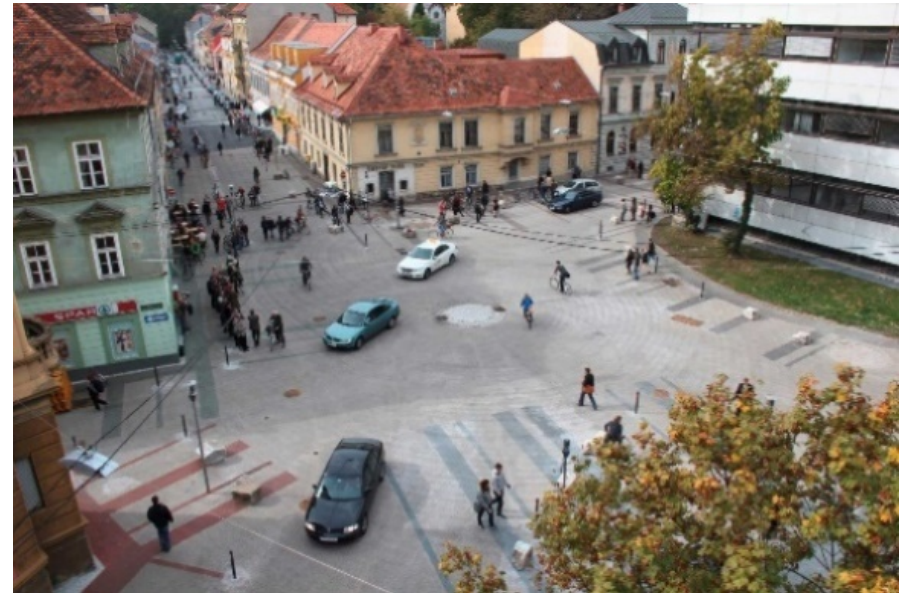
### Can the FMC be a solution?

If designed well, cities can be good for well-being. As suggested by Meyer Lindberg et al (Nature, 2011 Vol 474:498-501) 'if you look at cities epidemiologically, they tend to be richer, better educated (with) better access to healthcare.'

Walking has long been recognised as of benefit to well-being (for the able-bodied) and walkability is central to the FMC concept, it being the focus for the ‘bottom-up promotion of well-being,’ (Pozoukidou, Chaziyanaki, 2021:4). Gehl (2010) quotes 19<sup>th</sup> Century philosopher, Kierkegaard in demonstrating this,

*‘Every day I walk myself into a state of wellbeing, and walk away from every illness. I have walked myself into my best thoughts and I know of no thoughts so burdensome that one cannot walk away from it.’*

Localising amenities can also play a role in promoting walkability by creating short distances for citizens inviting people to walk (Gehl, 2010), but promoting walkability by prioritising pedestrianisation and cyclists through a reduction in car usage is also considered essential. In fact, Rudlin and Falk (2009:237) believe, reducing car-dependency as ‘the most profound influence on future development forms’. Gehl (2010) agrees suggesting that inviting citizens to bike and walk can be done quickly and cheaply through car reduction. Rudlin and Falk (2016) posit that ‘taming the car’ rather than getting rid of in its entirety, can be done simply in several ways, such as creative congestions – such as; traffic lights, crossroads and pedestrian crossings - cause areas of congestion, but in a positive way by reducing traffic speeds to walking pace. Similarly, the ‘Shared Space Movement’ founded by Monderman (Figure 14) in the



**Figure 14:** image of *Sonnenplatz, Graz, Austria* demonstrating an example of the shared space movement (Stueteville, 2016)

1990s advocates the removal of traffic control devices such as traffic lights, speed bumps and safety barriers and has been implemented in 150 locations in Holland (Van de Vliet, 2013).

Another method of decreasing traffic volume is by reducing road capacity, through allocating part of roads to bus lanes or cycle paths for example, reducing the saturation point of a road and decreasing the number of vehicles on it. This has been proven successful in cities such as Copenhagen (Rudlin, Falk, 2016) and Venice (Weidenhoeft, 1981). Gehl (2010:70) believes that 'slow traffic means lively cities'- and a lively city is known to benefit urban dwellers well-being more than empty streets filled with traffic (Jacobs, 1961, Moreno, 2021, Gehl, 2010)

Whilst a reduction in cars will clearly promote walkability, the city must also provide a variety of aesthetic appeal to excite each individual - the city has different meanings to different people, as succinctly put by Lynch (1959:110-111);

*'The designer must ... create a city which is as richly provided with paths, edges, landmarks, nodes and districts as possible' – if so 'different observers will all find material which is genial to their own particular way of looking at the world... while one man may recognise a street by its brick pavement, another will remember its sweeping curve, and a third will have located the minor landmarks along its length.'*

A successful walkable city with visual variety and appeal is Venice, Gehl (2010) demonstrates 20,000 steps can be achieved easily on an average day due to 'the wealth of impressions gained on route and the beautiful city space.' Perhaps a key example of Venice's aesthetic appeal is its high density of active frontages (Figure 15) as noticed from personal experiences meaning pedestrians walked slowly to take it all in.



**Figure 15:** Image of Garibaldi showing active frontages (Wang, 2017)

Densification is considered in more recent iterations of the FMC, which necessitates that distance between the different elements is kept to a minimum. 'Town cramming' (Rudlin, Falk, 2009:178) may sound like a negative approach, but it could be argued that some of the most visually attractive towns and cities are thus so because they are compact.

A 2003 study of Copenhagen's shopping streets showed that the activity level in front of active façades is seven times greater than in front of passive facades (Gehl, 2010:79). Lynch (1959:176) also proposed that active frontages through mix of uses create activity which supports the FMC concept of mixed-use buildings.

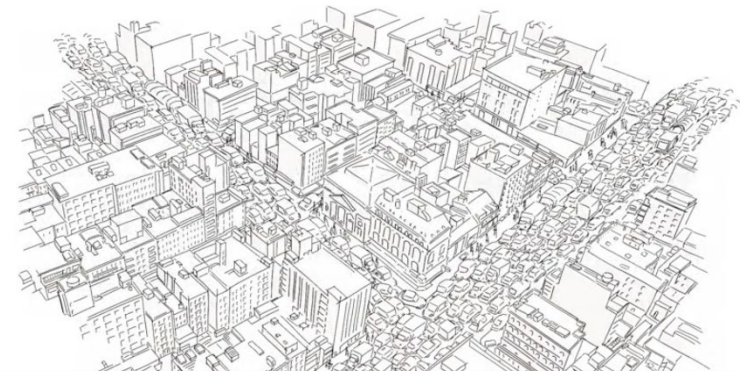
The need for visual variety is further proven a necessity in case-studies undertaken by Lynch (1959:54) of the cities of Boston, Jersey and LA; a common view of residents was 'an emotional delight arising from a broad view' with examples given of the New York city skyline viewed from Jersey and city landmarks viewed from Boston's Charles riverbank. Lynch also found that 'the landscape features of the city (were) ... often noted with care and with pleasure' with individuals making deliberate detours to pass through. Gehl (2010) highlights the visual pleasure derived from; 'direct walks' which are not broken up by buildings - walking through parks and public spaces. These studies support the idea that attractive views of a city skyline, landmark building and green spaces are all elements which can make city dwellers happier.



The FMC concept also promotes visual variety by aiming to increase ‘green zones with parks’ (Moreno, 2021) to benefit well-being, whether it be by providing a space to socialise, relax or exercise. (Figure 16, 17)

Bond (2017) demonstrates that access to green space such as parks woods can often offset stress of city life. Indeed, a correlation can be seen between the perceived happiest global cities and the cities that prioritise green space into their design fabric. Research is unanimous in presenting cities such as Helsinki, Copenhagen, Zurich and Oslo as the happiest cities globally however the credibility is debatable without measuring the happiness of each urban dweller. Forbes however agrees with these rankings through self-reports of urban dwellers evaluating the quality of their lives (Bloom, 2020), and not surprisingly, each of these cities incorporate green space a key design principal (Gehl, 2010).

Through digitalisation a happier and more vibrant city can be created by giving citizens agency, ensuring their participation in decisions made on the design and improvement of cities through feedback; Data regarding infrastructure, for example road useage patterns can be used in decision-making processes regarding pedestrianisation; pollution levels can be monitored and fed back to citizens. Digitalisation has the potential to ensure that the basic design of a city need not change, but instead the life inside it will (MacIver, 2016). However, in



**Figure 16:** Unnamed illustration of Paris (Anon, n.d)



**Figure 17:** Unnamed illustration of the vision of Paris en Commun (Anon, n.d)

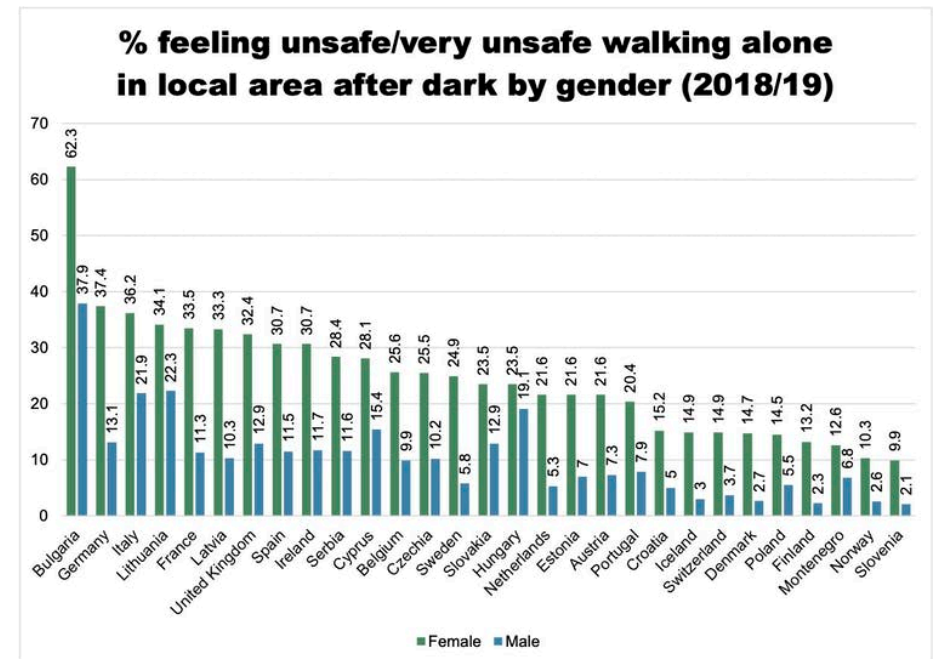
order for the Smart City concept, engined by digitalisation to be incorporated into the FMC, issues of cyber-security must be overcome. (Smart Cities Index, 2021)

### Part 3: Can the FMC create a safe city?

#### Is there a lack of personal safety in the city?

The face of the city which is ‘dark, dangerous and full of unseen threats,’ (Rudin and Falk, 2009:237) is the face that alienates and isolates city dwellers and can lead to their eventual migration out of the city.

The feeling of being safe or unsafe in any environment is influenced by key factors of actual crime rates and media reporting, but is fundamentally subjective, based on the individual and their experiences. All groups of society must feel equally comfortable in all parts of the city. However, of all groups, research reveals (Fitzgerald, 2021, Brogan, 2020) that gender is the most significant factor in feelings of personal safety in urban environments. As shown in Figure 18 a significantly higher percentage of women than men feel unsafe when walking alone at night in all 29 European countries surveyed in the European Social Survey (ESS9, 2019). UN women (2021) confirms that sexual harassment and violence against females is present in public places every country.’ Whilst sexual assault and harassment are often central to discussions of personal safety, city planners and designers should



**Figure 18:** Graph showing % feeling unsafe/very unsafe alone in local area after dark by gender (2018/2019.) (Fitzgerald, 2021)

consider other initiatives to ensure all individuals have a sense of belonging in the place; smooth pavements, dropped kerbs for the disabled and pushchairs, ramps and handrails in areas of uneven ground; seating; secure public toilets that are cleaned and staffed could all engender feelings of safety and belonging.

One reason for the imbalance in perceptions of safety in cities is that most have been designed by men; 'inequality is spatially reinforced by design, from our systems all the way down to individual public spaces' (Gardener, Begult, 2021). The recent push for more inclusive urban design follows the highly publicised murders of Sarah Everard and Sabina Nessa in 2021.

### **Can the FMC be a solution?**

The FMC needs to be, and to feel safe to its residents and visitors alike. A core requirement of the FMC is walkability, and Gehl confirms, 'being able to walk safely in city space is a prerequisite for creating inviting well-functioning cities' (Gehl, 2010:55). It is acknowledged without doubt that the reduction of car use will make for a safer city in terms of citizens health and reduced accident risk; it is the less tangible issue of personal safety that is considered here.

For the FMC to promote walkability, there must be 'walk-appeal' (Mouzon,2010). City planners and designers routinely focus on situational response as a method of crime prevention; CCTV, increased lighting and increased police presence is installed in areas of reported high crime. Whilst such measures will offer some solution and reassurance, the FMC needs to embed the right design principles rather than adding them on once problems have been identified. Ways of improving the 'visibility of the area' and 'natural surveillance' (Ro, 2021) are less costly and intrusive in reassuring citizens than high-cost investment through installation of surveillance, policing, and blanket lighting. Indeed, the biannual Safe Cities Index (2021) concludes that safety is 'a matter of social capital and co-creation' and identified that the cities that rank highest on

personal safety (Copenhagen and Singapore) in its latest index required low financial input to create the highest levels of personal safety through ‘connectedness, shared values and community.’

The FMC promotes mixed use; public spaces that are put to myriad uses at various times of day and night will encourage citizens to see walking and cycling as the default method of transport; Viswanath, (Ro, 2021) suggests that spaces that are designed to allow the installation of small businesses, such as newspaper kiosks and takeaway stands will create safer city landscapes. Bangkok, with its busy pavements teeming with a range of activities is a good example of where a city street can feel safe and vibrant, inviting the city dweller to join in. (Figure 19)



**Figure 19:** Image of a Bangkok street (Alarmy, 2021)

Stakeholder involvement in city design would ensure they do not continue to be designed for the ‘default male user’ (Doody, 2020). The activities of campaign groups such as Reclaim These Streets is pushing cities to focus on inclusive design which allows all citizens to exercise their fundamental freedom of being comfortable to walk in their neighbourhood.

The Safe Cities Index, 2021 found that the safest cities were the ones that embraced digitalisation at a government level, being able to reach citizens nationally to advise them on threats, such as Covid-19 spread and weather warnings, as found in Copenhagen, Denmark.

Digitalisation can positively impact personal safety with technology used to increase participation city shaping through accessible platforms such as Free to Be’s crowd mapping tool, enabling women to identify and share public spaces that make them feel; ‘uneasy, scared or happy and safe’

(Arup, 2021), and apps like Safetipin (safetipin, n.d), devised for its users to make informed decisions about their where they walk. The app has, at its core the 'safety audit' whereby users can input to alert other citizens and authorities to possible threats, highlighting the necessity of input and participation from its users.

## Conclusion

Cities across the world must find sustainable solutions to issues of social inclusion, well-being and personal safety. The FMC model, with its focus on walkability and community, embraces this and precedents prove that the concept, or elements of it, work in practice. However, cities cannot be razed and rebuilt in the FMC mould, and must adapt according to what is there already, and to what inhabitants want. The extent to which this can be done based on the FMC model is questionable. More compact cities could – and some do already – adopt the FMC model easily; new cities, in which the car is at the heart of urban planning and design decisions will have to work harder. The question is, how can they provide everything a citizen needs within a short walk or cycle, and make their inhabitants want to walk and be part of active communities?

The FMC model is an exciting prospect, but it omits to clearly consider the whole population. It could be argued that it has been devised with healthy young adults in mind, as have previous urban planning models, ignoring the capabilities of vulnerable groups. As society becomes more diverse, cities must become more inclusive.

The Smart City, has become another recent focus of urban planning and design. It is recognised that issues of cybersecurity must be overcome to bring digitalisation to the city level; it is also recognised that digital solutions would allow the expectations of the FMC to be exceeded (Moreno, 2021), making digitalisation an essential addition of the model. A human-centric approach has been taken in devising the FMC model; citizen participation is essential to its success - through digitalisation this could be optimised. Not only would technology give citizens agency, but

would facilitate social inclusion, wellbeing and personal safety in several ways. The most successful countries in the world in terms of wellbeing are those which have embraced digitalisation, and Covid-19 highlighted this. The challenge is to bring this successfully to the city level.

As a new model that is in the early stages of being actively implemented in cities such as Paris and Melbourne, mistakes will be made, and lessons learned. There needs to be a continuous iteration of the model, with input from all stakeholders of the city embedded into the design process. Practical ideas based on citizen participation could include ideas such as;

Which members of society could staff, 'police' and maintain green space?

Could vacant buildings and spaces be used for growing fruit and vegetables that could feed the local population?

Could workplace and childcare hubs be provided in one setting?

How could the young and healthy be encouraged to practically support the more vulnerable?

Jacob's statement made 60 years ago still holds true, that 'cities have the capability of providing something for everybody, only because, and only when, they are created by everybody' (Jacobs, 1961:13). It is only with active citizen participation encouraged by the authorities responsible for urban planning and design that the FMC model will succeed.

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## Images

Cover page: *Vision of a 15-minute city*, Authors own visual (2021)

Figure 1: Hollington, H. (date unknown) *The Fifteen-minute City*, Pdp London (online image) (Accessed 28<sup>th</sup> September 2021) <https://pdplondon.com/think-blog/is-the-15-minute-city-having-its-15-minutes-of-fame>

Figure 2: Anon.(2021) *Pedestrians and bicyclists on Castellana Avenue*. Yale Education (Online Image) (Accessed 27<sup>th</sup> September 2021) <https://e360.yale.edu/features/the-pandemic-has-taken-cars-off-urban-streets.-will-it-last>

Figure 3: Anon. (2021) image unnamed. Making Cities Safer. (Online image) (Accessed 27<sup>th</sup> September 2021) <https://making-cities-safer.com/walkability-set-city-free/>

Figure 4: Price, C. *The City as an Egg*. Brandon Donnelly (Accessed Online) (Accessed 25<sup>th</sup> October 2021) <https://brandondonnely.com/2016/02/12/the-city-as-an-egg/>

Figure 5: Hayes, M (2020) *Map illustrating two sample areas for fifteen-minute walking distances in Dublin. No. 1 is in the Liberties neighborhood near the city center; no. 2 is in Lucan, on the periphery*. Places Journal. (Accessed online) (accessed 10<sup>th</sup> October 2021) <https://placesjournal.org/workshop-article/how-far-in-the-future-is-fifteen-minutes/>

Figure 6: Lewington, I (2021) own images.

Figure 7: Lewington, I (2021) own images.

Figure 8: Block, I. (2020) *Atelier van Lieshout's controversial sculpture resembling a man penetrating an animal*. Dezeen (Online image) (Accessed 3<sup>rd</sup> October 2021) <https://www.dezeen.com/2017/10/20/centre-pompidou-atelier-van-lieshout-installation-domestikator-louvre-cancelled/>

Figure 9: Migrabi, C. (2020) *Centre Pompidou, Exterior View*. Minnie Muse (Accessed Online) (Accessed 3<sup>rd</sup> October 2021) <https://www.minniemuse.com/articles/musings/pompidou-colors>

Figure 10: Anon. (2017) *Centre Pompidou*. Atlas of places (Online image) (Accessed 3<sup>rd</sup> October 2021) <https://www.atlasofplaces.com/architecture/centre-pompidou/>

Figure 11: Hollington, H. (date unknown) unnamed, Pdp London (online image) (Accessed 28<sup>th</sup> September 2021) <https://pdplondon.com/think-blog/is-the-15-minute-city-having-its-15-minutes-of-fame>

Figure 12: Anon (2019) unnamed, Tourism Vancouver (online image) (Accessed 28<sup>th</sup> September 2021) <https://www.windsorofchange.com/blog/2017/12/1/vancouver-the-san-francisco-of-canada>

Figure 13: Riley, N (2014) unnamed, Nick Riley Architect (Online image) (Accessed 28<sup>th</sup> September 2021) <https://nickrileyarchitect.com/2014/06/03/buildings-of-birmingham-breaking-down-the-concrete/>

Figure 14: Steuteville, R (2016) *Sonnenplatz, Graz, Austria*. Public Square Journal (online image) (Accessed 28<sup>th</sup> September) <https://www.cnu.org/publicsquare/shared-space-intersections-mean-less-delay>

Figure 15: Wang, I (2017) *Via Garibaldi*. Culture Trip. (Online image) (Accessed 28<sup>th</sup> September) <https://theculturetrip.com/europe/italy/articles/the-coolest-neighborhoods-in-venice/>

Figure 16: Moreno, C (n.d) unnamed. Ted. (Online image) (Accessed 28<sup>th</sup> September 2021) [https://www.ted.com/talks/carlos\\_moreno\\_the\\_15\\_minute\\_city?language=en#t-322718](https://www.ted.com/talks/carlos_moreno_the_15_minute_city?language=en#t-322718)

Figure 17: Steuteville, R (2021) unnamed. Public Square (Online image) (Accessed 28<sup>th</sup> September 2021) <https://www.cnu.org/publicsquare/2021/02/16/guiding-principles-15-minute-city>

Figure 18: Fitzgerald, R (2021) % *feeling unsafe/very unsafe alone in local area after dark by gender (2018/2019.)* The Conversation. (Accessed online) (Accessed 3<sup>rd</sup> October 2021) <https://theconversation.com/survey-shows-32-of-british-women-dont-feel-safe-walking-alone-at-night-compared-to-just-13-of-men-157446> on 27/10/21

Figure 19: Alarmy (2021) unnamed. (Accessed online) (Accessed 20<sup>th</sup> October 2021) <https://www.alamy.com/stock-photo/bangkok-street-food-markets-night.html>