Working with informality: increasing resilience in cities of the Global South

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1.0   Introduction

This paper endeavours to explore the link between resilience and informality using urban metabolism, within a city context. This research is presently in its infancy and is at a wholly speculative and theoretical stage. It undoubtedly requires additional research and further theoretical grounding.

To explore the link between urban metabolism and informality I will commence by defining sustainability and resilience. I will then introduce the concept of cities as ecosystems and the urban metabolism model, which allows city resource use to be measured and modelled. I will present the case that the urban metabolism model be used to measure and inform our understanding of city resilience.

I will then move on to look at informality. I will describe the extent of rapid urbanisation occurring in cities of the Global South and explore the prevalence of urban informality within these cities. I will present the case that continued exclusion of the informal sector from the analysis of cities is futile and that current planning models are inappropriate for cities of the Global South, concluding that a new paradigm is required for the modelling of cities.

After presenting this conclusion I will then explore the link between urban metabolism and informality. I will discuss how urban informality is not widely understood and the need for this to be rectified. I introduce the idea that informal settlements could be better understood by modelling them using the urban metabolism model, which would in turn assist understanding of resilience and adaptability. I suggest that this could provide urbanists with knowledge that may help the creation of more sustainable and resilient cities. I suggest that this could be achieved by learning from the natural resilience inherent within informality.

I will then move on to present the case study of Lagos in Nigeria with its explosive population growth and informal sector. I will conclude my analysis by identifying the contradictions in the theory and the opportunities that this new analytical approach could offer.

2.0   Cities at risk and the need for interdisciplinary thinking

Cities are the home to more than half of the world's population (UN Habitat, 2009) and every year, the urban population is expanding. These cities, which are home to billions of people, are under increasing pressure. Increasingly intensive resource usage, food insecurity, population growth, extreme weather events, climate change, disease (such as the recent SARS and avian influenza), terrorism, widening wealth divisions and economic instability are all threatening our cities. The challenges that our cities now face are not all necessarily new; in fact, as a population we were aware of them decades ago (Schumacher, 1974: 20), but it is only recently that serious measures have been taken to address these challenges and to counteract the problems that arise from them.

The risks these challenges represent highlight the increasingly apparent need for cities to become more sustainable and resilient. Cities need to be prepared to deal with these as-of-yet unknown challenges that will threaten our cities in the future.

In the past the social sciences and the biophysical sciences shied away from working in collaboration but there has been a realisation that modern problems, like those related to cities, cannot be solved by one discipline alone. An inter-disciplinary approach is required for

cities are highly complex, multi-layered systems, made only more complicated by the presence of humans. A convergence of thinkers is required to address this problem.

3.0 Realigning cities with nature

There is a need to realign cities with nature. For many years humankind has fought against nature. Humankind has built the plane, the automobile and the skyscraper. Barrages have been constructed to stem encroaching tides and where there was once sea and wetlands, there is now land. In a matter of centuries, millennia old resources have been extracted from the earth and burnt off for fuel. It seemed like a golden age that certainly spurned urbanisation and wealth (for some) but now it seems that this struggle against nature, by man, is starting to lead to humankind's demise. Sustainability is high on the agenda, as is resilience and these issues are no longer just the concern of green activists. Resilience is needed against other threats now.

3.1 Sustainable cities

Sustainability has been defined many times; the most widely used definition of sustainability comes from the Brundtland Commission in 1987. This report defined sustainability as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Brundtland, 1987). This has been updated and expanded over the years. UN Habitat provides a more contemporary definition, where to be sustainable is to be 'environmentally safe, economically productive and socially inclusive' (UN Habitat, 2009).

Cities need to be more sustainable and eventually become completely sustainable but not merely in the traditional sense of the word. Cities also need to be economically and socially sustainable as well as environmentally sustainable. Social justice and economic productivity must also be on the agenda. This is a challenge in a dynamic world, when the reality of achieving sustainability in a rapidly urbanising world seems impossible. The biggest challenge to achieving sustainability is knowing when the right decisions are being made. No one knows what the future holds and no one knows what the challenges and threats to cities will be in the future. Sustainability must therefore be a dynamic concept that can change to meet the needs of the time.

3.2 Resilient cities

As discussed, there is a need for cities to be resilient, resilient to the unknown challenges and threats of the future, be they natural hazards and disasters, terrorism, climate change, or economic or politically instability. Resilience is the opposite of vulnerability; it is the adaptive capacity of a system and a measure of the systems vulnerability to unexpected shocks and unpredictable changes (Holling, 2001). In the context of cities, resilience can be defined as the capability of the city to deal with change. Pickett et al. (2004) present resilience from a non-equilibrium viewpoint, which is more a 'dynamic and evolutionary' approach. They define resilience as being 'the ability of a system to adapt and adjust to changing internal or external processes' (Holling, 1973; Gunderson et al., 1995; Pickett et al., 2004). Pelling (2003) provides an alternative definition of resilience, he defines it as the 'the capacity to adjust to threat and mitigate or avoid harm. Resilience can be found in hazard-resistant buildings or adaptive social systems' (Pelling, 2003: 5).

From these definitions one can conclude that resilient cities are cities that can adapt and adjust to change, changes both within the system and beyond. Resilient cities are nimble and flexible and with these capabilities they become less vulnerable to the unknown challenges and threats that the world's cities will have to face in the future. Resilient cities can not only adapt but they can also mitigate harm, through an evolutionary process of learning, similar to ecological succession. Further to this, resilient cities require adaptive social systems, communities and governance mechanisms that can adjust quickly to ensure survival of the city and its population. Cities need to be designed so that they have inbuilt resilience, the

main challenge urbanists face is addressing how to design inbuilt resilience in a way that is both economically and socially adequate and realistic.

3.3 Cities as ecosystems

The city is a complex, multi-layered and dynamic entity. To simplify modelling, cities can be modelled as a system. Cities have inputs from beyond the city borders, such as water, energy and food. They have outputs which are expelled to the outer environment, such as pollution, heat, noise, sewage and solid waste and within the city there are many other resources, natural ones and less tangible resources, such as socioeconomic and cultural resources. These inputs and outputs plus the internal resources all interact with each other to create the city. Cities can be viewed as a system and in many ways they could be regarded as ecosystems.

Tansley (1935) first defined the ecosystem as an 'assemblage of organisms interacting with a physical environment within a specified area' (Pickett et al., 2004). The urban ecosystem is made up of living and non-living components. The living components include humans, feelings, culture and emotions. The non-living components include buildings, transport, bridges and other infrastructure (Newman and Jennings, 2008: 93).

3.4 Urban metabolism

Modelling cities as ecosystems facilitates analysis of these complex urbanities; it also allows them to be modelled with a metabolism. The idea of the 'metabolising city' was first introduced by Wolman (1965). Wolman defined the urban metabolic requirements of a city as 'all the materials and commodities needed to sustain the city's inhabitant at home, at work and at play' (Wolman, 1965). Kennedy (2007) has advanced this definition to define urban metabolism 'as the sum total of the technical and socioeconomic processes that occur in cities, resulting in growth, production of energy, and elimination of waste' (Kennedy et al., 2007).

The metabolising city concept relies on modelling the city as an ecological system with inputs and outputs which flow through the city. Cities have largely linear metabolisms, for the inputs and outputs of the city – or ecosystem - extend beyond the city limits. They are also considered heterotrophic, for the city relies on other autotrophic systems for their survival (in the form of inputs from outside the city). But cities are more complex than most ecological systems for human beings are the most dominant element of the city. Humans add another layer of complexity to urbanities through the intangible aspects of human experiences, such as feelings, perceptions and values. These must also are considered and taken into account (Boyle et al., 2003). Cities are about creating human opportunity, the metabolism concept must include liveability, where liveability is about the human requirement for social amenity, health and well-being and includes both individual and community well being. Liveability ensures that the economic and social aspects of sustainability are integrated and included with the environmental (Newman, 1999).

The metabolism model provides a useful concept. It allows the flow of resources and products within a city to be modelled, in an effort to create more sustainable urbanities, by realigning cities with nature and modelling them to have a circular metabolism, like a forest. There has been literature published that has asserted that cities must operate as ecosystems with a circular metabolism. This would mean that cities would provide their own inputs such as energy and food and dispose of their own waste products. In turn they would become self-reliant and sustainable through their circular metabolism (see Girardet, 1999: 34 and Newcombe et al., 1978).

The word metabolism, when looked up in the dictionary is defined as 'the chemical processes in a living organism by which food is used for tissue growth or energy production' with its origin coming from the Greek 'metabole' which means 'change' (Oxford Dictionary,

2008). Metabolism is the rate of change; therefore the urban metabolism of a city can be used to measure the rate of change within the city.

Urban metabolism could therefore, theoretically, be used to be measure the resilience of the city by measuring the rate at which the city can adjust and adapt – its ability to cope with change. Urbanities with a faster urban metabolism would therefore be cities that could adapt and react quickly, they would be cities that are flexible and agile, and this would in turn make them cities that are more resilient. This paper proposes that the urban metabolism model be utilised to measure a city's flexibility, its resilience.

4.0   Informality, urbanisation and the Global South

Since the mid 1970's urban growth has been favoured over rural growth and since 2008, more than half of the world's population resides in cities. This is expected to rise to 70 per cent by 2050 (UN Habitat, 2009). Urbanism is on the rise; the urban population of the earth now outnumbers the rural (Davis, 2006: 1). The population of this planet is growing and the vast majority of this growth is taking place in cities. Cities have absorbed over two-thirds of global population growth since the 1950s and by 2020 rural populations are expected to reach their maximum leaving cities to house almost all future world population growth. Ninety-five percent of this final build out of humanity will occur in the urban areas of developing countries (Davis, 2006: 2). This represents a vast challenge for urbanists who must now refocus their efforts to address the unprecedented growth of these expanding megacities of the Global South.

There is a need for refocus. Urbanisation within the Global South represents different challenges to those of the Global North, for the main mode of urbanisation in the south is informality. To put this into perspective, present estimates place around one billion squatters in the world today – one of every six humans on the planet. Within 25 years, it is believed that the number of squatters will double. Neuwirth (2006) asserts that by 2030, there will be two billion squatters on planet earth – one in four people on earth (Neuwirth, 2006: 9).

Informality was originally conceived as an idea in the 1970's, though informality has arguably been around since the start of time. Keith Hart (1973) introduced us to the concept in his work on informal employment in Ghana. Hart identified the distinction between formal and informal income opportunities as being the difference between being wage-earning or self-employed. The variables between these two distinctions were the degree of rationalisation of the work and whether labour was recruited on a permanent and regular basis for a fixed reward (Hart, 1973).

The definition of 'informal' has been developed over more recent years. De Soto (1989) stated that it was not the individuals who were informal but instead their actions and activities were (De Soto, 1989: 12). Whereas Yiftachel's (2009) contemporary analysis of those living and working within the informal sectors identifies the urban informal population as being partially incorporated into the urban community, economy and space where these partially incorporated people are part of a growing urban informality (Yiftachel, 2009).

Roy's (2009) analysis provides the most comprehensive definition. Roy asserts that 'by informality, I mean a state of deregulation, one where the ownership, use and purpose of land cannot be fixed and mapped according to any prescribed set of regulations or the law' (Roy, 2009: 80). Roy goes on to elaborate that 'Informality is inscribed in the ever-shifting relationship between what is legal and illegal, legitimate and illegitimate, authorized and unauthorized' (Roy, 2009).

This link between informality and legality is an important link to tease out for anyone working on informality, and one that must be questioned. MacGaffey and Bazanguissa-Ganga (2000) identify my concern with this issue of legality in their book 'Congo-Paris' in which they state

that they 'avoid using the terms 'legal' and 'illegal', since the boundary between legal and illegal is a political one, established by the dominant to maintain their power and control' (MacGaffey and Bazanguissa-Ganga, 2000: 5). Informality is defined by the powers that be, the lawmakers. So the categorisation of informality is only as reliable as the government and this is not always a fair process.

When considering the issue of the law we can also consider how informal is informality? In the eyes of the dominant power informality is disordered and irrational, something that needs to be tidied and ordered. But in fact, informal networks are actually very ordered, maybe not through the regular channels such as governments or the legal system, but within the informal network itself [i]. For the failure of state and legal system is not the fault of the informal workers and dwellers. De Soto (1989) identifies this and affirms that the informal community would rather develop their own laws and institutions, which De Soto calls the 'system of extralegal norms', to make up for shortcomings of the official legal system, than surrender to anarchy (De Soto, 1989: 13).

4.1 Exponential informality

Urban informality accounts for a massive proportion of employment and housing in many developing countries and in some countries almost all. Growth within the informal sector, in the face of structural adjustment and neoliberalism, has been unprecedented.

In Latin America and the Caribbean, 60% of all those employed work within the informal sector; in this area of the world, 4 out of every 5 new jobs are created within the informal sector. In Asia, informal employment as a proportion of the total urban employment accounted for one third in the 1960's, this increased to two-thirds by the 1990's (UN Habitat, 2009).

In 2005, informal housing within the different sectors of Asia accounted for between 27% and 42% of urban housing stock, though disparities between countries were large (over 78% in Cambodia down to 26% in Thailand). In Latin America and the Caribbean, 70% of all new housing is informal (UN Habitat, 2009).

In Sub-Saharan Africa, over 60% of the urban population live in informal settlements and 60% of urban jobs are informal (UN Habitat, 2009). Additionally, is it estimated that the informal sector will account for more than an estimated 90 per cent of all new jobs in urban areas during the next decade (UN Habitat, 2003). It is estimated that about 75% of basic needs are provided for informally in the majority of African cities (Simone, 2004: 6). Informality is vast, some might even say explosive. Informality dominates many urban landscapes of the Global South to the extent that now, more than half of the population could be classified as 'informal' (Yiftachel, 2009).

4.2 Futile exclusion

There is a need for urban professionals to accept that informality is in fact a new mode of urbanism, that the majority of the global population are now 'informal' rather than 'formal'. One must therefore question the current western models of development that are rooted within the developed world and conceived from Euro-American ideas and question how appropriate these models really are for analysing and developing cities of the Global South (Roy, 2005). We must question whether existing 'northern' models are really appropriate for analysing a planet where the majority of the population is classified as informal. For these are models that meet the needs of the few, as opposed to the many.

New models for analysing cities are required, models that allow for a more sophisticated interpretation of the complexity of cities. Models that are created to address the unprecedented urban growth of the Global South and associated issues would generate a more appropriate analysis to deal with the challenges of the future. A new paradigm is

needed. Western models of development are outdated and inappropriate for the growing urban populations of the Global South. Informality is fast becoming the 'norm', the dominant mode of urbanisation. Formal urbanisation is the irregularity. It is therefore futile to attempt to utilise outdated western planning methods such as masterplanning and city planning to address the issues of development, sustainability and urbanisation in cities of the Global South.

5.0   Informality and the urban metabolism model

This paper proposes that the urban metabolism model be used to analyse informality within the Global South. The unprecedented rate of growth of informality calls for it to be better understood by urbanists, planners, architects and engineers and not simply ignored. The urban metabolism model could be used as a tool to inform understanding of the functioning of informality, it could help urbanists understand the processes within it and discover whether there are lessons to be learnt.

5.1   Understanding informality

Informality is not widely understood and has been widely excluded from the vast majority of planning research. Yiftachel (2009) exemplifies this through an analysis of recent planning publications. Yiftachel asserts that 'in a content analysis of six leading international planning journals over a period of three years (2005–08), only three (!) out of 327 published articles, were devoted to the issue of urban informality' (Yiftachel, 2009).

Informality is not widely understood by urbanists. There may be many reasons for this, I will speculate as to some of them. Much urban analysis takes place from the Global North, which experiences minimal levels of informality within its cities (UN Habitat, 2009). Informality could therefore be merely overlooked.

Informality often seems inaccessible; it can feel like a different world to many urbanists. Often true understanding of the operation and processes within an urban area can only come from being part of that world. Almost all publishing academics are do not belong to the informal world but further to this, if an urbanist attempted to penetrate informal communities to advance their understanding [ii], then many would find this very difficult and maybe even impossible, for their presence would not necessarily be welcome, given that almost all informality operates outside of the realms of the law.

Informality may be ignored from analysis and research because many urbanists do not want to encourage it, for they see informality, slums and squatters as illegal and dangerous (Neuwirth, 2006: 16). Informal workers and dwellers are perceived by some as avoiding tax or rent and therefore they are deemed to be not fully paid up members of society.

There are many more reasons why informality may have been and continues to be overlooked and excluded from urban analysis but this does not solve the issues relating to informality, nor does it make it disappear. The majority of the world can be classified as informal (Yiftachel, 2009) and this number is growing, at an unprecedented rate. Therefore, informality must be analysed and understood if urbanists are ever going to succeed in improving city life for the world's population.

5.2   Informality: organic, evolving, changing

This paper proposes that the urban metabolism model be used as a method for understanding and advancing knowledge of informality. Informality presents an interesting case for the urban metabolism model for informality changes very quickly. It is a dynamic urban form that can spring up in 24 hours, or overnight in the case of the gecekondus in Turkey (Mahmud & Duyar-Kienast, 2001).

Informality can change and adapt to meet the needs of the people very quickly because informality is defined by the people's needs. It is not designed by planners, architects or bureaucrats at a city level who plan, predict and design for what they believe the people and the city will need over the next twenty years. Informality, be it employment or housing, is defined by the needs of the people and therefore it adapts when the people's needs change; it is designed and organised to support the way of life of the urban poor. It is not designed by developers homogeneously but instead it reacts and responds to local culture and community.

Informal settlements can prove quite sustainable: residents have low carbon footprints, neighbourhoods are mixed land use with a good ratio of housing and employment. The neighbourhoods are walkable; in fact a car would not fit down the streets. Recycling takes place on a mass scale, unfortunately often fuelled by a financial need as opposed to a sustainable agenda. Urban settlements are designed to be as efficient as possible and if efficiency reduces because parameters change, then informality will adapt, evolve and alter to once again be efficient. I hypothesise that this is because the housing and employment opportunities are designed by the community that they serve, who know their own needs better than anyone. Informality allows for emergence.

5.3   The metabolism of informality

Informal settlements are nimble, they are flexible and they adaptable. They have a metabolism that is fast, it is fast because informality allows for rapid transformation in response to changing variables, pressures and needs. The informal settlement takes advantage of symbiotic benefits; it allows for natural evolution and organic growth which in turn provides the community with a natural resilience. Informality is highly resilient because it can continue to meet the unanticipated needs and the surprises of the future.

If cities were (un) planned to grow in the same organic fashion as informality, then it would grow to be more responsive to the needs of the people and the changing parameters of society, as they stand, at the moment in time. Needs are dynamic and therefore cities must be dynamic. A dynamic, organically evolving, rapidly metabolising city would be able to adapt quickly which would be agile and flexible.

5.4   Lessons for urbanists

I propose that there are lessons to be learnt from informality. That these societies, although often seen as the epitome of poverty, can in fact teach us how to create cities and societies that serve the people. A city is not a physical entity made up of roads and buildings and bridges. A city is all the people who live their lives there. Cities should be encouraged to grow in a fashion that meets the need of all of the people who make it what it is.

Informal settlements have a compact urban form that is walkable. Through necessity lifestyles are conservative with an ethos of reduce, reuse and recycle to keep living costs to a minimum. Water is carefully used, often because collection is laborious and cost is high (Kjellen & McGranahan, 2006). Architecture is designed for the natural environment and is aligned with the climate (Neuwirth, 2006: 73). Food is bought locally and in-season, economies are local and can be profitable. Communities are physically and societally adaptable and flexible, they can cope with changing parameters and quickly adjust to ensure continue support to the population. There is an ethic of care (Neuwirth, 2006: 97) amongst communities, that is nurtured and a sense of place that is achieved through community organisations and regulatory councils. There are also innumerable negatives but these should not cause urbanists to overlook the positives that are naturally inherent within informal communities, the positives which are the basis for a sustainable society (Newman and Jennings, 2008: 110).

6.0   Case study: Lagos, Nigeria

Ahonsi (2002) identifies why Lagos is so interesting to urbanists. He remarks that Lagos is fascinating because really, it should have descended into a permanent state of chaos, given the extent of the illegal squatting and blight. But it hasn't and that is what makes Lagos such an interesting case study (Ahonsi, 2002).

Lagos is a city of challenges and threats but despite this, it continues to grow and support its ever expanding population in the face of adversity. Lagos has grown from a population of 267,407 in 1953, when it was the second largest city in Nigeria, to 665,246 in 1963, when it overtook Ibadan to become the largest city in Nigeria. By 1976 the population of Lagos had climbed to 3.55 million and by 1988 the population had reached 6 million. Rural to urban migration was a large contributor to the growth, with migration being encouraged at this time by the ending of the civil war in 1970 (Fapohunda, 1985: 4;, Peil, 1991: 19). It is estimated that in-migration has contributed to 65% of population growth (Ahonsi, 2002). Lagos' population now stands at 10.6 million, this is expected to rise to 15.8 million by 2025 (UN Habitat, 2008).

It is this rapid expansion of Lagos that makes it such an interesting case study, for this meant that Lagos could not really be planned. Pre-colonial Lagos was a fishing and farming settlement, later Lagos gained importance as a harbour city under colonial rule. This harbour was the catalyst for the construction of further transport links. Road, rail and air links all followed, revolving around Lagos, the transport hub of Nigeria. Lagos was also the economic, social, commercial, political, administrative and financial hub of Nigeria, at least until 1990 when federal capital was moved to Abuja. Lagos continues to maintain its importance as the centre of manufacturing, financial and commercial activities in Nigeria. (Peil, 1991: 172 and Abiodun, 1997).

6.1   A match made in heaven: failure of the state and informality

The rapid urbanisation of Lagos created exponential growth within the informal sector. Approximately 70% of Lagosians can be classified as informal (World Bank, 2006). Governance in Lagos is poor with the majority of the population neglected by the state, which fails to meet the most basic needs of the majority of residents. The existing approach to governance is non-inclusive. The government declares that informal settlements fall outside the urban regulation and planning systems. As a result, the government refuses to provide the most basic of services, such as drainage, to the informal settlements, even though well over half of the city population lives informally.

The rapid influx of migrants into the city has created a situation where the state government cannot (or will not) support the basic needs of the people, which leaves just one solution, and that is for the people to support their own housing, employment and societal needs through the informal sector.

Abandonment of the urban poor by Lagos's state government coupled with the government's lack of resources has led to a situation where the urban poor routinely intervene to compensate for the failure of formal governance structures to deliver services and provisions (Ahonsi, 2002).

6.2   Risks, threats and challenges

Lagos is growing exponentially whilst simultaneously facing a multitude of threats and challenges. Lagosians have to contend with poverty, violence, insecurity, unemployment, disease, political corruption, poor infrastructure, uncontrollable growth and manic religiosity (Gandy, 2005). On top of these anthropological influences, Lagos experiences extreme weather events with increasing frequency and the low lying nature of Lagos puts it at further risk from flooding, which happens often. Flooding is made worse in Lagos by the increasing urbanisation and poor infrastructure. This problem is exacerbated by the almost non-existent refuse collections, which causes trash to consequently block up the inadequate sewer

system. Land reclamation by the urban poor has only made the problem worse (Adelekan, 2009).

6.3   Resilient Lagos

Despite exponential population growth and no economic growth (Packer, 2006) Lagos continues to support its population. Despite the omission of the basic amenities and the public services that are deemed by almost all urbanists as essential for city functioning, Lagos continues to thrive. Lagos should not be able to support a population considerably below its current level but it manages to support an ever expanding population and this is the fundamental conundrum of Lagos (Gandy, 2005).

Lagos's population have invented an 'ingenious, alternative system' (Koolhaas et al., 2001: 652) with which to deal with the challenges that they face as a result of explosive urbanisation – explosive informality. The informal economy exploded as the people of Lagos created diverse and creative ways of coping with the challenges created by urbanisation in the shadow of diminishing economic growth. In the 1990s, the fastest growing subgroup of the urban poor were the entrepreneurial poor. It is estimated that this group grew by 61 percent between 1992 and 1999 alone (Ahonsi, 2002). The extent to which the urban poor have driven the development of Lagos is remarkable. The poor majority has responded resourcefully to the challenges of economic livelihood, waste management, asset building and local governance (Ahonsi, 2002). The urban poor have maintained their survival in the face of rapid population growth innovatively. They have managed so adeptly that Ahnosi suggests they could 'provide pointers to some opportunities that could be harnessed in planning and executing interventions for making the metropolis a more functional and hospitable city' (Ahonsi, 2002: 143). Koolhaas remarks that indeed, 'without the interventions of the urban poor, the current city could not exist or survive (Koolhaas, 2002).

So how does Lagos continue to survive? I theorise that Lagos can continue to survive in the face of adversity because it has an inherently high carrying capacity which allows it to be resilient to constantly changing parameters. Challenges and threats that would bring cities like London and New York to a standstill do not threaten Lagos. Lagos continues to cope and this natural resilience of Lagos should be learnt from, this knowledge should be transferred to other cities of the Global South. I deduce that this naturally high carrying capacity occurs as a result of the high levels of informality within the city. The lessons of Lagos are the lessons of informality.

Urbanists do not really understand how Lagos continues to survive and succeed but it is truly resilient to almost every threat or challenge that comes its way. There are lessons to be learnt from Lagos but this is not to say that we should be emulating Lagos. Life is hard for most Lagosians. Living and working outside the realms of corruptible laws (Gandy, 2005) is not challenge-free and trying to eke out a living from a stagnant economy is no mean feat. Lagos does offer us a different perspective to the challenge of resilience, of city survival and it is this which urbanists should analyse, for I suspect that there may be something worth learning from.

7.0   The way forward

Informality can be socially, environmentally and economically sustainable and efficient but it can also be very harmful. There are numerous challenges and contradictions that arise from a planning paradigm that encourages informality which could be argued is so efficient because it is fuelled by desperation. The most obvious challenge of this paradigm is its reconciliation of the sustainability and brown agendas.

There is an evident lack of understanding regarding the functioning and operation of the informal sector. This paper urges urbanists to realise this and understand that analysis that excludes informality is unrealistic; it also fails to produce the results that many urbanists are

working towards. It is also futile. Urbanisation is rapid and unprecedented. The global population of the planet is larger than it has ever been before. Informality is explosive and the informality is the mode of urbanisation in the Global South.

For these reasons, there must be a realisation that there is a need to include informality within research. This paper suggests that the urban metabolism model would be a good starting point. Urban metabolism would allow one aspect of informality, the naturally inherent resilience, to be better understood. It would also provide urbanists and environmental scientists with the opportunity to better understand the mechanisms of the metabolism model and ascertain its strengths as well as its flaws and weaknesses. Such research would also encourage an interdisciplinary research agenda which is essential to the understanding of the complexity of cities.

The urban metabolism model is not a new concept but its application to resilience and subsequent link with informality is a new approach. It allows the question to be reframed and analysed from a different perspective, it offers a divergence from the standard approach. Intensive urbanisation brings innumerable challenges for the global population; the urban metabolism model could prove a useful tool or vehicle that allows the questions to be reframed and provides a new direction for research. I do not yet know what the opportunities of this reframing will bring, that is beyond the scope of this paper. Further exploration is necessary and better understanding of the concepts is necessary. Greater understanding will only come from an interdisciplinary approach.

7.1   Final thoughts

This paper does not intend to celebrate the poverty of informality. It does not intend to create an illusion that life for the urban poor is easy, or without hardship. In fact my aims are quite the opposite. The aim of this paper is to make urbanists think twice. More than half of the global population can be classified as informal, yet informality continues to be ignored from research time and time again. This paper aims to address this problem from a different angle. It does not aim to encourage the inclusion of informality into research for reasons of social and environmental justice (though this is my true aim), it aims to include informality because it has something to offer, something to learn from. There is knowledge to be learnt from informality and this is why it must be included within research. It can no longer and should no longer be simply omitted, dismissed or overlooked, for if it continues to be, the current generation of urbanists may be missing the most important lesson of their lives.

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References

Abiodun, J. O., (1997) The challenges of growth and development in metropolitan Lagos, Ch. 6, pp. 192-222 in Rakodi, C., (Eds) The urban challenge in Africa, Japan: UN University Press

Adelekan, I. O., (2009) Vulnerability of poor urban coastal communities to climate change in Lagos, Nigeria, Firth Urban Research Symposium 2009, accessed online on 18 May 2010 at http://www.naspanigeria.org/docs/adaptations/Impact_on_Poor_in_Lagos_Adelekan.pdf

Ahonsi, B. A., (2002) Popular Shaping of Metropolitan Forms and Processes in Nigeria: Glimpses and Interpretations from an Informed Lagosian in O. Enwezor, C. Basualdo, U. M. Bauer et al., (Eds) Documenta11_Platform4. Under Siege: Four African Cities. Freetown, Johannesburg, Kinshasa, Lagos, pp. 129-151. Ostfildern-Ruit: Hatje Cantz.

Boyle, G., Ishii, S., Kumar Karn, S., Marcotullio, P., Suzuki, K., Yusuf, M. A., Zandaryaa, S., (ed. Peter Marcotullio and Grant Boyle), (2003) Defining an ecosystem approach to urban management and policy development, United Nations University Institute of Advanced Studies

Brundtland, G (ed) (1987). Our Common Future: The World Commission on Environment and Development, Oxford: Oxford University Press.

Davis, M., (2006) Planet of Slums. London: Verso

De Soto, H., (2002) The Other Path: the Economic Answer to Terrorism. New York: Basic Books

Fapohunda, O. J., (1985) The informal sector of Lagos: An enquiry into urban poverty and employment, Ibadan: University Press Limited

Gandy, M., (2005) Learning from Lagos, New Left Review, Vol. 33, May-June, pp. 37-52

Girardet, H., (1999) Creating Sustainable Cities, Schumacher Briefings No. 2, Green Books, Devon

Hart, K., (1973) Informal Income Opportunities and Urban Employment in Ghana. The Journal of Modern African Studies, Vol. 11, (1), pp. 61-89

Holling, C. S., (2001) Understanding the complexity of economic, ecological, and social systems, Ecosystems, Vol. 4 (5), pp. 390-405

Kennedy, C., Cuddihy, J., Engel-Yan, J., (2007) The Changing Metabolism of Cities Journal of Industrial Ecology, Vol. 11 (2)

Kjellen, M., and McGranahan, G., (2006) Informal water vendors and the urban poor, IIED, Human settlements discussion paper series, theme: water-3

Koolhaas, R., Boeri, S., Kwinter, S., Tazi, N., Obrist, H., (2001) Mutations: project on the city, Barcelona: Actar

Koolhaas, R., (2002) Fragments of a Lecture on Lagos in O. Enwezor, C. Basualdo, U. M. Bauer et al., (Eds) Documenta11_Platform4. Under Siege: Four African Cities. Freetown, Johannesburg, Kinshasa, Lagos, pp. 129-151. Ostfildern-Ruit: Hatje Cantz.

MacGaffey, J., and Bazanguissa-Ganga, R., (2000) Congo-Paris, Transnational Traders on the Margins of the Law (African Issues). International African Institute. Oxford, James Currey; Bloomington, Indiana, Indiana University Press

Mahmud, S., & Duyar-Kienast, U., (2001) Spontaneous Settlements in Turkey and Bangladesh: Preconditions of Emergence and Environmental Quality of Gecekondu Settlements and Bustees, Cities, Vol. 18 (4), pp. 271–280

Neuwirth, R., (2006) Shadow Cities: A billion squatters in a new urban world, Abingdon: Routledge

Newcombe, K., Kalma, J. D., Aston, A. R., (1978) The Metabolism of a City: The Case of Hong Kong, Ambio, Vol. 7, (1) pp 3-15

Newman, P., (1999) Sustainability and cities: extending the metabolism model. Landscape and Urban Planning 44 pp 219-226

Newman, P., and Jennings, I., (2008) Cities as Sustainable Ecosystems: Principles and Practices, Washington: Island Press

Oxford English Dictionary of Current English (2008) Third edition revised, Oxford: OUP

Packer, G., (2006) The Megacity: Decoding the chaos of Lagos, The New Yorker, 26 November, 2006, accessed online on 24 May 2010 at http://www.newyorker.com/archive/2006/11/13/061113fa_fact_packer

Peil, M., (1991) Lagos: the city is the people, London: Belhaven Press.

Pelling, M., (2003) The vulnerability of cities: natural disasters and social resilience, London: Earthscan

Pickett, S. T. A., Cadenasso, M. L., Grove, J. M., (2004) Resilient Cities: meaning, models and metaphor for integrating the ecological, socio-economic, and planning realms, Landscape and Urban Planning, Vol. 69, pp. 369-384

Roy, A., (2005) Urban Informality: Toward an Epistemology of Planning, Journal of the American Planning Association, Vol. 71, (2), pp. 147-158

Roy, A., (2009) Why India Cannot Plan Its Cities: Informality, Insurgence and the Idiom of Urbanization. Planning Theory, Vol. 8, (1), pp. 76-87

Schumacher, E. F., (1976) Small is beautiful: a study of economics as if people mattered, London: Abacus

Simone, A., (2004) For the City Yet to Come. Durham: Duke University Press

Tansley, A., (1935) The use and abuse of vegetational concepts and terms, Ecology, Vol. 16, pp. 284-307

UN Habitat, (2003) The Challenge of Slums. London: Earthscan

UN Habitat (2008) State of the World's Cities 2008/2009, United Nations Human Settlements Programme. London: Earthscan

UN Habitat (2009) Planning Sustainable Cities, United Nations Human Settlements Programme. London: Earthscan

Wolman, A., (1965) The metabolism of cities, Scientific America, Vol. 213 (3), pp. 179-190

World Bank (2006) Project Appraisal Document: Lagos Metropolitan Development and Governance Project. Accessed online on 15 June 2010, see http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2006/06/19/000160016_200606191 04001/Rendered/PDF/36433.pdf

Yiftachel, O., (2009) Theoretical Notes on 'Gray Cities': The Coming of Urban Apartheid? Planning Theory, Vol. 8, (1), pp. 88-100

Film and TV

Lagos Wide and Close: An Interactive Journey into an Exploding City - Interview Rem Koolhaas (2005), DVD, by Bregtje van der Haak

Slumming It (2010), television programme, Channel Four (England), aired at 9pm GMT on 14th January 2010

Welcome to Lagos (2010), television programme, BBC Two (England), aired at 9pm GMT on Thursday 15th April 2010

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[i] This organisation of informal networks and creation of an 'extralegal system' is illustrated very clearly in the BBC documentary 'Welcome to Lagos – Part 1' aired on BBC Two at 9:00pm on Thursday 15th April 2010

[ii] The difficulty and challenges of accessing informal areas can be seen when Kevin McCloud tries to gain access to Dharavi, Mumbai for the filming of the Channel 4 TV programme 'Slumming It' – Aired at 9pm GMT on 14th January 2010 on Channel 4 (England).

Rem Koolhaas also faces challenges when filming in Lagos, he admits that he was scared to get out of the car, then when he did he got into the President's helicopter – Lagos Wide and Close: An Interactive Journey into an Exploding City - Interview Rem Koolhaas by Bregtje van der Haak (2005)