Negotiating "Streets for All" in Urban Transport Planning: The Case for Pedestrians, Cyclists and Street Vendors in Nairobi, Kenya

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Abstract: This paper uses the concept of "streets for all" as the analytical basis to critique the neglect of pedestrians, cyclists and street vendors in transport policy and practice in the city of Nairobi. The paper shows that transport planning in Nairobi has not adequately taken care of informal economy and non-motorized transport such as walking and cycling. This has resulted in competing use of pavements and roads, exposing pedestrians, cyclists and street vendors to insecurity and harassment. The paper calls for inclusive transport planning for multiple street activities, which requires implementing a "streets for all" policy. Such a policy needs to be critically pursued at the level of dealing with the institutional and structural bias in urban transport planning towards motorized traffic and the overall urban development that does not adequately consider the spatio-temporal activity pattern and the life of pedestrians, cyclists and vendors on the streets.

Keywords: streets for all, liveable streets, reversal, negotiating, Nairobi

Introduction

Geographical studies of urban transport and streets have utilized a wide range of theories and methods to generate important information on movement and travel patterns, flow of goods, structure and density of transport networks, traffic congestion, public transport and other modes,

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parking and pollution (Keeling 2007, 2008, forthcoming; Turton and Knowles 1998), but there is very little in the way of conceptualizing urban streets as contested spaces that need to be shared by different users for different functions and activities. This paper advances the position that urban streets are life spaces for different users. This does not necessarily refer to the physical development and provision of transport infrastructure and services but rather inclusive planning of streets to meet the needs of different users in the framework of the totality of mobility, social, economic and ecological lifeworld of a community. Streets are not just stone and asphalt with no meaning attached to them; rather, they are part and parcel of the life of a community.

Geographers and other scientists have contributed to the study of "streets for all" and "liveable streets" but the bulk of this work has been done in high-income countries (Anderson 1991; Appleyard 1981; Bosselmann et al. 1999; Conservation Law Foundation 1995; Engwicht 2008; Holz-Kay 1998; Monheim and Monheim-Dandorfer 1990). It is also noted that in critical geography literature, there has been limited attention paid to examining equity and political economy issues in urban street policy and planning. Among the few research efforts to address this omission are Henderson (2009) who has mapped three competing ideologies (progressive, neoliberal and neoconservative) about parking in San Francisco, Vasconcellos (2005) who has examined equity in transport externalities among low and high-income groups in the city of São Paulo in Brazil, and Khosa (1995) who has analyzed the role of transport in the apartheid political struggles in South Africa. The present paper is therefore a much needed effort to subject urban transport policy and planning with regard to "streets for all" to a critical geographical analysis. This kind of analysis is necessary in view of the fact that a fixation on motor vehicle transport in the world today has led many people to cast a blind eye not only to the exclusion of others in sharing street space but also to the companion disadvantages of high rates of oil consumption, environmental pollution, greenhouse gas emission and the destruction of the cultural heritage embodied in settlement structures (Banister 2005; Conservation Law Foundation 1995; Monheim 1996; Tunali 1996; Whitelegg 1993; World Council of Churches 1998). The destruction of existing settlement structures has been tolerated in order to build new streets and settlements; cycling, walking and old settlement structures have been seen as old-fashioned and out of date. The urban sprawl, facilitated by motor vehicles, has been regarded as normal and modern, and the inefficiency created by rapidly increasing congestion and time losses has been dismissed as a temporary problem which can be solved by building more streets and parking facilities (Monheim 1996, 2002; Whitelegg 1993). This shows that sharing available street space among different users is one of the many challenges that have arisen with motorized traffic and the general process of urban development.

The central concern of this paper is that though urban streets should be multi-purpose in use and developed as part of enhancing not only physical movement but also movement or mobility in its diversity, as recently argued by Sheller and Urry (2006), this consideration has tended to be neglected in transport planning and practice in many cities of the world with regard to the needs of pedestrians, cyclists, street vendors, disabled persons and communities. The contribution of this paper lies in examining this issue in an urban setting in a developing country, namely the city of Nairobi in Kenya. This paper uses the concept of "streets for all" as the analytical basis to critique the neglect of pedestrians, cyclists and street vendors in transport policy and practice in the city of Nairobi. This paper goes beyond providing a critical situational analysis of the neglect to call for a reversal of this neglect by discussing practical and policy implications of instituting a "streets for all" policy.

"Streets for All" Model in Transport Research and Policy

Urban roads have been developed to facilitate movement of people and goods. These roads can easily be developed to mainly serve the needs of car traffic, ignoring the fact that urban streets are used by different modes of transport and for different functions and activities. There is growing literature arguing that the planning of urban streets should not be limited to the physical development and provision of road infrastructure and services but also include the integration of streets into the social, economic and ecological fabric of a community. The central thesis of "liveable streets" and "streets for all" models is that streets are life spaces, and they are part and parcel of the social, economic and political life of a community. This thesis has been advanced by researchers such as Appleyard (1981), Conservation Law Foundation (1995), Monheim and Monheim-Dandorfer (1990), Tiwari (2005), Vasconcellos (2001) and Whitelegg (1993). These researchers have examined the negative effects of focusing mainly on car traffic in transport planning and have argued for limiting motor vehicle growth, providing infrastructure and facilities for pedestrians and cyclists, encouraging and developing public transport, developing child-friendly urban environments, promoting compact city planning (as opposed to dispersed planning), and creating space for street vendors.

The neglect of some road users in urban transport planning is a matter of concern to a growing number of urban transport researchers, practitioners and activists. One of the concerns is that there is a contradictory situation in which developing countries are repeating the same mistakes that were made in transport and urban planning by Europe, North America and Australia, through the long-term neglect of the needs of pedestrians, cyclists and street vendors (Banister 2005; Conservation Law Foundation 1995; Vasconcellos 2001). These

researchers point out that European countries made the mistake of allowing the motor vehicle to unduly influence the development of the transport system and urban land use pattern to the extent that the liveability of the urban space itself was sacrificed (Appleyard 1981; Conservation Law Foundation 1995; Monheim 1996). This unfortunate situation has prompted a number of researchers and organizations to issue a wake-up call to check the peddling of the disastrous model of Western motorization and not transfer it over to the developing countries (Vasconcellos 2001; Monheim 1996; Tunali 1996; Whitelegg 2003).

The key proposition we advance in this paper is that streets should be seen and developed with consideration of different users and functions in transport and urban space, and this requires inclusive planning for multiple street activities. Unfortunately, this has yet to be undertaken in many countries and cities of the world. Instead, we witness threats to a number of road users and street functions. Transport literature refers to a certain section of road users, in particular, pedestrians, cyclists and public transport passengers, as constituting a vulnerable group (see for instance, Mohan 1992; Nantulya and Reich 2002; Peden et al 2004). While the value of the use of this term in pointing to road user groups at risk is appreciated, it is limited if it is not used along with an examination of the inherent structural neglect of these road users in governmental transport and urban polices and programmes. Perhaps this term needs to be qualified further and the "neglected and victimized road user group" is proposed as an improved, alternative wording. In fact, it may be necessary to think of analysing vulnerable (or faulty) transport planning systems, rather than vulnerable road users. The neglect of pedestrians, cyclists and street vendors in transport planning in different parts of the world reveals the persistence of inequity in the development and provision of urban and transport space that urgently needs to be examined and challenged as part of an effort to promote equity in urban and transport planning (Vasconcellos 2001). As argued by the Living Streets Organisation of the United Kingdom (2004) there is a need to reclaim streets for pedestrians, which is basically an effort to restore the balance between different and complementary uses of the streets: travel, movement of goods and people, entertainment, children's play, public meetings, commercial activities, demonstrations and social change activities.

It should be noted that the struggle for equity in the allocation and use of streets is part of the history and experience of motorization and transport planning. The 'streets for people' versus 'streets for cars' contest can be traced in the history and experiences of different cities and countries around the world. The core concern in "streets for all" policy is promotion of equity and democracy in the allocation of transport and urban space (Vasconcellos 2001, 2005). Whitelegg (2004) has pointed out that a solution to the current car-dependent

urban development requires a fundamental re-engineering of society to bring about a sustainable, equitable, accessible and socially just transport and land use planning system. In the context of "streets for all" model, there are specific policy and planning implications with regard to infrastructure investment, traffic management, street design, land use planning, governance and planning practice, to recognize and cater for different street uses and activities. In this paper, we use the example of pedestrians, cyclists and street vendors to illustrate the neglect and inadequate attention paid to their needs by urban transport policy and practices in the city of Nairobi, and call for a "street for all" policy in this city. The paper is based on archival research.

Pedestrians, Cyclists and Street Vendors in Nairobi

Historical and Contemporary Setting

A number of researchers who have traced the history and socio-economic life of Nairobi and other cities in Africa generally observe that the peripheral capitalism and concomitant colonization that took place in Africa in the nineteenth century contributed to the formation of transport, economic, political and social systems of these cities (see, for instance, Lee-Smith and Lamba 2000; Macharia 2007; Murunga 2005). The urbanization process in Nairobi manifested and has continued to be constructed as consisting of diversity in the form of men and women, black and white, rich and poor, young and old, formal and informal sectors, and traditional and modern.

Lee-Smith and Lamba (2000) identify three transformative periods in the history of Nairobi. The first transformation took place with the establishment of the colonial city, beginning in 1899 when the Kenya–Uganda railway line reached Nairobi. The colonial city was based on British law and social norms that excluded the local population. The second transformation came with independence in 1963, which saw the creation of a multi-ethnic African state. The third transformation is traced to 1992 with transition to multiparty democracy. This categorization may not be fully accepted but it is used here to point out the fact that when analyzing transport in Nairobi, one is actually raising questions about the decision-making process, urban planning models, and a wide range of factors that have influenced the development and planning of this city for over 100 years. The transport system of Nairobi, and related political and planning structures, has therefore to deal with this reality, including responding to the increasing demand for transport associated with increase in population. Nairobi has a rapidly growing population, having risen from about 11,512 in 1906 to 266,795 in 1962, 509,286 in 1969, 827,775 in 1979, 1,324,570 in 1989 and 2,137,000 in 1999 (Republic of Kenya 2000). Presently, the core Nairobi

region has a population of about 3,000,000 people (Ministry of Nairobi Metropolitan Development 2008), most of whom stay in low-income residential areas and informal settlements (Kinyanjui 2008). In 2008, the Nairobi Metropolitan region was created, which brings together 15 independent local authorities with a population of 4,700,000 people (Ministry of Nairobi Metropolitan Development 2008). This means that planning for transport in the new metropolis has to consider the needs of pedestrians, cyclists and street vendors.

Bicycle use is documented in the history of Nairobi. The International Bicycle Fund (2004) notes that throughout the first part of the twentieth century the largest employers in Nairobi were government departments and corporations like railways, which encouraged their workers to use bicycles to travel to work. They reported that the government even built some bicycle paths and employers were even required to provide parking facilities for bicycles. Such a spirit could be revived if there were a renewed commitment to promoting the use of bicycles in Nairobi.

In 2002 a new government came to power in Kenya, which developed a strategy on integrated national transport policy that noted the lack of an urban transport policy. One of the document's recommendations was to incorporate non-motorized and intermediate modes of transport into the urban road network and to provide incentives to support local manufacture of these modes of transport (Republic of Kenya 2004). In addition, there were also a number of institutional, economic and administrative reforms indicated in the 2003–2007 economic recovery strategy of the Government of Kenya (Government of Kenya 2003). While the political recognition of the need to develop and improve non-motorized transport is laudable, the challenge rests in the implementation of the recommendations in policy documents.

Movement Pattern and the Economy of Nairobi

Pedestrian and cyclist transport, along with other types of movement across Nairobi, are due to the separation of activities in time and space, and are a reflection of the structure and organization of socio-economic activities within the urban space of Nairobi (Khayesi 1998). This is why existing patterns of movement are closely related to residential areas, location of work places, shopping zones and entertainment spots. This urban complex generates an intricate web of patterns of movement characterized by its great diversity of purpose, origin, destination, mode of transport, direction and volume of flow.

The results presented in Table 1 underscore the high prevalence of walking in the city of Nairobi. Compared to walking, bicycle use has a lower percentage in the modal split, partly due to fear about the safety of this mode of transport (Omwenga et al 1994; Rukunga 1990; World Bank 2002). The results presented in Table 1 do not tell all there is

Table 1: Findings of selected studies on movement, modal split and space economy in Nairobi

Study	Main findings
Nairobi Urban Study Group (1973)	• About 44.6% of daily household trips were made on foot, 38% by private transport and 14% by public transport • 2.6% of daily household trips were made by bicycle • Trips are for essential activities such as work, school, personal and business
Omwenga et al (1994)	• Modal split for combined first four trips in the day: walking was first (47%), followed by public transport (41%), private car (7%), bicycle (1%) and others (1%)
Rukunga (1990)	• Forty-five respondents (67%) walked, 15 (22%) used public transport and eight (11.2%) used company vehicles
World Bank (2002)	• All trips: walking (47%), public transport (42%), car (10%), non-motorized transport (1%) • Public transport trips: mini-bus (70%), bus (30%)
Dirks et al (2003); Kinyanjui (2005, 2008); Macharia (2007); Mitullah (2003, 2006)	• Street vendors, informal and micro enterprise sector are creating employment and generating wealth for the economy of Nairobi and other towns in Kenya • Street vendors and informal sector workers are involved in other social, economic and political activities of Nairobi and other parts of Kenya, thereby contributing to different aspects of national life

to know about the dynamics of movement across Nairobi. Part of this failure results from poor and inadequate research designs and analytical techniques that gather and analyse information focused on only one mode of transport used for a trip, usually the one being used at the time of the interview or for the larger portion of the trip (Vasconcellos 2001), and is also a major limitation of travel surveys conducted in other parts of the world. The reality of trip-making patterns is that often more than one mode of transport is used, requiring detailed specification when collecting data on modes of transport to establish what mode (walking, bicycle, bus, train and car) is used for what portion of the trip. An exceptional effort to go beyond this limitation was made by Omwenga et al (1994), who conducted a survey of transport mode use in 302 households in a low–medium income area in Nairobi. The importance of walking in these households was emphasized by the fact that a large proportion (over 40%) of the first trip of the day and the most important daily trip was made on foot.

Past and Current Efforts at Accommodating Pedestrians, Cyclists and Streets Vendors

There is a tendency to uncritically place the blame on the victims of system failures in a number of domains of human life, including

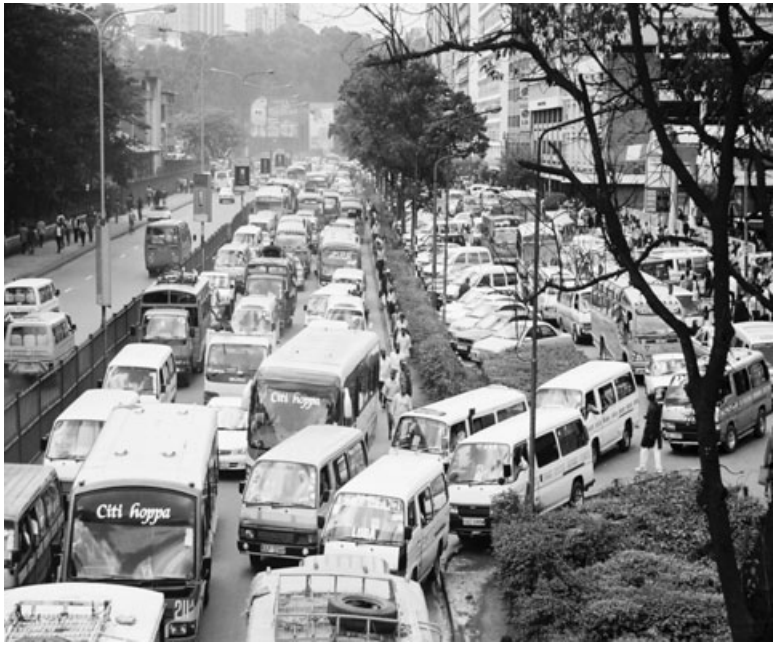

Figure 1: Pedestrians at peak hours in the central business district (copyright Nebe 2007)

desertification, education, poverty, HIV/AIDS and road safety. Khayesi (2003) has shown that there is a tendency to blame road traffic collisions in Nairobi on the unsafe and careless behaviour of pedestrians. In addition, street vendors are seen as being a group generating problems in a modernizing urban economy (Hart 2007; Mitullah 2006). This one-sided, unfair apportioning of blame fails to acknowledge the fact that, in reality, the difficult situation of pedestrians, cyclists and street vendors in Nairobi is partly a result of the failure of governmental transport and urban policies and programmes. As pointed out in Peden et al (2004), it is important that road safety issues are examined within a systems framework that takes into account and gives equal footing to the road, the road user, the vehicle and the overall environment. This framework is of great relevance and can be used effectively when analyzing and planning for the entire transport system, or specific aspects of it, such as pedestrian and cyclist access as well provision of space for street vendors.

The existing road networks in Kenyan urban areas, including Nairobi, do not cater well for non-motorized transport and street trading (Khayesi 2003; Figures 1–3). While the urban infrastructure for pedestrians is inadequate or unattractive (Omwenga et al 1993), walking still remains the most important mode of transport in Nairobi and other urban centres. The city of Nairobi is unique in that it has a fairly flat terrain for cycling, but this potential has not been fully exploited (World Bank

Figure 2: Sharing street space by traders, pedestrians and public transport (copyright Mary Kinyanjui 2008)

Figure 3: The working environment for street trading in some parts of Huruma city market, Nairobi (copyright Mary Kinyanjui 2008)

2002). Instead, urban transport planning in Nairobi, as in most African cities, has been largely tailored to meet the needs of motorized traffic though only a small proportion of the population uses this mode of transport (de Langen 2005).

Another important dimension of dynamics of urban movement, largely not covered in existing research presented in Table 1, is that of the effect of road and residential barriers on pedestrian and cyclist mobility in Nairobi. A recently constructed 25 km middle barrier on Uthiru Highway has had a negative effect on the street and life space of the community living next to this highway in Nairobi because of the inadequate provision of pedestrian-crossing facilities. As this has been a problem on most highways built previously in Nairobi, one would have expected the problem to have been addressed when the new highway was built, and adequate pedestrian-crossing facilities would have been provided but, unfortunately, this was not the case. In addition to not providing adequate space for pedestrians, cyclists and vendors, there is a form of gated city development systematically taking root in Nairobi in the form of enclosures, blocked routes and fenced residential areas that make walking and cycling difficult.

Pedestrians, cyclists and street vendors in Nairobi face a number of problems (Table 2, Figure 3). As can be seen, these problems are related to a lack of facilities and a supportive policy and institutional framework. Two questions that arise from Tables 1 and 2 are: Why do these problems persist despite the importance of walking in the modal split, the sustainability benefits of cycling and the contribution of street trading to the urban economy? Why does car-dependent urban transport planning persist in Nairobi? These questions constitute a dilemma in the sense that although information and evidence are available on what may be done and what should be avoided, more or less the same mistakes of car-dependent urban transport planning are made repeatedly from one setting to another. There are a number of factors that have been advanced in the literature to explain this persistence, including the concepts of path dependence and locked-in solutions, the role of the political elite and middle class, the vision of a global and successful city among planners and political leaders, and the role of the professional planner, encompassing his training and mental models (Adams 2006; Barter 2004; Low et al 2003, 2005; Mees and Dodson 2007; Monheim 1996, 2002; Newman and Kenworthy 1999; Robinson 2002). These are important issues that need to be comprehensively examined in the case of Nairobi and other cities in the developing world to shed light on why these cities are building for cars when very few of their citizens currently own or drive cars. While the authors realize the importance of this kind of analysis, they note that it is beyond the scope of the present paper and will leave this for another study.

"Streets for All": Policy Options

Negotiating "streets for all", especially for pedestrians, cyclists and street vendors, requires sustained advocacy and an unrelenting effort on

Table 2: Problems facing pedestrians, cyclists and street vendors in Nairobi

Problem	Source
Pedestrian and cyclist facilities • Inadequate, broken down, unusable and non-existent in some areas • Unattractive, filthy and open walkways • Poor and narrow pavements • Poor street lighting • Limited walking space on pavements (often used for informal sector activities and parking) • Unsafe underground passages and pedestrian footbridges (for the few that exist)	Lamba (1994); Omwenga et al (1993)
Pedestrian road traffic fatalities • Disproportionately high, for example, between 1977 and 1994, there were 6,005 road traffic fatalities in Nairobi, with pedestrians constituting the largest number (3929 or 64.5%)	Khayesi (2003)
Bicycle use • Lack of and inadequate cycling facilities • Threat of road traffic injuries	Howe and Bryceson (2000); World Bank (2002)
Space, access and facilities for street vendors • Lack of trading space and sites for operation • Harsh environmental conditions in spaces used[1] • Constant harassment of street vendors by urban authorities • Street crime and insecure working environment • Restrictions on amount of goods that one can take on the bus, mini-bus or train • Lack of storage facilities	Mitullah (2003); Omwenga et al (1993)
Institutional and policy framework • General urban transport policy[2] in Kenya the state has tended to ignore non-motorized transport for a long period of time and focused on motor vehicles; this is now changing, especially in the new national transport policy that includes a substantial dimension on non-motorized transport • Inadequate investment in non-motorized transport facilities. Though the city authorities have made an effort to address non-motorized transport modes, eg the non-motorized project of the 1990s, these have not been sustained and expanded to cover most parts of the city • Problematic co-ordination among institutions involved in urban transport planning and service provision; several agencies and institutions concerned with various transport matters at a variety of levels • Unfavourable by-laws for street vendors, resulting into constant conflicts between street vendors and law enforcement officers of Nairobi city council	Kinyanjui (2008); Macharia (2007); Mitullah (2003); Omwenga et al (1993); Republic of Kenya (2004); World Bank (2002)

many different fronts: research, policy, road infrastructure development and capacity development. The challenge facing Nairobi is to find a way to better cater for pedestrians, encourage cycling and accommodate vendors in the planning of its streets, thereby making a positive

contribution to the realization of a "streets for all" policy in this city. There are practical and policy implications in the three possible courses of action that are open to Nairobi: procrastination, symbolic action and radical approaches. This section discusses each of these options and derives implications for Nairobi. Rather than concentrating on the specific details for Nairobi, the paper presents generic principles and issues from which local application for Nairobi can be derived by researchers and practitioners.

Procrastination: "Waiting for Godot"

Procrastination is a typical response of policy makers and the general population in a motor-vehicle-oriented society when it comes to pedestrian and cyclist issues. This option involves putting off the needs of pedestrians and cyclists and continuing to promote motorization. Procrastination is basically waiting for Godot (Beckett 1948) to come and solve the problems facing pedestrians, cyclists and street vendors. As the waiting goes on, car traffic volumes increase, and the street network and parking capacity are expanded to meet the needs of motor vehicle transport. This leads consequently to a drastic reduction in the space, comfort and security of pedestrians, cyclists and street vendors. In the eyes of policy makers and the general population who pursue this option, non-motorized transport is seen as no transport at all (Monheim 1996).

If the policy makers and residents of Nairobi choose to procrastinate, the needs of pedestrians, cyclists and vendors will not be critically addressed, and motorized traffic will continue to enjoy the right of way at the expense of non-motorized traffic. This will be in opposition to a strong argument that walking is transport (Hillman and Whalley 1979), an argument which applies equally to bicycle use. A study by Jacobsen (2003) revealed that the likelihood that a given person walking or cycling will be struck down by a motorist varies inversely with the amount of walking or cycling: a motorist is less likely to collide with a person walking and cycling if more people walk or cycle. As there are numerous health and environmental benefits associated with walking and cycling (Dora and Phillips 2000; Woodcock et al 2007), a neglect of pedestrians, cyclists and street vendors in Nairobi would have an adverse effect on the road safety situation as well as on the quality of the environment and the urban space in this beautiful city.

Symbolic Action: A Little is Better than Nothing, But There is More on the Way

This is essentially an appeasing strategy, aimed at cosmetically pleasing the affected people and community in an attempt to keep the lid on a

potentially explosive social situation. The basic argument behind this approach is that a little is better than nothing, as there is hope to do much more in the future. It involves undertaking a few but inadequate and short-lived intervention measures that are largely token, serving to make people believe that pedestrians, cyclists and street vendors are cared for while not really changing priorities in transportation policies. These have little positive impact and do not efficiently and systematically improve the situation. The rationale behind such a strategy is for the policy makers not to risk running into a conflict with the interests of the car lobbies which might lead to limiting the privileges of motorists. Politicians are also likely to agree to taking only a few measures for promoting the mobility of cyclists and pedestrians, which are not costly and do not disturb car traffic flows and capacities (Monheim 1996).

Symbolic measures are just piecemeal and do not radically challenge nor seek to reverse the status quo. They could, for example, include the construction of a few pedestrian bridges, some isolated traffic calming schemes, a small pedestrian zone for the city centre, undertaking some remarking of zebra crossings which may not be respected by motorists and some public pronouncements to show concern for pedestrians, cyclists and street vendors. An example of a symbolic action is the recent closure of a parking lot along Mama Ngina Street in Nairobi and turning it into pavement spaces that are now used by pedestrians. While this is a laudable step, it is important to remember that it is only a drop in the ocean of the myriad problems facing pedestrians and cyclists in the city of Nairobi (Tables 1 and 2), and its impact should not be exaggerated when there is yet so much more to be done.

Radical Measures: Engaging the Reverse Gear

Radical measures require a drastic change in transport policy and practice (Monheim 1996), along with a new vision for addressing and negotiating the needs of pedestrians, cyclists and street vendors in transport policy. The policy fixation on the needs of mainly motorized transport requires a drastic reversal, informed by revisiting existing transport planning models used in Nairobi, in order to develop a comprehensive and inclusive policy and institutional framework that incorporates the needs of pedestrians, cyclists and street vendors.

Radical measures require a re-orientation in transport policy and planning practice from motor vehicle fixation to a traffic compatible model in which consideration is given to the needs of all road users, including pedestrians, cyclists, street vendors and the users of public transport. Among the measures that can be implemented are bike and ride initiatives, creating pedestrian friendly surroundings at bus stops, permitting the mixed use of bus lanes by buses and bicycles, and by providing space for the operation of street vendors. Urban planning

for motor vehicles must be rethought in the light of declining fuel resources and the emerging problems of greenhouse gas emissions and global warming. It is not an easy matter to resolve, given the automobile path-dependent planning that has taken root in many cities around the world (Adams 2006; Barter 2004; Low et al 2003, 2005; Mees and Dodson 2007; Monheim 1996, 2002). However, this path needs to be revisited and more attention to be given to the needs of other modes of transportation, along with a concern for environmental quality and sustainable urban land use. The car must no longer define the scale of urban planning and road design, in light of the overall complexity of patterns of urban mobility and land use. Strong political will and initiatives will have to underpin radical approaches in order to reverse the current problems facing pedestrian, cyclist and street vendor life in Nairobi. Unless this is done, the same mistakes and consequences in transport planning made in the developed countries will be repeated in the city of Nairobi and other cities in developing countries. This implies the need to heed the call to check the peddling of the disastrous, failed model of Western motorization in developing countries (Banister 2005; Monheim 1996; Vasconcellos 2001; Whitelegg 1993, 2003).

In the case of Nairobi, improvement of pedestrian, cyclist and street vendor life requires effective local level government leadership and a citizenry committed to change and to making a difference, that will go beyond mere goal formulation, target setting and the production of policy documents that are not always implemented. This represents a challenge and a call to urban leaders and citizens to take risks and be innovative, and to chart a new course for transport and urban planning and management in Nairobi. As already noted, there were bicycle lanes on some roads in Nairobi in the 1960s and 1970s. There were also bicycle parking lots at some work places. These facilities were neglected and left in disuse. In the 1990s, under the Sub-Saharan Africa Transport Policy Program, Nairobi was chosen as one of the four cities for implementing non-motorized transport pilot projects. Three distinct interventions were planned: building special infrastructure for pedestrians and cyclists, introduction of traffic calming measures and supply of bicycles (Pendakur 2005). Non-motorized transport interventions were implemented on Jogoo Road and Nile Road in Nairobi. Pendakur (2005) reveals that proposals for more significant interventions on Jogoo road were abandoned because the city engineer did not approve the designs on the ground that they comprised narrowing the road and pedestrian crossing. Subsequent to the pilot non-motorized transport activities, pedestrian bridges and lanes had been constructed on this road. Like other cities, the non-motorized transport pilot interventions in Nairobi demonstrated that relatively small interventions can lead to significant improvements (Pendakur 2005). This project also significantly increased awareness

among politicians, planners, engineers and the public of the importance of addressing the needs of non-motorized transport users (Pendakur 2005). At the macro level, in 2002, the government of Kenya eliminated bicycle import duties. This reduced the price of imported bicycles, making them affordable. The recently developed transport policy paper has a section on non-motorized transport in urban transport (Republic of Kenya 2004).

As already indicated in Table 1, walking is a dominant mode of transport in Nairobi, making up 47% of all trips (World Bank 2002) but the existing transport policy and planning framework inadequately serves the needs of pedestrians through providing infrastructure and addressing road safety problems (Republic of Kenya 2004). We are proposing that the existing levels of walking should be much more effectively catered for. In terms of street design, this requires provision of pedestrian facilities and services on the roads: footpaths, pavements, footbridges, pedestrian crossing and street lighting,[3] supported by enforcement of traffic rules and a good public transport system. Such facilities would facilitate the movement of pedestrians, addressing the lack of space shown in Figures 1–3. The ongoing efforts at improving pedestrian facilities in Nairobi (Valley Road, Jogoo Road, Mama Ngina Street, Kenyatta Avenue) are encouraging steps and good practice that will hopefully be developed fully to have a continuous system rather than a one-time reactive and popular response.

Cycling forms about 1% of the modal split in Nairobi. We are proposing that transport policy and planning in Nairobi should encourage the use of this mode of transport. Instead of producing demand for driving, transport policy and planning in Nairobi should be producing a demand for cycling by providing cycle-friendly infrastructure, supported by bicycle repair services and availability of good and affordable bicycles. As already stated, the draft Nairobi metropolitan plan presents a vision of a modern city that is largely dependent on an efficient transport system in terms of times saving. The draft mentions new road construction, improvement of existing network, dualling of a number of main roads and promotion of public transport (Ministry of Nairobi Metropolitan Development 2008:28–29). Pro-streets for all groups need to review this document to ensure that policy documents and programmes being developed cater for the needs of ordinary life of the city, including walking, cycling and street trading.

While there are difficulties and conflicts in achieving a "streets for all" policy in Nairobi as outlined above, there are some practical methods that may be used to reverse the current transport policy orientation. These methods have been strategically used by players in a few cities in the world to initiate change within the complexity and struggles of urban planning of these cities. What these players seem to have explored is how to take advantage of emerging windows

of opportunities and they have sometimes encouraged others to use the opportunities within their specific contexts, taking into account the existing political situation and the available strategies: arguments, technical information, demonstrations, pilot projects, political pressure, and institutional transformation. We shall present a few examples to show how radical measures were initiated in what seemed impossible situations to change.

The example presented in Box 1 on Bogota shows that a sustainable solution is indeed possible and that reversals to the failed Western model of transport planning that disproportionately caters for the private motor vehicle are feasible in developing countries. The Bogota initiative came about partly due to a courageous decision taken by the city authorities. Enrique Peñalosa, the mayor of Bogota during whose time the measures in Box 1 were implemented, indicates the choice they made as follows:

> When I was elected mayor of Bogotà and got to city hall, I was handed a transportation study that said the most important thing the city could do was to build an elevated highway at $600 million. Instead, we installed a bus system that carries 700,000 people a day at a cost of $300 million. We created hundreds of pedestrian-only streets, parks, plazas, and bike paths, planted trees, and got rid of cluttering commercial signs . . . (Peñalosa 2003).

Box 1: Car wars

Yet one city in the developing world has broken the vicious circle of transport growth, poverty, pollution and inequality and has turned transport policy upside down to benefit the poor and reward the pedestrian.

In Bogota, Colombia, Enrique Peñalosa, the mayor from 1998–2001, held a referendum and reallocated transport budgets to improve the quality of life for the poorest. The results were staggering. The city embarked on an intensive programme of building cycling and pedestrian-only routes, including a car-free route, 17 km long, connecting some of the poorest parts of the city with the facilities they need to access, including jobs. Parks were built on derelict land, canals cleaned up and car-free days implemented. In October 2000, the citizens of Bogota voted in favour of excluding cars from the city in the morning and afternoon peaks from 2005.

Peñalosa introduced a car number plate system that required 40% of the cars to be off the roads during peak hours on two days a week, and this produced a reduction in pollution. More than 80 miles of main roads are now closed for seven hours every Sunday and, each week, up to 2m people come out to enjoy the clean air, the freedom and the safe environment. On one weekday in 2002, a car-free day was set up and 7m people went to work without a car. In a subsequent poll, 82% supported the concept.

Bogota's approach is based on creating an equal and vibrant city where no one need fear the oppression that pervades so many other developing countries' transport systems. Peñalosa wanted a reliable and free-moving bus system that was affordable and that used road space on the surface. An underground or metro, he reasoned, was simply too expensive for a poor country and, in any case, was supported only by rich people because it keeps intact as much road space as possible. Now the buses carry more than half a million people every day, are reliable and affordable, and give the poorest groups in Bogota as much accessibility to jobs and facilities as the rich have. The bus system also covers its cost and makes a profit while every metro in the world swallows up huge subsidies, which are further losses from health education and sanitation programmes (Whitelegg 2003).

It is not only in Bogotà that a tough decision had to be made to improve transport conditions for pedestrians, cyclists and public transport. The case of Curitiba shows how a risky and decisive small radical step that a leader takes can lay the foundation for a future "streets for all" policy. Cervero (1998) notes that in the 1960s and 1970s, when Brazil was under military dictatorship, national policies favoured large infrastructure projects financed through foreign loans. This meant that "most Brazilian cities were building motorways and viaducts to accommodate cars and trucks . . . Proposals to restrain the automobile were viewed as leftist politics" (Cervero 1998:271). In the case of Curitiba, a window of opportunity to reclaim downtown for pedestrians came in 1971 with the election of Jaime Lerner as mayor. The story of how this was achieved goes as follows (Cervero 1998; McKibben 2005). Lerner insisted that instead of obliterating Curitiba's central street, Rua Quinze, by an overpass, it should become a pedestrian mall. The problem was how to convince the store owners that a pedestrian mall would be good for them as there was no other pedestrian mall in Brazil.

Lerner thought that people would love a pedestrian mall if they had a chance to see it. He planned carefully with the department of public works and on a weekend in the winter of 1971, they started on Friday evening to build the pedestrian walk. An army of strange-looking silhouettes surrounded access to the main street downtown. They jackhammered the pavement, put down cobblestones, erected streetlights and kiosks, and planted thousands of flowers. They completed this on Sunday and expected a major opposition from store owners on Monday. Instead of resistance, the storeowners who had been threatening legal action were petitioning the mayor to extend the mall. The next group that was offended were members of the local automobile group. They threatened to reclaim the street the next weekend by driving their cars down it. Lerner and the city administration decided not to call the police. Instead, the city workers laid down strips of paper the

length of the mall. The auto club arrived and found dozens of children sitting in the former street painting pictures. This example shows the need for decisive and strategic decisions on the part of leaders and other stakeholders in the continuing struggle to negotiate streets for pedestrians, cyclists and street vendors in the automobile-dependent cities of the world.

Urban transport engineers and planners also have a role to play by incorporating the needs of pedestrians, cyclists and street vendors in urban transport design. There are a number who are already doing this and we shall provide a few illustrative examples. Geetam Tiwari of the Indian Institute of Technology often challenges transport and urban planners to include facilities for pedestrians, cyclists, street traders and informal sector (Tiwari 2007). She has demonstrated how this can be done in a recent design for a high-capacity bus system in Delhi by incorporating these users. There is a group of African researchers and practitioners working on guidelines for designing for non-motorized transport. In addition, analysis of trip patterns and infrastructure for non-motorized transport in Nairobi, Dar es Salaam and Cape Town is one of the central themes of the recently launched African Centre of Excellence for Studies in Public and Non-motorized Transport (African Centre of Excellence for Studies in Public and Non-motorized Transport 2009). It is hoped that this research will inform policy on interventions needed.

An innovative but controversial effort to create a shared street space was initiated by a Dutch engineer, Hans Monderman (Adams 2007; Hamilton-Baille 2008). He promoted a design approach known as "shared space" that sought redesigning of the streets and the surrounding public space to encourage each person to negotiate their movement directly with others. Monderman inspired and developed a fundamental change in thinking about the relationship between people, places and traffic. He worked in the towns and villages of Friesland in the north of the Netherlands, and he succeeded in challenging many long-established assumptions about safety and the relationship between pedestrians and traffic. He removed almost all the traffic lights, pedestrian barriers, stop signs and other road markings that had been assumed to be essential for the safe movement of traffic (Adams 2007; Hamilton-Baillie 2008). Local authorities in Accra, Dakar, Dar es Salaam, Johannesburg and Cape Town are currently exploring and/or taking steps to improve facilities for non-motorized transport and develop high-capacity bus systems, perhaps following the example of Lagos that launched a bus rapid transport scheme in 2008 (Sub-Saharan Africa Transport Policy Program 2009). A number of cities in high-income countries provide space for street trade by blocking whole or parts of streets for use by these traders for specified hours on specified days. In addition, some have pedestrian zones in the central business districts.

The examples presented above are indicative of steps and actions by different individuals and institutions, which, if persistently and radically pursued, contribute to realizing a "streets for all" policy in different cities. We do not wish to recommend a blueprint for Nairobi but these examples show the importance of maximizing on windows of opportunity that may open up in Nairobi from time to time. The Ministry of Nairobi Metropolitan Development, established in 2008, offers a possibility to incorporate pedestrian, cyclist and street vendor needs into its policy documents and programmes. The ministry is elaborating its vision in a draft document entitled "Nairobi Metro 2030: a vision for a world class metropolis, the first and foremost in Africa and the world" (Ministry of Nairobi Metropolitan Development 2008). Though this document recognizes that inadequate attention has been given to non-motorized transport, the thrust of the proposed programme of intervention focuses on an efficient transportation system that minimizes travel times and reduces externalities. Specifically, the document identifies the key activities will be on developing road transport infrastructure, mass rapid transit system, commuter train service, road safety and integrated transport information system. It is our hope that a non-motorized transport programme will be incorporated into these programmes and will form a key component of the vision for a world class metropolis.

With regard to street trading, the Nairobi city authorities need to revisit the tendency of allocating temporary occupation sites on an ad hoc basis, often in response to a crisis (Kinyanjui 2009). For example, Kinyanjui (2009) shows that the hawkers' riots in Nairobi in 2006 and 2007 prompted the city authorities to quickly convert a section of Muthurwa Railway Residential Estate into a hawkers' market where the government built a *matatu*[4] terminus and stands for the hawkers. The idea was to get the hawkers out of the central business district, where they were perceived to have become a menace, obstructing pedestrians and stifling traffic movement, making the streets dirty and offering unfair competition to other registered rent-paying businesses. The city authority's efforts to keep the street hawkers out of the central business district were met with stiff resistance. The hawkers organized a security ring that engaged the city security officers in running battles, resulting in destruction of life and property as the hawkers refused to relent. However, after some time, the riots were quelled and a solution arrived at to convert Muthurwa into a hawkers' market. As Kinyanjui (2009) points out, whether this is a lasting solution or just a postponement of the problem remains to be seen. This example illustrates the main argument in our paper, the need to allocate street space to multiple activities and uses. Kinyanjui (2009) interprets the hawker's resistance as saying: "we are no longer transitory, we are here to stay and we need to be planned for". It can be seen that the street battles had to do with ownership,

identity and control of the city infrastructure, especially in the central business district.

Conclusion

This paper argues that implementing a "streets for all" policy would improve the existing conditions for pedestrians, cyclists and street vendors in the transportation and urban space of the city of Nairobi. This requires dedicating financial and human resources to incorporate the needs of these street users in road design, land use planning, transport infrastructure investment, urban policy and decision-making, legislation and services. Implementing a "streets for all" policy will require innovative approaches and radical decisions on the part of political leaders, planners and citizens. The concern about inclusive transport planning, which forms a basis for a "street for all" policy, is at the centre of a number of studies, programmes and institutions. For instance, there is growing acceptance and emphasis on inclusion of non-motorized transport and informal economy into transport and urban planning (Banister 2005; Behrens 2005; Tiwari 2007; World Bank 2002), partly to address the problem of climate change and also to improve the liveability of the urban environment. Organizations such as the Institute for Transportation and Development Policy, Sustrans and Home Zones are promoting and advocating for integrated transport and land use strategies that cater for all road users.

Our suggestion is that the 15 local governments of the Nairobi metropolitan region, working with groups of dedicated citizens and partners, should use the new Nairobi metropolitan region strategic document, existing institutional arrangements and the changes taking place in the metropolis as a window of opportunity to formulate a framework and a strategy for "streets for all" policy for the Nairobi metropolis. Such a venture would require innovative leadership and strategies on the part of the mayor, councillors, other city leaders, city engineers, transport planners, other stakeholders and citizens of Nairobi, who would have the possibility of reversing the prevailing pedestrian, cyclist and street vendor problems as well as addressing other transport and urban development problems in the Nairobi metropolis. Borrowing from Henderson (2009), we wish to emphasize that a "streets for all" policy, like other sustainable transport issues such as parking, is part of the global struggle over a more socially just and ecologically sustainable urban future. As Henderson (2009) has argued, this struggle is not just about movement but more importantly about the politics of mobility, how cities are organized and configured and for whom. These observations underscore the need for pro "streets for all" institutions and individuals to be radically innovative at political, planning, research and participation fronts, drawing on competence, resources,

creativity and windows of opportunity from within and outside Nairobi and Kenya.

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Endnotes

[1] Mitullah (2006) notes that most of the spaces that street traders occupy are considered illegal since the spaces have not been set aside for trade. She further notes that in cases where they are allowed to operate, the spaces are considered temporary and eviction occurs at the will of urban authorities.

[2] It should be noted that though a clear urban transport policy and framework was lacking for a long period of time, there are a number of other sources of policy guidance on urban and transport development, including the 5-year national development plans, directives from the central government and minutes of the city council. The absence of a road transport policy does not necessarily mean total absence of direction for action. The issue then has to do with utilizing existing policy guidance and institutions to address issues for pedestrians, cyclists and street vendors.

[3] Provision and maintenance of street lights by the Nairobi City Council was problematic for a fairly long period of time until the "Adopt-a-Light" Intervention started to restore street lighting in 2002. "Adopt-a-Light" is a public–private partnership with the Nairobi City Council. The project is funded through revenue collection for outdoor advertising in the city and sponsor payments for adopting a light. The businesses that adopt a light get a return on investment by placing advertisements on the streetlight (UNISA Center for Corporate Citizenship et al 2007). Lack of street lights in the central business district and residential areas partly contributed to street crime as muggers easily operated under the cover of darkness.

[4] A *matatu* is a small-scale public transport vehicle found in Nairobi and other parts of Kenya.

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