Children, transport and traffic in southern Ghana

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Abstract

Socio-spatial studies of children's mobility in sub-Saharan Africa are rare and constitute a major research gap. This paper focuses on school children's experiences of travel, transport and traffic, with particular reference to southern Ghana. Drawing on interviews with children, parents and teachers, we examine children's travel patterns to school and broader travel patterns associated with their widespread contributions to household production and reproduction. We also review associated issues of road safety in both urban and rural contexts.

I INTRODUCTION

This paper focuses on children's experiences of travel, transport and traffic in a non-Western context. The vast majority of research on children's travel and associated safety issues has been conducted in urban Europe and North America. Here we aim to provide tentative perspectives on children's mobility in the very different context of sub-Saharan Africa, drawing both on the limited published literature and our own very preliminary field research in southern Ghana.

Our aim in the paper is not to make definitive statements about children's mobility and travel in sub-Saharan Africa, but rather to suggest some of the issues which could shape future research. Variations in travel by gender and age are major themes in our discussion. We consider children's mobility as pedestrians, cyclists and passengers in motorised transport and briefly review road safety issues. Our focus in this paper is specifically on children who attend school, at least from time to time, because our interviews mostly took place with children at school. However, as we emphasise below, this represents only a limited subset of all children in sub-Saharan Africa.

II BACKGROUND

1. Children, transport and traffic in sub-Saharan Africa

Children are attracting growing attention among researchers working in sub-Saharan Africa. With around half the population consisting of children under 14 years in most African countries, such attention is long overdue: children of 6 years and above often make a substantial contribution to household production and survival strategies. In the

1990s increased poverty and dependence on children, associated with Structural Adjustment Programmes and the spread of AIDS, led to a spate of studies on child poverty, street children and children's work (Preble 1990, Bonnet 1993, Bradshaw et al. 1994, Velis 1995, Robson 1996, Porter and Phillips-Howard 1996, Kariuki 1999). This has been accompanied by broader studies concerned with children's rights and violence (Petty and Brown 1998). However, socio-spatial studies of children's mobility and transport in sub-Saharan Africa remain extremely limited: a major research gap.

A few studies have touched on the mobility of African children in urban settings including early research by Schildkraut (1981) in Moslem Kano, Nigeria, where the mobility of children - particularly young girls - is essential for the maintenance of wife seclusion. In a very different context, Young and Barrett (2001), consider the spaces of homeless and marginalised Kampala street children: their hidden 'safe' spaces, separate from the adult city. The most substantial urban study of children and transport in sub-Saharan Africa to date, however, is probably that conducted in Accra, Ghana's capital city, in the first half of the 1990s by Grieco, Apt and Turner (1996). This is discussed below, in the section on Ghana.

Work on children's mobility and transport in rural sub-Saharan Africa is similarly sparse. Cindi Katz's research in rural Sudan (1993) probably provides the most important contribution to the study of African children's spatial knowledge (and makes interesting comparisons with conditions in the urban US, which we discuss later). She shows how, from 3 or 4 years, children deliver messages and carry food around the village, and subsequently travel more and more frequently, depending on their birth-order position. First-born children tend to assume responsibilities at a particularly early age. By the age of 7 or 8 children start to travel to the fields in order to contribute to agriculture and a range of domestic responsibilities such as fuelwood collection. She argues that boys and girls alike shared 'a rich geographical knowledge' through their play and work around the village: they experience a high degree of self-managed sequencing and a great deal of spatial autonomy, with few sex or status related differences evident until late in childhood. Only when girls reach puberty in the Moslem Sudan village do their spatial horizons contract: as they marry and have children from their early teens they withdraw increasingly from public space

Whether dealing with urban or rural contexts, child mobility studies in Africa do not usually focus on school children *per se*, because so many children - unlike their Western counterparts - are not in school. Low school enrolment rates are common in many African countries, particularly in rural areas. Throughout Africa, with few exceptions, more than half the children in any given age-group fail to attend school regularly (Bonnet 1993). This is a factor both of the opportunity costs of children's time spent at school (as opposed to contributing to family well-being through paid or unpaid work) and the high outlays which have to be made in school fees and/or associated costs such as uniform. Girls' enrolment rates are generally much lower than boys'. Even when children attend school, they commonly perform a range of household duties both before and after classes. Apprenticeships also may operate alongside, or take the place of Western schooling (Robson 1996). The boundaries between 'school' and 'work' are often blurred (Roberts

1998), not least when teachers regularly take their classes to cultivate their own land during class hours!

There are few studies directly concerned with school transport in a developing country context. A 1970s review of school children's mobility to Secondary Schools in 1970s Uganda (Gould 1973) noted that poor transport services forced the majority of children to walk to primary school while the low density of secondary schools (mostly located in urban or peri-urban areas) required most children to live away from home: this situation still pertains widely across sub-Saharan Africa. More recent work in Brazil by Vasconcellos (1997) also has relevance for many African rural contexts. This emphasises the way low density of rural schools and limited availability and high cost of public transport contribute to forcing most rural children to abandon formal schooling after relatively few years. Vasconcellos also raises issues of road safety on poorly maintained public transport driven by poorly trained drivers over poorly maintained roads. Many of these issues have resonances in the rural Ghana context we discuss below.

Coverage of road safety issues in general, and children's road safety in particular, has been surprisingly sparse in the literature on African transport, given that accident rates in some African countries are among the highest in the world. ~~The World Health Organisation estimate that leading causes of mortality among children WHERE? will not be childhood infectious diseases but injury-related losses by the year 2020, with transport being the largest cause of injury (Murray and Lopez 1996).~~ Epidemiological trends in low income countries show that mortality rates of childhood infectious diseases are declining while rates of injury-related death and disability are increasing (Mock et al 1999). The World Health Organisation estimates that the years of life lost due to infectious diseases and due to injuries, mostly transport related, will be equal worldwide by the year 2020 (Murray and Lopez 1996). Recent publications on children and road safety in Africa include a study of Nigerian conditions by Adesunkanmi et al (2000) which shows that the majority of child accident victims are pedestrians and mostly over 5 years old: they were often injured while trading at the roadside. Another study in Ghana, in Kumasi city and Brong-Ahafo Region by Mock et al. (1999), emphasises the particularly high exposure of children to accidents in both rural and urban contexts (in the rural area 46% of pedestrians and 30% of cyclists injured were children, and in Kumasi 52% of pedestrians and 33% of cyclists injured were children.) They argue that, even in rural areas, transport-related injuries are among the most significant injuries in terms of mortality. One important omission in much of the work on road safety cited above is a gender perspective.

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2. The Ghanaian context: children's life-worlds and mobility patterns

Children's life-worlds and mobility patterns in Ghana have to be considered in the wider contexts of national economic conditions and local culture. 'Childhood' is a very different concept in low income countries like Ghana from that prevalent in Western urban societies. Urban and rural children from an early age commonly contribute to household production and family incomes, in a process widely perceived in Ghana as positively

aiding children's socialisation in the extended family and the community (Government of Ghana 1992:21).

However, deteriorating economic conditions have put new pressures on families in recent years, forming an important back-cloth to children's life-worlds today. World Bank/IMF-sponsored Structural Adjustment Programmes, first introduced in Ghana in 1983, raised costs of food, education and health care provision through the 1980s and 90s, substantially increasing the pressure on women and girl children in particular. Specific impacts on children arguably include the increased reliance on income from children's work such as petty trading, poorer nutrition, declining school attendance and reduced access to health services due to the introduction of user fees and lower incomes (Anyinam 1994, Konadu-Agyemang 2000). *'Primary education may still be free in Ghana, but the requisite parental contribution in the form of books, furniture, and other supplies has effectively driven many children……out of the school system.*' (Konadu-Agyemang 2000:475). Stunting and wasting was found among 30.1% of children under 3 years in rural Ghana in 1993, and among 15.7% of children under 3 in urban areas. In Central Region, our study area, the figure was 23% (1). Child poverty and deteriorating child welfare is an issue of growing concern in Ghana (GNCC 1997, 2000).

Mobility is an important feature of many children's lives in Ghana. This may take the form of both permanent and seasonal relocation associated with residential mobility, and more restricted daily mobility associated with household production and reproduction and with education. Neither type of mobility is well documented, however. The daily mobility patterns of children, for instance, tend to be subsumed in broader studies of women's work.

Ghanaian children may experience residential mobility from a relatively early age for a number of reasons. Child fostering, for example, is widespread: parents may give their children to relatives or even non-relatives such as elderly people as companions and domestic or marketing assistants (Schildkraut 1981, Bledsoe and Brandon 1992, Turner and Kwakye 1996). Fostering may involve children moving merely to the next compound but, in the case of older children, can result in migration to distant regions of the country. Education is one of the major reasons for child migration and often for child fostering. Secondary education often takes the form of boarding school or residence with an urban relative, particularly - but not only - for rural children. This is due to the fact that secondary schools are mostly located in larger centres of population, local transport is poor and costly and secondary schools have national catchments (i.e. students do not have to attend the school closest to home). Children may also accompany their parents - or travel alone - when seasonal migrations for work occur, for instance to cocoa farms in the forest zone, and among pastoralist groups in northern Ghana. Grieco et al (1996: 162) report girl children as young as 8 being sent by their parents from poor families in rural northern Ghana to work as market porters (kayayoos) in Accra, where they live with relatives or other home town contacts.

The most important contribution, to date, on children's mobility and transport in Ghana comes from a research study of female traders and their transport and travel patterns

conducted in Accra in the early 90s (Grieco, Apt and Turner 1996, Turner and Kwakye 1996, Turner, Grieco and Kwakye 1996). These studies show how the falling off in transport provision associated with adjustment measures (increased cost of vehicles and spare parts etc.) has increased dependence on both women and children. Children are increasingly central to the economic organisation of households. Timing of school shifts is thus crucial since this affects their ability to perform work. Girl children of school-age play a particularly significant role since they provide labour in petty trading outlets which compensates for absence of other adult household members due to transport delays. This can impact severely on girls' access to education (Grieco et al. 1996:3, 12).

Grieco et al. also provide case study material about cycling among girls and boys in Accra. This illustrates the impact of diverse ethnic backgrounds on child access to transport. Unlike children from northern Ghana living in Accra, children from southern ethnic groups are not encouraged to cycle by their families. Among boys it is perceived as dangerous: the behaviour of 'rebellious, deviant school age males'. If girls dare to ride they are considered of 'questionable sexuality' (Grieco, Turner and Kwakye, n.d.). Gender access and attitudes to cycling are among the issues we consider in our study of Central Region (an area dominated by southern ethnic groups) since, in this low income context, cycling offers a potentially significant contribution to the solution of transport problems.

3. Methodology and the Ghana study

The ways in which boy and girl children are incorporated into the research process have changed substantially in recent years. White (2001) observes a shift in approach in studies of children in low income countries, whereby children are viewed as active and participatory, rather than passive and vulnerable. She stresses the importance of seeing children in the context of wider relationships, not just as a client group, and draws attention to the significance of birth order in addition to age, sex and class. Aaronson (2001) similarly emphasises the need to consider children as economic and social actors in their own right, and the importance of researching in partnership with children, while recognising that children are inextricably linked to the fortunes of their families and their communities (also see SCF 2001 and Robson 2001). Thus a recent study of street children in Lusaka (Hickey 2000) emphasises the empowering potential of street life for some children (in social and economic terms), in spite of its dangers. These points have significance for our discussion.

Defining whom we should include as a child is another issue (Roberts 1998). Bonnet (1993), for example, focuses on children under the age of 15 years. In our small case studies we worked with students in school, some of whom would be better classified as young adults (since we encountered an upper age limit as high as 22 years in the case of JSS students, for instance). However, the vast majority of our school pupil respondents were aged 18 years and below and our discussions with parents and teachers about mobility focussed on children under 18. Studies with school children in an African context - where children often miss years of schooling due to such circumstances as

inability to pay fees, and wide age ranges are consequently commonly encountered within one class - have to bear such issues in mind.

III CENTRAL REGION FIELD STUDY

Our observations in this paper draw on data we generated from very small pilot case studies in varying accessibility settings in Central Region, Ghana. The economies of the settlements where our studies took place are based largely on agricultural production (maize, cassava and vegetables principally for local markets and, in some settlements, cocoa for export). The study locations were: a) five villages located on poor earth/gravel roads between 3 and 25 kms from a paved road, b) three relatively small towns (Daewurampong, Apam and Eshiem) all on secondary paved roads, and c) one larger town, Assin Foso, on a fairly new inter-city highway in good condition. Apam and Assin Foso are both district capitals and because of their function as administrative and service centres contain a greater diversity of socio-economic groups than the other settlements. Transport conditions varied substantially from the very low and infrequent services available in the villages, where commercial vehicles (mostly based in settlements along paved roads) visit only on market days, to the extremely heavy traffic context of Assin Foso which is located on the busy highway linking the cities of Kumasi and Cape Coast.

Village studies focussed on Primary/Junior Secondary School pupils, their teachers and parents. Town studies (except in the case of Assin Foso) incorporated work with Senior Secondary pupils (there are no Senior Secondary schools in the study villages) and their teachers. The majority of work was qualitative in approach and took the form of focus groups and individual discussions. Additional interviews about accident rates and road safety took place at police stations, a local hospital, with settlement heads and with the Road Safety Commission and other government officials in the capital, Accra. Our intention in these pilot studies was to simply gauge the range of issues concerning children's mobility and travel which would require further investigation, and the parameters which would need to be borne in mind when designing such studies (2).

In the discussion which follows we first characterise children's mobility and travel patterns to school by age, sex and other relevant factors, drawing attention to similarities and differences between the low traffic volume context of the villages and higher traffic densities in the towns. In both school and non-school contexts we consider the propensity for and constraints on children's independent unaccompanied travel. This is followed by a broader review of children's mobility for other purposes.

1. Travel to school

(i) Pupils resident in off-road villages

In our off-road study villages the majority of children of all ages and both sexes who attend primary and JSS schools travel there on foot. The maximum distance walked to school is usually reported to be around 3-4 kms from satellite settlements in the village area, though a maximum of 6 kms was recorded for one off-road village. This travel to school pattern is hardly surprising, since most children attend the government-funded primary or JSS situated within or close to the village, if their parents can afford the fees and related expenses. In none of these villages are there more than 3 children who cycle to the local school, the remainder all walk.

In three of the five off-road study villages a few children travel out 10 - 25 kms to nearby non-government private schools. These are perceived to offer a slightly better education (including smaller class sizes) and are increasingly common in this region of Ghana, seemingly encouraged by the perceived declining quality of government schools. A village blacksmith, for instance, reported that he sends his 6 year old daughter to the private school because *'the teaching here is not effective*'. Somewhat to our surprise (given the lower status of women in society in this region), more girls appear to be sent out to the private schools than boys (though as overall numbers are very low, it is difficult to assess the significance of this observation). Poverty and poor transport availability, however, combine to limit access to such institutions: only children whose parents are relatively well-off or who are particularly committed to their children's education will pay the necessary fees and transport costs.

Although the flow of children from off-road villages to private schools is small, it is discussed in some detail below because it illustrates well the difficulties and costs of accessing out-of-village schools, and the efforts which some parents and children are prepared to make in order to obtain a (perceived) better education. Children who depend on the normal village transport services will often only be able to attend a private school on market days (when the villages are better served by local transport). At the village of Lome, for instance, just 4 children travel outside the village to private schools using local transport: there is no school bus. They have to pick up a tro-tro (minibus) or taxi in the village and they are always late. On Tuesdays and Fridays they do not attend school at all, because there is no transport leaving the village on the route to the school location on those days. Three of the children are from the same family, the daughters of a woman trader (the Chief's niece). At a second village, Abora, a child of eight, a girl, attends the Islamic school a few kilometers away in the nearby small town and walks to school by herself. The third village (Sampa) is served by a mini-bus from a local private school in another settlement ca. 8 ~~?? K~~kms away. This recent initiative by the private school's proprietors has helped the school to expand its roll. About 15 children from Sampa now attend the school: the youngest is 4 years old, the oldest about 16. Parents are charged a monthly transport fee (20,000 per pupil, in addition to the termly school fee of 34,000 cedis for primary pupils or 39,000 for JSS. However, it is difficult to ensure regular attendance at schools outside the village, even when a school bus is provided. The private school bus which serves Sampa breaks down regularly.

The bus operated by the private school which serves Sampa and other similar school buses we have observed are frequently in very poor condition - though perhaps no worse

than other vehicles operating locally. Many are in poor mechanical condition and children may not reach school on some days because the bus has broken down. (We interviewed one school proprietor as his school bus was pushed round the yard, in an effort to get it going: it seemed to be out of action about one day per week.) There are no seat belts, the buses are commonly loaded far beyond capacity so that some children have to stand or sit on others' laps. The drivers are mostly poorly trained. Yet when we asked parents whether they were concerned about their children travelling by school bus or other motor transport, this was not considered an issue. Typically, we were told: *'I know the driver is an adult and can take good care of them.'*

A bus driver we interviewed described his daily routine. He starts picking up children (aged from about 2 and a half years through to 17 years) from the school catchment villages around 6 a.m. and finally reaches school around 8 a.m. The bus he operates has no windows, and the starter motor does not work, so the driver and his mate usually park the bus on a hill. In the afternoon the school closes at 2 p.m. and they drop the last child around 4 p.m. The journey is entirely along unpaved roads. In another case the school bus undertakes three separate journeys each morning and afternoon because there are so many pupils to convey. In this case the bus starts picking pupils up at 5 am and the third busload finally arrives at the school at 8 am *'if there is no mechanical fault'* (driver interview). The school in this case usually delays lessons for about 45 minutes, in case the bus turns up. Transportation home in the afternoon starts at 2.30 p.m. and the last child may be home by 6 p.m. The pick up schedule is varied in this case so that different villages are served first on different weeks. If children's parents owe the transport fare they may be barred from attending school.

Senior secondary schools are generally located at similar or greater distances from the study villages than the private primary/JSS institutions discusses above. Only a few older children from the off-road villages attend senior secondary school, because of the fees and associated costs of attending such schools. We encountered one case of an 18 year old boy who cycles each Monday to his school about 15 kms away and returns at the weekend (he cannot afford the 3000 cedi tro-tro journey and won the cycle in a lottery). His weekly visits home are necessary because his parents cannot afford to pay for his termly expenses in one lump sum. Usually, however, such pupils reside with relatives close to the school or board during term-time. For the majority of families in the villages, senior secondary school is not an affordable option.

Pupils in urban contexts

In the smaller towns along secondary roads where we undertook surveys, we found a pattern of predominantly pedestrian traffic to school similar to that prevalent in the off-road villages, despite the availability of more regular motorised transport services. Of 190 school children interviewed in Daewurampong, for instance, only 12 children (6 girls and 6 boys) travel to school regularly by motor transport, and only 15 children (3 girls and 12 boys) travel to school regularly by cycle.

In Assin Foso, the district headquarters on the main Cape-Coast Kumasi highway, by contrast, we found much more use being made of motorised transport by school pupils.

This may be attributable not just to the widespread and regular availability of public transport in this town, but also to the number of salaried workers and business people resident there, some of whom own motorbikes and cars. The common use of motorised transport by pupils is clearly in evidence at the 800 pupil kindergarten/primary/JSS located on the outskirts of the town along the main road. This school of 4 to 16 year-olds is attached to a teachers college and seems to be particularly popular with parents since it is used as a demonstration school. Although some pupils walk for up to around 5 kms to this school from other roadside settlements and many children walk to school from Assin Foso itself, substantial numbers of children are to be seen arriving by vehicle (3). According to the headmaster, the fees are no higher than in the village schools, but there is a strong PTA and children's parents are expected to contribute, so this institution 'is not affordable by villagers'. The parents include government staff and local business people who may have vehicles themselves or can afford to pay for their children's transport. Kindergarten pupils are often brought to this school by taxi from the busy town: a group of parents will make an arrangement with a taxi driver who drops the (unaccompanied) children at school each day and the parents pay a monthly fee. A few (mostly kindergarten) children come on their fathers' motorbike: 'two behind, one in front'. Very few pupils (all boys) cycle to this school (about 3 primary boys and 2 JSS boys), but many children above the age of 6 negotiate the busy road on foot.

Pupil travel to Senior Secondary Schools

The situation at the three senior secondary schools where we interviewed staff and pupils is rather different again, since boarders constitute a substantial proportion of total pupils. At Apam SSS, for instance, there are 222 day pupils and 1400 borders. This school is located about one and three-quarter miles from the nearest town, Apam, on the main paved road. The boarders come from towns as distant as Tamale in Northern Region and only travel home about 3 times per year. They mostly live on site in the school boarding house. Most day pupils attending this school live in nearby settlements, between about 3 and 8 kms distant. Those from Apam sometimes walk to school, a journey which takes about 30 to 45 minutes on foot, because the transport cost is 1,200 cedis per day (the same price being charged to children and adults.) Pupils from 5-8 kms distant tend to travel to school by tro-tro (local minibus). Some boys cycle to SSS, but girls virtually never: *'in Senior Secondary School they [girls] prefer the tro-tro*' (teacher, Apam SSS). This probably reflects the relatively priveleged socio-economic background of many such secondary school pupils.

Issues of spatial autonomy: accompanied and unaccompanied travel to school

In all three locational contexts (off-road village, small town, busy town), we asked pupils, parents and teachers about accompanied and unaccompanied travel to school. There were striking similarities, despite the differing traffic contexts: only very young kindergarten children were sometimes accompanied by parents (usually mothers in the villages, fathers in Assin Foso) or older siblings to school. Moreover, such accompanied journeys to school were usually made in the off-road villages and small towns because of young children's reluctance to attend, rather than for any perceived dangers en route to school.. *"Only if the child is refusing to come to school does the parent accompany the child…the parent needs to pamper the child by buying food before going to school;*

otherwise parents do not concern their time with that." (teacher, Dawurampong ~~Lome?~~)
Even in Assin Fosu, where children have to walk along a very busy highway, some children from the age of about 4 and most children from the age of 6 walk to school on their own. Officials in Accra confirmed that few children in Ghana are accompanied by adults to school beyond the age of about 3- 5 years (i.e. kindergarten). It is common even for 3 year-olds to find their own way to kindergarten in the off-road villages.

School travel incorporating multi-purpose journeys
One of the most interesting features of children's travel to school in the Central Region context, and probably a feature common across the villages and small towns of sub-Saharan Africa (though we have no data to support this supposition), is the tendency for home to school journeys to incorporate other activities related to family productive and reproductive tasks. As discussed in the literature review, children are commonly viewed as a domestic resource and are expected to contribute through a wide range of tasks. This may substantially lengthen both route and journey times to school.

On their way to and from school, many children, particularly in the off-road villages, are expected to carry loads for their parents and family members: corn for the grinders, for instance (which will then be picked up after school and taken home). One girl from a satellite village described how she carries a bucket of rice from home every day to the grinders in the village 3 kms away where her school is located. In some cases, when the loads include cassava or firewood, this is a substantial burden (up to around ~~??~~ 40 kg), but around 1 rubber weight (8 kgs) for a boy or girl of about 8 years old, up to 4 rubbers for a boy or girl of 15 years is common. At one off-road village, Abora, both boys and girls from the age of about 10 regularly carry large loads of firewood to the district headquarters and sell it there before they come to school: a journey of around 10 kms~~??~~ in total. Some of the boys earn pocket money to pay for cycle pleasure hire through this activity. Teachers observe that carrying these very heavy loads impairs pupils subsequent work in school due to tiredness, headache etc. Some teachers suggested this affects girls more than boys because they are expected to carry more on the way to school.

Only in the case of Assin Foso, the biggest town among our study settlements, did we find an exception to this pattern. While parents will still expect children to carry for them after school, there is apparently less need in this urban context for most (town-based) children to combine the school journey with other tasks to the same degree evident in the villages, because most services lie in relatively close proximity to urban homes.

2. Travel for other purposes

In addition to focussing on school- related journeys, we were keen to establish a more complete picture of the spatial world of the children we interviewed: the extent and nature of school children's additional non-school-related travel in the study settlements; where they travelled, for what purposes, with whom, and the furthest distance they had been from home.

Travel in off-road villages

In the off-road study villages many children travel regularly with their mothers to sell goods in local markets (and indeed may have to miss school in consequence), but usually have only limited experience of travel (with parents or relatives) to distant places. Access and transport services are poor in the villages, as discussed above, so the majority of children's non-school journeys are made as pedestrians and take place within a vicinity of about 5 kms of the settlement, within the boundaries of the village lands, where family land is concentrated.

Within this village area regular journeys have to be made to the farms, water points, to gather firewood, on hunting expeditions in the case of boys, etc. These journeys are made in the early years with elders and siblings, but by the age of about 6 or 7 both boys and girls appear to be able to travel widely within the village domain as they undertake their errands, often unsupervised and with little constraint, except with regard to taboos which may bar them from sacred groves and particular footpaths.

Many of these journeys are made carrying heavy loads, because of the lack of alternative means of transport. Water and firewood tend to constitute the heaviest loads; cassava is the heaviest agricultural product commonly carried. Children's loads are increased as they get older, a fact apparent through observation, and explained to us by parents, teachers and children in discussion. Tiny children of 3 or 4 will carry a small tub of water; by the age of 8 boys and girls will be expected to carry one-quarter of an adult's load, by 10 years a girl will often be expected to be able to carry a full tray of cassava (c. 20 ~~??~~ kg.) and by the age of 15 a girl is expected to be able to carry a full adult's load, ranging from around 40 to as high as 70 kgs. Boys are thought to mature later to a full adult's load and we heard claims from women in some villages that a boy or man is never be able to headload the same loads as a woman, due to differing physiological characteristics. There are prevailing cultural notions in this region, among both women and men, that girls and women are more suited to head porterage than males due to their stronger necks.

Informal group discussions with children allowed us to draw further tentative conclusions about children's headloading activities, who carries most and why. Children simply *expect* to headload. This applies to both girls and boys (though boys will usually not carry loads - firewood and water - for their mothers beyond the age of about 20.) Children both in class and informal discussions often disagreed about whether boys or girls carry the heaviest loads, but data from traffic surveys we made suggest that girls carry more regularly and that their loads are often heavier (see table 1 below) than those carried by boys at the same age. In the off-road village of Aworabo, where we conducted a class discussion on travel and headloading with 23 class 6 primary school pupils, of the 23 pupils (all aged between 12-15 years), 21 said they regularly carried goods for their mother. The two exceptions were both boys. Here every child said they often suffered neck, waist or head pains from carrying produce. The heaviest loads they carry are cocoa and firewood. Seven of the older girls and boys in this class had carried the equivalent of as much as 3 rubbers of cocoa at one time.

Comments in informal discussion with adults suggested that often it is foster children who experience the heaviest burden in terms of headloading as in many other domestic duties. We have only one piece of evidence on this issue, from a small group discussion with children, where we found the one child in the group who was fostered (she lived with with her aunt) carried the heaviest loads and suffered what appeared to be chronic headache and neckache. This is clearly an area which needs further research. Indeed, there is a surprising lack of data regarding headloading by children (or for that matter adults) in Africa and its physiological impact, in general, suggesting the need for further investigation.

Maximum ~~Average?~~ loads carried by children according to age
(data from a weighing exercise at points along village roads and paths, Gomoa and Assin district~~? ,date?~~ May-July 2000)

Age	Male (in kg)	Female (in kg)
0-6	7	6
7-8	8.5	12
9	10	11
10	10	18
11	15	17.5
12	19	18
13	18	22
14	20	27
15	28	21
16	26.5	36
17	39	34
18	25.5	35

Travelling out from off-road villages: more questions about spatial autonomy

Many parents in the off-road villages, while unconcerned about their children's autonomous travel within the village area, appear very reluctant to let their children travel unaccompanied on longer journeys which require use of motor transport. When we canvassed opinions from parents about the age at which a child might safely *travel alone* locally by motor transport we were told that the child would need to be about 8 years old, whether female or male. For longer journeys they commonly suggested about 12-15 years, for both boys and girls. The major concern expressed by parents about sending a village child alone on a journey was that they would 'miss their way'. Thus, we interviewed boys of 16 who had only rarely travelled by motor vehicle, never travelling beyond the nearest major market centre in their home district and, even here, only in the company of their mothers. A mother of a 13 year-old girl explained how she had just - for the first time - sent her daughter alone by tro-tro to market in the district headquarters 25 km away. She gave her reasons for not having sent the girl at a younger age: *'she may get missing, or may lose her way or she may forget the things I have told her to buy'.*

The level of education and 'cleverness' of the child seem to be the normal measures by which both men and women assess the ability of their children to travel unaccompanied, though in a small group discussion among women in one of the villages (Aworabo) it was suggested that *'boys are braver than girls. At age nine a boy can travel on his own but a girl must travel with someone because she will be frightened'*. However, this statement was subsequently qualified: nowadays girls can also travel on their own, *'because of illiteracy many were frightened but now they have come to understand that everyone travels on their own.*' A woman resident in Takoradi who was visiting a relative in the village drew comparisons between children's mobility in that city and here in the village: *'because Takoradi is a city we allow children to travel on their own more than in this village, because illiteracy is greater here [in the village] than there*.' The father of two sons, interviewed separately in the same village, made a similar comparison: *'In urban areas a child of nine can travel on their own but in rural areas a child of 15 may not travel on their own because of illiteracy. … Those in urban areas have seen many cars and tarred roads and other signs …and if a child from the urban areas wants to travel to places he's never been before he can read directions without missing his way.'*

Children also put much emphasis on education: a 15 year old girl in Sampa told us you would need to be 17 in the village to travel any distance alone, *'because those living in the rural areas find it difficult to travel on their own'* but in urban areas children of 10 or 12 might travel alone *'because they are educated'*. The whole group (of about 17 children) with whom we were discussing these issues agreed that the crucial factor was education, not gender or age. In another group discussion with children, this time a class discussion with the 23 primary school (class 6) children in Aworabo village, only 4 pupils (three girls aged 12, 13 and 15; one boy aged 15) said they had ever travelled by motor transport on their own. The class thought a girl needed to be about 13 or 14 before she travelled on her own, a boy between 12 and 15. Those who had not travelled on their own voted the experience would be exciting and frightening in roughly the same proportions. When we asked children in the off-road villages about their travel experiences, we found the main concern, as with their parents, revolved around the dangers of getting lost.

At the district headquarters in Assin Foso the JSS headmaster we interviewed expressed a similar view to that common in the villages, despite the urban context. Children could not be expected to travel long distances by motor on their own until they were about 11 or 12. According to the headmaster, getting lost was perceived as the main issue, though the idea of children getting into a car with *'armed robbers or highwaymen and people with bad notions*' was a second possibility (the only interview where such possibilites were raised). Road accidents were of lesser concern, as in all previous discussions on this topic, where a certain fatalism was widely evident: *'when you are travelling you just commit yourself to the Lord and you are through' (*headmaster, Assin Foso*).*

Travel among Senior Secondary School pupils

In the Senior Secondary Schools (where many boys and girls are boarders from elsewhere in Ghana) and children range in age from ~~?~~ 16 to ~~?~~ 20 there is, not surprisingly,

a rather different attitude to travel. Many pupils here reported having travelled widely beyond Central Region, commonly to nearby regions, particularly Greater Accra, in a few cases to the far north of Ghana. They travel for a variety of reasons: notably for social purposes, but also to collect money (often school fees from parents and family resident elsewhere), and to a lesser extent to visit sick relatives. Of the 123 Senior Secondary School boys and 105 girls interviewed, the vast majority of both girls (77%) and boys (82%) are allowed to travel on their own, though two-thirds of girls believed their parents worried about them travelling, compared to only one third of boys. Parents' concern is perceived to revolve mainly around dangers of having an accident (52% of boys, 49% of girls) and getting lost ((9% of boys, 25% of girls). Only 9% of girls and 2% of boys thought their parents' principal concern was 'molestation'. In village discussions the possibility of molestation was never raised.

3. Road safety issues: risk, accident rates and safety training

Along with our research on child mobility we undertook preliminary enquiries in Central Region about the incidence of traffic accidents and road safety teaching. In the *off-road villages* there are virtually no reports of conventional road accidents involving children occurring within the village (though certainly children have had accidents while headloading and cycling). The only cases we came across related to a an 11 year old girl hit by a motorbike during a visit to her sister in Accra, and a school party which had been travelling in an open lorry to a football match. The lorry was overloaded and three children from the village were hurt when the lorry tyre burst and the vehicle overturned. Even in the remotest of the off-road study villages (25 kms off-road), however, mothers said they taught basic principals of crossing the road to their children.

In and around the small towns, children are at greater risk of traffic accidents. Motorised traffic is sporadic along the often potholed secondary paved roads and there are no designated pedestrian areas. National speed restrictions are not widely enforced and many vehicles are badly maintained and operate with inadequate brakes etc. Apam police headquarters reports that most accidents are caused by vehicle mechanical faults. Police in Ghana, however, are commonly lax in their attitude to traffic offences and small bribes are often sufficient to avoid further proceedings. Drivers (who often operate without a driving licence) avoid reporting accidents if at all possible, in order to avoid encounters with the police (National Road Safety Commission, 2001; interviews, road safety officials, Accra). In Dawurampong, where 189 children were interviewed about road accidents, 16 of the 118 boys (13.5%) had had a road accident, and 6 of the 71 girls (8%) interviewed. These road accidents ranged from serious injury to minor cuts and bruises. An examination of the data by age suggests that the incidence of accidents among boys increased with age, particularly in the age range 16+ , whereas with girls the incidence was more even across the age groups. However, the total number of cases in each age set is insufficiently large to allow any reliable interpretation of this data. The issue needs further investigation with a larger data set. The *Senior Secondary School* data which all relates to pupils resident on secondary paved roads and in similar traffic

contexts to Dawurampong suggests very similar accident rates: 17 out of 116 boys (14.7%) and 10 out of 103 girls (9.7%) had had an accident.

Accidents were also common in the busy town of Assin Foso. At the demonstration school located along the major highway, in the previous 6 years the school's pupils had experienced 5 serious road accidents, though only one fatality. The school had tried posting teachers at the road junction, but found supervision difficult: *'you know children, when you leave them a short time there is havoc*!' The headteacher considered girls more likely to have a road accident than boys: *'boys, even if they are playing on the road know how to manoevre'*. Elsewhere, however, discussions with teachers and others supported the view that boys are more likely to have road accidents than girls, both as pedestrians and cyclists:*'boys are always on the street… in most cases girls are in their kitchen*s' (teacher, Lome village)

Investigations at the various schools where we conducted interviews suggested that road safety is often taught merely as an adjunct to normal lessons at primary and JSS level. It commonly includes training about crossing a busy road, and a jingle about traffic lights. The fact that this is a non-examined subject seems to contribute to its low profile. No teacher we interviewed had received specialist road safety training themselves. Only in the case of Assin Foso demonstration school there is reportedly much more attention to road safety - in assembly as well as in classes - because of the busy highway close by.

IV DISCUSSION

Our small field studies in Central Region suggest that children's mobility, their access to and control over transport, and their associated spatial range are shaped by a nexus of personal attributes and the cultural conventions and socio-economic conditions within which the child's life world is embedded. Age, gender, birth-order position, status and responsibilities within the family, family status within the community, and community location are all significant.

In this region, as is commonly the case in Sub Saharan Africa, the majority of children's spatial movements are a product of their contribution to meeting household reproductive and productive tasks, especially in the rural context (White 1982, Robson 1996). From an early age children accompany and assist their household elders within the village area. Their assistance may also be called on for other family ventures which expand their spatial field, notably trading enterprises and migrant farming. The actual daily mobility pattern of the child will depend on the specific tasks which the child is required to fulfil within the household labour allocation strategy and on less concrete factors, such as the routes which local deities may proscribe. Temporal rhythms are shaped by seasonality, market schedules and cultural taboos which require or forbid activities in particular places on specific days and seasons.

Multipurpose journeys

Our research indicates the very high frequency of multipurpose journeys made byy children. The importance of multi-purpose trips has been increasingly recognised in a developing country context, but only in terms oif adult multitasking. Given the lack of child mobility studies in general, this is hardly surprising. As part of household time and labour allocation, time used to travel to school can be maximised when the school is located (as is commonly the case) near to other service infrastructure such as a water point or grinding mill. The walk to school for educational purposes thus serves to maximise the scheduling of household reproductive and productive tasks. Since girls commonly take a dominant role in household chores in areas like Central Region, they also experience a higher degree of involvement in multi- purpose trips; the girl child is more likely to walk home from school carrying a bucket of water or maize on her head than a school bag and school books. It is also not unusual to find children - particularly girls - responsible for marketing produce in the nearest market centre in the early morning before school starts, even if that entails a longer journey to school. Children's time is rarely considered a valuable commodity (Bartlett 2001).

School-travel

Although a trend to the establishment of private schools is now increasing the complexity of mobility patterns among children in rural Ghana, the great majority of schoolchildren at primary and JSS level still walk to the nearest school. In off-road villages, even if transport services exist, the far higher cost of rural transport on bad roads per kilometre compared to transport on good roads (roughly double in this region, Porter 2002), and the high cost of rural transport in general, is a major issue for parents who wish to send children to schools outside their own village.

The irregularity and unreliability of conventional transport services clearly constrain children's daily mobility patterns even when their parents are prepared to pay for transport: they are often late or do not reach school at all, particularly on non-market days when village transport is particularly sparse. Some village schoolchildren attending specialist/private schools use the high cost services of private school-buses, which are increasingly common in Ghana. Transport to a private school can cost an additional half of the school enrolment fee per term, yet some parents are willing to pay for a perceived better education, despite the transport costs and difficulties in accessing those schools.

Urban areas usually have a range of better quality schools, including senior secondary schools. However, access to such schools can still be difficult, even for urban children who live within easy walking distance, since although urban schools charge no more in fees than other government schools at the same level, a variety of extra charges are commonly imposed by the school's PTA - as we say in the case of the Assin Fosu school - in order to enhance facilities. Moreover, some schools have better reputations than others. It is common in Ghana for Secondary School pupils from middle class families to travel long distances to gain entry to the school of their choice: boarding is very common. However, we have no more than anecdotal evidence to suggest the extent of such movements to school, the social make-up of the pupils involved, the age and gender patterns of mobility, or the reasoning behind the decision to travel to boarding school.

Cycle travel

One of the most surprising findings in our study is the very low incidence of cycle use by both urban and rural children, despite the bicycle's potential to provide relatively high personal mobility at relatively low cost. Access to bicycles could serve to maximise schooling opportunities and bridge non-walkable distances while minimising costs to the family in terms of transportation charges or boarding charges. The bicycle could also ensure the boarder's return to his/her home village on non-school days to provide labour to the family or to engage in income generating activities on their own behalf. However, in Central Region only a very small proportion of boys have access to bicycles and girls are almost entirely excluded from access. The remarkably limited use of bicycles in this region (by comparison, for example, with northern Ghana) can be attributed to a number of factors:

(1) cycles are not widely used in many parts of southern Ghana (by adults or children) for cultural reasons. In the Ashanti region, indeed, cycling seems to be stigmatised in some circles as a low status activity (Porter 2002), and southern ethnic groups actively discourage their children from cycling in Accra (Grieco et al. 1996),
(2) most off-road villagers, although less concerned about status, given their access problems, do not have funds to purchase cycles for themselves or their children,
(3) in busier urban centres parents perceive cycling as dangerous due to aggresssive driving behaviour and dense pedestrian activity. In Accra cycling is reportedly viewed by children from southern ethnic groups as a 'furtive but thrilling experience' for which they may be beaten if reported (Grieco, Turner and Kwakye, n.d.; Turner, Grieco and Kwakye 1996).

The cycles mostly commonly seen in village contexts tend to be those brought in by young men from nearby towns and hired out for very short periods (a matter of minutes at a time) for people to learn to ride and for recreation. Boys earn money by working as labourers in the village, for example doing the first weeding for farmers, and often spend some of their earnings on bicycle hire. However, these short term/short distance hire services, as Grieco et al.(1996) point out, do not permit children the opportunity to develop routines of purposeful cycle journeying or to learn about maintenance. Even when cycles are purchased, they often quickly fall into disuse because of lack of maintenance.

Girls are far less likely than boys to gain access to a cycle because few have either the time or funds to hire a bicycle in order to learn to ride. When we asked the 11 year old daughter of the chief's niece at one village, who - unusually - has access to a cycle, what boys say when they see her ride she commented: *'some will be complaining I should work in the house and others [forcibly?] collect it from me to ride*.' At another village where we interviewed a group of young girls, none had ridden a cycle though all said they would like to learn:

'we don't own [a bicycle] ourselves and if we want to hire it they will tell us we are girls to work at the kitchen not to ride a bicycle…boys shout at us to leave the bicycle' (15 year old JSS girl pupil, Sampa). They pointed to girls they had known who learned to ride cycles in an urban context, but said it was harder in the village to learn because at

precisely the time when cycles are brought in for hiring out – 2 - 4 pm - the girls are busy at home cooking:

'we don't have time to learn how to ride because we close school at 2 pm and use our time to 4 to cook, so normally girls don't have much time. Since there is no light here …..we must finish our chores and then it's dark. ….Normally boys fetch water in the house so after school they will quickly fetch water and go to play.'

Time seems to be more of a constraint on cycling lessons for girls than funds for hiring the cycle, since if they had free time, the girls argue they could earn money through petty trade. Prevailing cultural constraints may also play a role, particularly in urban areas where girls are often discouraged from riding, even if there is a bicycle within the household, especially after puberty. There seems to be a very widely held view that cycling will affect the womb and child bearing. Interestingly, many girls in the study villages perceive urban life to include easier and freer access to bicycles. However, as the studies in Accra by Grieco, et al (1996) indicate, this is probably a mistaken assumption. Indeed, there is evidence of women and girls' far lower rates of access to cycles across Africa (Malmberg Calvo 19 94), reflecting a continent-wide constraint on their mobility.

Travelling alone

Village children in our study villages evidently travel widely on foot and with little restriction within their own village area, whether attending school, or going about their tasks. However, children's control over space still shows gendered variations, particularly with reference to leisure activities, because boys have more free time to define their leisure activities than girls. Some of the boy's leisure activities make particular use of space beyond the confines of the settlement, especially when hunting in the forests for small animals and birds. Another favourite leisure activity for boys is to hire a bicycle and ride round the village. Sometimes boys are sent on errands with a hire cycle or family cycle which allows them to travel more widely by bicycle. Girls, by contrast, are heavily involved in time-consuming household chores and porterage, which as we saw above, limit their opportunity to learn to cycle and thus extend their independent travel.

Travel to the local school, for both boys and girls, is normally an independent activity. If escorted to school by parents, this is only to ensure they attend, not in order to ensure safety. Village children's mobility over longer distances is substantially constrained, however, - as we illustrated - by limited transport, limited resources to pay fares and by parental fears that their illiterate children will simply get lost. Mobility characteristics are apparently shaped less by either age or sex than by literacy in our study area. Both parents and children perceive literacy and 'cleverness' as the crucial passports to extending spatial autonomy beyond known and travelled environments: a child's irresponsibility and lack of knowledge will cause it to get lost. Even at Senior Secondary School level c. 20% of those parents who are concerned about their child travelling alone worry specifically about the child not finding its way: the notion of getting lost still resonates as an important perceived risk in the parent-child relationship. Higher literacy rates in urban environments were put forward by village respondents as the principal reason behind the perceived higher mobility experienced by city children.

Whether urban children's spatial domains really are more extensive, and whether this is due to higher levels of literacy, are questions which require further research.

The notion of confidence in children's mobility in a known environment, apparent in the village context, does not operate to the same extent in our urban school study in Assin Foso. Here, because of the busy road, school-children are considered more at risk of a road accident and there is some evidence of concern for road safety; parental involvement in mitigation strategies can be seen in arrangements with local taxis and parents accompanying very young children to school. This is supported from data from Senior Secondary schools, where students travel over longer distances and on busy roads to access the school for boarding purposes and the dominant risk perceived by parents is road safety. Only half of the parents worry about their children travelling, but those who are concerned worry more about girl-children travelling than boy-children. For those parents who worry, their dominant reason is road safety (ca 50% of worries) equally for boys and girls. There is no perceived gendered risk in terms of road accidents. However concerns over molestation and getting lost are higher for girls than boys, even though there is evidence that it does not curtail their mobility. It would be interesting to explore this issue further with illiterate girls and boys who do not attend school: to what extent does the notion of getting lost and molestation prevail amongst parents of less educated children?

Mobility and spatial autonomy: contrasts with Western contexts

A brief comment concerning comparison with conditions in Western contexts may be appropriate at this stage. Katz (1993) compares children's spatial ranges in US cities and those in village Sudan, contrasting the 'twinned plagues of supervision and lack of autonomy' of young children in the urban US with the widespread opportunities to roam widely (within the village and on farms up to around 5 kms distant) experienced by Sudanese girls and boys. In the US, she argues, parental concerns for children's physical and psycho-spatial safety severely restrict child autonomy and cause impoverishment of experience and a deterioration in children's lives.

Our Ghanaian village data indicates fairly similar conditions to those prevalent in village Sudan, so far as young children are concerned, and the US comparison thus seems equally valid. Katz is not concerned with travel to school in her Sudanese study, but our evidence from Ghana indicates further contrasts with child mobility in Western cities, in this context. In Ghana parents escort their children to day school only rarely, and normally only to ensure attendance of very young children. Additionally, many children apparently incorporate other tasks, notably headloading goods and trading, into their journeys to and from school. This does not occur in a Western context where, by contrast, there has been a massive expansion in parental escorting to school and other destinations (Hillman 1993 etc.) linked to safety concerns in some countries, notably Britain and the US. This has been compounded in countries like Britain by changes in family lifestyles (Barker 2003). Indeed the journey between home and school commonly seems to take the form of a terrain of anxiety: of traffic and 'stranger danger' and crime in general (4). In Ghana, by contrast, the biggest danger is generally perceived as that of

getting lost, hence the widespread emphasis on education and literacy as passports to travel.

CONCLUSION

There has been remarkably little research on child mobility, transport and traffic in a sub-Saharan context. Our case studies in southern Ghana are too limited in scope to allow us to draw more than highly tentative conclusions about local conditions. Qualitative and quantitative work in the case studies would need extending substantially to allow more confident assertions about patterns and trends. Nonetheless, the data gathered suggest many areas where policy relevant work could be fruitfully taken forward, both within the study region and in comparative studies in different cultural, economic and environmental contexts across the continent.

There is a surprising lack of data regarding children's contributions as pedestrian transporters in Africa and the physiological impacts of this activity, for example, although headloading by children appears almost ubiquitous. Carrying tends to be widely subsumed under the general heading of agricultural or domestic labour, which contributes to its invisibility (as for example in the GNCC 2000 country report: 29). To what extent does carriage of heavy loads in childhood cause health problems in later life? Are girls and foster children commonly at greater risk from such problems? The positive gloss put on child contributions to household production and reproduction has encouraged the tendency to ignore such questions. Perhaps specific kinds of Intermediate Means of Transport (IMTs) such as push trucks and load-carrying cycles could reduce that burden, but we will not know their potential without detailed studies.

So far as rural and urban school children are concerned, we need to know more about the extent of multipurpose journeys and their impact on transport choice and school attendance. Additionally, what is the impact of transport cost and availability on attendance at school and school choice for girls and boys in varying socio-economic groups and locational contexts? What are the implications for transport planning? Could policies to promote wider availability of cycles and cycle repair courses in schools impact positively on children's school attendance, particularly in a rural context? In regions where cycle usage is low due to cultural attitudes, can children's literature which presents cycling positively change attitudes to their use? And what of illiterate children who have never been to school? How does their mobility compare with that of literate children? To what extent does the notion of getting lost and molestation prevail amongst parents of less educated children? Our study suggests there are probably important differences in mobility and spatial autonomy between rural children and children in major cities. Is this, as our respondents suggested, related principally to literacy and educational levels? What other factors shape parental and child attitudes to and experience of independent travel?

Substantial research on children in the road safety field is also urgently needed in both urban and varying rural contexts. Recent work in West Africa, for instance, has

suggested that roadside trading by children is probably a major cause of accidents. In what contexts is this true, which children are most at risk, and how can accidents be reduced? Our findings concerning transport to school suggests there is probably urgent need for the implementation of legislation and greater public awareness of potential risk in this area too. The impact of road safety training in school, means of improving safety training and of extending it to children who do not go to school also needs attention.

The number and range of questions presented here - and there are many more - indicate how limited is our current knowledge of children's mobility and transport in Africa. The issues we raise may have substantial significance for improving children's well being. Much more research is needed if policy formulation on children and transport in sub-Saharan Africa is to be developed and effectively targeted to benefit the children concerned.

Notes

1. Central Region had the country's highest Infant Mortality rate of 13.8% in 1988 (Anyinam 1994).
2. This research was conducted as an adjunct to an action research project on Intermediate Means of Transport. The research was funded by the Department for International Development of the United Kingdom (DFID Crop Post Harvest Programme, Project R7575). However, the Department for International Development can accept no responsibility for any information provided or views expressed.
An earlier version of the paper was presented at the international workshop on Children and Traffic, Copenhagen, May 2-3 2002.
3. Unfortunately, we were unable to collect data here on travel mode to school.
4. Scandinavian participants at the Copenhagen conference suggested that the issue of stranger-danger is a far greater constraint on child mobility in the UK than it is in Scandinavian countries.

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