»Illegal Connections«: Conflicts over Electricity in Soweto, South Africa

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Introduction

While gearing up for the United Nations World Summit on Sustainable Development, held in Johannesburg from 26 August to 4 September 2002, the city's infrastructure was upgraded through the installation of 10,000 kilometers of electric cable,[1] together with back-up generators to ensure that media coverage of the event would not be disrupted by power cuts.[2] After the summit, UN Secretary-General Kofi Annan stated that »This is the first time I have experienced such good organization and an excellent electricity supply in a developing country«.[3] And indeed, the summit's ten days of uninterrupted electricity supply could be called a success when compared to the situation in many other African cities, not to mention the history of power cuts in Johannesburg itself, where, among other things, thefts of cables and illegal connections to the electricity grid make power failures a regular occurrence. Some suburbs are affected by twenty blackouts a month.[4]

Outside the venues of the World Summit, a variety of organizations held demonstrations, among them the Soweto Electricity Crisis Committee (SECC). Founded in mid-2000, the SECC opposes the incipient privatization of Eskom, the major South African electricity utility, and, in a coalition with other social movements, claims to have recruited 20,000 people for protest marches on 31 August 2001.[5] Paradoxically, the residential areas of many of these demonstrators from Johannesburg's townships had recently been connected to the electricity grid in a massive post-apartheid programme of the electrification of formerly disadvantaged ›black‹ regions. What nonetheless exasperated the protesters was that, in 2001, an estimated 20,000 Soweto households were being disconnected from the electricity supply every month due to (alleged) arrears.[6] In addition, tariffs for electricity differed from area to area due to Eskom's policy of ensuring cost-effectiveness. For example, whereas residents in the mainly ›white‹ and affluent suburb of Sandton, where the World Summit was mostly being held, were paying 18 cents per kilowatt/hour, those in the mainly ›black‹ and economically depressed area of Soweto were being charged 26 cents. The SECC therefore engaged in protest marches under the slogan »Electricity is a right, not a privilege«, while at the same time, in »Operation Khanyisa«, illegally reconnecting Sowetans whose electricity had been disconnected by Eskom.

1) »Successful summit hosted at Sandton Convention Centre«. August 2002. Johannesburg: SCC; press release.
2) »When Johannesburg, South Africa, will span the world«. February 2002. Johannesburg: SCC; press release.
3) »Meet the man behind Joburg's power«. 17 November 2002. Sunday Times.
4) »The great Joburg power struggle«. 8 April 2001. Sunday Times.
5) »Interview with Trevor Ngwane: Sparks in the township«. July-August 2003. New Left Review.
6) »Cold cuts«. 8 October 2001. Sunday Times.

In his classic definition, Richard Sennett characterizes cities as human settlements in which »strangers are likely to meet« (1978, p. 33). City life thus involves what Jane Jacobs and Ruth Fincher have called the »located politics of difference«, that is, »struggles over identity, resources, citizenry, and space« (1998, p. 2). Some of these struggles concern spatial and infrastructural formations that physically inscribe ›difference‹ into the urban built environment, as exemplified by the controversies over gated communities in many parts of the world (e.g. Blakely 1997; Caldeira 2000). Such differentiating formations reflect ongoing processes of social inclusion and exclusion, while at the same time giving rise to contestations relating to the boundaries that are established in this way.

Where urban segregation is concerned, differentiating socio-spatial structures are normally thought of as bounded spaces existing side by side and thus forming a territorial ›patchwork‹. In recent decades, however, social scientists have increasingly drawn attention to the essentially *networked* character of modern cities (Tarr/Dupuy 1988; Dupuy 1991). Studies of the role of information and communication technology (Castells 1989; Graham/Marvin 1996), municipal gas and electricity utilities (Rose 1995) and transportation infrastructures in urban areas (Dupuy 2002) have shown that urbanism involves a high degree of interconnectedness and multidimensional interdependence between different spatialities and groups of social actors. In these studies, the notion of the ›network‹ has attained an almost paradigmatic status, since it allows both ›structures‹ and ›processes‹ and intersections between ›place‹, ›space‹ and ›flows‹ to be examined, thus bridging the erstwhile opposition between ›micro‹ and ›macro‹ levels. This notion has also been used fruitfully in analyzing the co-production of technological infrastructural objects and social configurations (cf. Latour 1987; Joerges 1999; Knorr-Cetina 1999; see also Hughes 1989).

Given the use of the term ›network‹ as a metaphor for decentralized, horizontal, loose structures, statements have repeatedly been made to the effect that »networks do not have boundaries. They are characterized by lines and nodes, by density and clustering« (Grundmann 1999, p. 248). Yet, with regard to networks involving urban infrastructure, the issue of ›boundaries‹ cannot be dismissed so easily. As large technological systems, urban networked infrastructures create relational spatialities (cf. Löw 2001) that are characterized by specific patterns of social ›inclusion‹ and ›exclusion‹ where utilities like electricity, telephone, gas or water are concerned (Graham 1997). The double-edged aspect of this is emphasized by Manuel Castells (1996, p. 500f), who – writing about electronic communication networks in general – argues that the development of new information technologies is paralleled by the rise of a novel kind of social organization, the »network society«, which he conceives as being internationally *integrated* and increasingly urbanized, yet fragmented and *potentially exclusionary*.

It is the tension between the integrative/inclusive potential of urban sociotechnical networks on the one hand, and their exclusionary tendencies on the other, which is the focus of this article. In some cases, this tension is materially inscribed in networks of urban infrastructure in the very process of building it. A recent volume by Stephen Graham and Simon Marvin (2001), for example, begins with a description of water pipes in the city of Mumbai, India, which provide potable water to wealthy gated communities while being used as footpaths by the residents of adjacent informal settlements, who themselves are not linked to the piped system but have to rely on expensive bottled water. Given that these water pipes have not been illegally tapped, in this case the boundaries of the networked infrastructure have evidently been defined definitively in the process of its planning and physical construction. There are other cases, however, where the boundaries of networks appear to be in a greater state

of flux. According to Castells, global information networks are potentially infinite, yet »selectively switch on and off individuals, groups, regions, and even countries, according to their relevance in fulfilling the goals processed in the network« (1996, p. 3). Taking into account divergences among different types of network, analyses of sociotechnical networks thus involve issues of ›connectivity‹, that is, the question of how premises for and modalities of ›being connected‹ come to be defined in relation to particular sociotechnical networks.

Examining the political, sociocultural and economic processes through which such premises and modalities of connectivity to urban networked infrastructures are defined, materially established and contested is important for understanding the ›making‹ of contemporary cities. These processes shed light not only on how urban identities and movements are shaped in co-production with material configurations, but also on how cross-cutting spatialities, practices and discourses connect the urban fabric to the wider social and global realms.

This article addresses the issue of connectivity with regard to electricity networks in the urban context of Soweto, South Africa. As the example of the Johannesburg World Summit and its concomitants mentioned above indicates, current conflicts over electricity in Soweto are informed by legacies of the apartheid era, campaigns of infrastructural and technological modernization in the fabric of globalization, and neo-liberal notions of privatization and cost-effectiveness. These conflicts revolve around issues of human rights and social welfare, ultimately finding expression in down-to-earth struggles between ›professional‹ and ›guerilla‹ electricians. Taking Gabriel Dupuy's (1991) emphasis on the networked character of modern urbanism as a starting point, and focusing on discourses and practices relating to ›illegal connections‹, the controversies over electricity provision in Soweto therefore represent an engaging example showing how urban realities are simultaneously shaped by local, national and global forces. The actors involved in this dispute share the conviction that being connected to electricity is important because of its functional and symbolic values. Where they differ is in how they define the conditions for and modalities of ›being connected‹ legitimately. Since the issue of connectivity not only pertains to connections of a physical kind but also to questions of social, political, economic and cultural reticulation, the evolving conflicts over the networked materiality of urban life enfold controversies about social relationships in an increasingly interconnected world. And, as will be demonstrated below, they are also giving rise to urban movements and alternative sociotechnical networks which informally – and from the official point of view illegally – link up to existing electricity networks.

The argument of this article is formulated in several steps. In the first section, an outline of the historical development of Soweto introduces the background to the current conflicts over electricity. The remaining sections then concentrate on the controversial practices and discourses associated with connections, disconnections and reconnections to the electricity grid in Soweto.

Soweto

As with most other townships in South Africa, the creation of Soweto as a satellite of the City of Johannesburg can be seen an expression of the contradictory aim »to secure the labour-power of Africans while minimizing their presence as people« (Maylam 1990, p. 70). Today a densely populated agglomerate with a mainly African population of more than one million (Morris et al. 1999), Soweto's foundation was laid in 1905, when the Johannesburg

municipality purchased land outside the city in order to resettle ›black‹ inner-city residents who were regarded as posing a hygienic threat to the ›white‹ population.

In the course of the twentieth century, this location progressively became involved in schemes of urban apartheid which, according to Paul Maylam, rested on four main pillars:

> control over the movement of Africans into urban areas; the regulation and regimentation of the lives of urban Africans through such mechanisms as segregation, curfews, and controlled housing; the development of a self-financing system whereby Africans came to bear a large share of their own reproduction costs; and the cooptation of members of the urban African petty bourgeoisie through the creation of local institutions, such as advisory boards (1990, p. 79)

In part, these four pillars of urban apartheid can be traced back to the final report of the Stallard Commission of 1922 (Swanson 1968; Dubow 1989), which recommended that ›black‹ Africans should only be allowed in urban areas as long as they »ministered to the needs of the white man« (cited in Rich 1978, p. 177). ›Black‹ Africans in the urban areas outside the ›native reserves‹ (later called ›homelands‹ and ›bantustans‹) were therefore declared to be merely ›temporary sojourners‹. The Native (Urban Areas) Act of 1923 consequently empowered municipalities to segregate their populations spatially along racial lines and to implement systems of influx control (Davenport 1969; Parnell 1998). Backed by further legislation, such as the Group Areas Act of 1950 (Mabin 1992) and the Prevention of Illegal Squatting Act of 1951 (O'Regan 1989), Johannesburg City Council increasingly resorted to forced removals from inner-city areas to what eventually became one of the largest townships in southern Africa – Soweto.

As a whole, this development represented a continuous struggle over sites, housing and services. Since the Housing Act of 1920 and the Native (Urban Areas) Act of 1923 obliged municipalities to provide accommodation for resettled populations, the Johannesburg City Council constructed standardized formal housing units locally called »matchboxes« (Ginsburg 1996; Bonner/Segal 1998, p. 17, p. 28f). However, the City Council's weak financial base did not make it feasible to supply all those who had been relocated with accommodation. Overcrowding in the township thus contributed to the establishment of informal settlements in the backyards of formal housing units (Gilbert et al. 2000) and to the growth of squatter settlements in sites beyond the areas demarcated by the City Council (Stadler 1979; Bonner 1991). The municipality attempted to control these developments by incorporating newly established informal settlements into schemes of disciplinary supervision. However, who was to pay for housing and infrastructure programmes remained a contentious issue. In the long run, formal housing in the townships had to be subsidized by the City Council, since »the low wages paid to African workers meant that municipalities could not charge economic rentals for their housing« (Maylam 1990, p. 75). After 1951, the Bantu Building Workers Act, which granted Africans the right to be trained in the building trade, was employed to reduce the costs of house constructions and to implement ›site-and-service‹ schemes (Lupton/Murphy 1995; Parnell/Hart 1999), which Philip Bonner and Lauren Segal describe as follows:

> homeless African people . . . were required to move to sites measuring 12 metres by 22 metres and serviced by a bucket latrine on every plot, with a water outlet every 500 metres. Families were expected to build their own shanties until such time as proper housing – self-help or otherwise – could be provided. (1998, p. 29).

The site-and-service schemes, which later also became an important element in the housing programmes of post-apartheid South Africa, thus combined housing and infrastructural measures, yet with regard to the latter emphasized only water and sanitation utilities, not electricity.

Electricity was introduced in South Africa in the late nineteenth century. Initially, it was produced by municipalities, mines and various industries for street lighting, transport, machines and domestic use in ›white‹ urban areas. Subsequent decades led to the consolidation of a government-owned power utility, Eskom, today one of the largest non-petroleum power companies in the world. According to Renfrew Christie, electricity has been unremittingly used in South Africa »by the state and by owners of property to serve their particular interest« (1984, p. 2), having been employed as a political tool in devising tariff policies, investment strategies and infrastructural measures. The evolving spatial arrangements of electrification consequently represented an expression of schemes of racial segregation, in which they acquired a supportive role. While, for example, most residents of Soweto were denied electric power up to the mid-1980s (Mashabela 1988, p. 149), the site of the township was chosen by the Johannesburg City Council because of its location close to a tram system that provided African labourers with a means of transport to their places of work in industry (Mandy 1984, p. 176). Electricity was thus allocated differently in different zones, while simultaneously establishing certain infrastructural connections between segregated areas.

Soweto's ›matchbox‹ houses and, to a much greater extent, its backyard shelters and informal settlements only had limited infrastructural services until the Soweto uprising of 1976, following which the Johannesburg City Council attempted to regain control of the increasingly vehement resistance to apartheid by, inter alia, extending the township's electricity infrastructure (Mandy 1984, p. 207-213). Urban protests persisted, however, taking the form of boycotts against municipal service fees, rents, schools, public transport and ›white‹-owned businesses (e.g. Pirie 1983; Hendler 1988; Hyslop 1991). The intention behind these boycotts was to obtain reasonable rents and charges, as well as a certain degree of political ungovernability. Starting in the mid-1980s, the service fees and rent boycott only came to an end in September 1990, when the Soweto Civic Association, the Transvaal Provincial Authority and Eskom signed the ›Soweto Accord‹ (Friedman 1991; Swilling/Shubane 1991), which made provisions for writing off rent and service arrears and introduced a discounted system of electricity.

The rallying cry »Asinamali!« (›we have no money‹), which developed as a distinctive expression of resistance during the rent boycott, inspired playwright Mbongeni Ngema to compose a politically committed play with the same name (Jones 1994). This drama was first performed in 1983 in KwaZulu-Natal before moving to Soweto and eventually to international audiences. By coincidence or not, just some months after the conflict between Eskom and the SECC had reached its peak in 2001, Ngema's »Asinamali« was restaged in a theatre in Johannesburg.[7] By that time, things had changed considerably. Policies to ›deracialize‹ and desegregate South African society had been implemented by, for example, uniting what under apartheid had been segregated ›black‹ and ›white‹ administrative units. Yet, as will be discussed further below, payment boycotts soon returned as a response to what in Soweto was widely considered the persistence of social injustice under a new guise – neo-liberalism.

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7)   »Yesterday's heroes, today's villains«. 28 April 2002. The Sunday Tribune.

Connections

The official ending of apartheid in 1990 and the first democratic elections in South Africa in 1994 introduced wide-ranging social, political and economic transformations in the country and also marked the beginning of extensive national development programmes through which attempts are being made to provide historically disadvantaged ›black‹ areas with services like telephones (Horwitz 1994) and electricity (Theron et al. 1991). The electrification programmes, which aim to connect all South African households to the electricity grid by the year 2012, have been very successful up to now: with an average annual investment of 1.2 billion ZAR (South African Rand), the level of electrification in South Africa has been doubled since 1994.[8]

Nonetheless, electrification has not reached all sectors of society. This is partly due to the formal requirements for connection to the electricity grid. For example, to a become a domestic customer of Eskom, the power utility responsible for electricity distribution in Soweto, a prospective customer has to hand in an application form requiring personal details and information about the actual supply address. The application form comprises a field in which a »Full description of the property/title deed, where supply is required, i.e. street address, lot no., farm name« is requested. The applicant must also identify himself or herself as either the »owner« or »tenant« of the property. These bureaucratic requirements in themselves already exclude many residents of Soweto from applying for an official connection to the electricity grid. According to Alan Morris et al. (1999, p. 16), almost 30 percent of Soweto's population inhabit backyard dwellings built on the premises of formal housing units, while a similarly high percentage of Sowetans live in informal settlements or occupy site-and-service facilities. Dwellings in these three types of domain are mostly constructed from corrugated iron, wooden planks and other temporary building materials. For safety reasons, they in some cases do not fulfill Eskom's requirements for dwellings eligible for connection to electricity. In addition, to a large extent these dwellings do not have street addresses or other documentary means specifying their locations officially. Potential applicants from these domains thus cannot provide the basic information required on the Eskom application form. Finally, since Eskom only distinguishes between ›owners‹ and ›tenants‹, occupants without any legal residential status in informal settlements or backyard shelters are generally denied official electricity connection. Only five percent of backyard households have a legal connection to the electricity grid. Nonetheless more than ninety percent have access to electricity, thanks to illegal connections (Beall et al. 2002, p. 5).

Besides various ways of tampering with electricity meters, a number of different types of informal connection to the power grid in Soweto can be distinguished. Residents without official infrastructural electricity connection or the illegal assistance of a neighboring legal Eskom customer often create individual connections by, for instance, throwing a brick with a conductor line over overhead cables or secretly connecting their own cables to the underground network. Some of these techniques ensure permanent connectivity. Other connections, however, are of a more temporary kind: at night, bamboo-sticks with metal conductors attached to the top are hooked on to the bare conductors of the overhead electricity network, being removed during the day (ESLC 2001, pp. 4).

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8)   »Electrification plan ›will need huge subsidies'«. 7 March 2002. Business Day.

Of all the techniques used to create informal electricity connections, the most common is to manipulate the transmission lines between the officially designated nodes of the networked infrastructure by constructing additional nodes and expanding the network from there outwards. Besides using the official electricity infrastructure itself, some methods even integrate other types of networked infrastructure in order to create circuits for electricity supply. A report commissioned by the Electricity Suppliers Liaison Committee gives the following example:

[A] brick with a single conductor connected to a live source is thrown over the bare earth conductor of a Telkom distribution system thus livening up that earth wire. The Telkom earth wire is part of the protection system for the Telkom service. It does not normally have a voltage on it. The earth wire is attached by means of an insulator. Various single wire circuits are taken off this earth wire along its route to supply different dwellings. The return path for the supply is achieved by driving an earth spike into the ground at the supply point. (ESLC 2001, p. 6)

Here Eskom's infrastructure is being used as an energy source, with Telkom's telecommunication infrastructure being used to transmit this energy. This method is instructive because it provides an example of how assemblages of different types of networked infrastructures – telephone and electricity – are locally engaged and combined to form an alternative network.

Other residents in Soweto are supplied with electricity through home-made sub-networks starting from the premises of a legal, metered Eskom customer. As noted above, such connections are usually constructed between formal housing units and backyard shelters or adjacent informal settlements. In one case from Tshwane (Pretoria), a woman was discovered to have illegally supplied more than fifteen of her neighbours with electricity:

The cables were carefully buried in trenches dug in the ground around the house and extended across the street to the nearby informal settlement. In places the tarred road had been dug up and the wires buried and then covered up again. David Chauke, a hawker and a resident, said that at the end of the month there were long queues outside the woman's house as people waited to pay their ›accounts‹, while others waited to be ›connected‹.[9]

The woman herself and some of the residents defended charging customers 150 ZAR per month by stating that »Nothing is free«, though they also claimed that the illegal network had actually been created for the benefit of people without electricity. Others, however, saw it rather differently: »It was like a small Eskom«, a neighboring shop-owner claimed, after the police had discovered the network; »She was only interested in making money out of our suffering and if one does not pay the goods are taken«.[10] Similar conflicting viewpoints, allegations of immoral profiteering and references to suffering and the public good are also addressed below, when I turn to Eskom's contemporary role in Soweto.

Besides these issues, illegal connections have been heatedly debated in many parts of South Africa because most of the techniques described above present dangers to the general public. It is not only that those involved in the physical act of fabricating home-made connections occasionally suffer injuries and fatal accidents: so, at times, do ordinary pedestrians and children while playing. Safety hazards are presented by worn out insulations of wires across streets, live wires hanging from poles and bare conductors sticking out of the soil with which they have been only loosely covered over. Temporary joints between cables and the installation of thin wires which are not rated for 230 volts also sometimes lead to fires sweeping through informal settlements.[11]

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9) »Informal power«. 23 March 2003. Sunday Times.

10) Ibid.

11) »Fire eats up family homes«. 8 September 2002. Sunday Times.

Given this background, it is hardly surprising that in some areas local vigilante groups have been formed to counteract the negative side-effects of illegal connections to the electricity grid (ESLC 2001, p. 12). But illegal connections do not only have repercussions locally but may affect quite distant areas because, if it is not detected, the clandestine tapping of electricity from a particular point on the networked infrastructure becomes officially documented as increased electricity consumption further down the line.[12] Some municipal areas are thus unknowingly subsidizing other areas where illegal connections have been installed. Tempers consequently run high when such practices are discovered.

As already noted, the construction of illegal electricity networks builds upon existing physical structures while simultaneously extending them, sometimes combining different types of networked infrastructure and physically overcoming other, cross-cutting infrastructures like roads. The existence of these networks, among other things, is due to the fact that legal connections to the electricity network presuppose clearly bounded localities and identities, that is, residential stability in a material sense, as well as with respect to the resident's status. According to this logic, formally acknowledged participation in flows (in the form of electric circuits) presumes a pronounced constancy in space and time (cf. Berking 1998). Whoever is officially classified as a ›temporary sojourner‹ is excluded from legitimate connection to the network. Some of the conflicts over electricity in Soweto accordingly revolve around the question of what might serve as a node in the network, that is, how the prerequisites for connectivity should be defined. At the same time, the construction of alternative electricity networks is embedded in and promotes the development of social networks that are consolidated in order to become socio-*technical* networks. This is the case when electricity connections are extended to link up different households, when experts in home-made connections are asked for assistance, or when legal customers serve as unofficial brokers of municipal services to backyard shelters.

Disconnections

In an interview, one of the Soweto Electricity Crisis Committee's leading protagonists, Trevor Ngwane, remarked that »The post-apartheid society was supposed to be a society of connections, connecting all those black working class people who had been deprived under apartheid. Instead, the new South Africa is a society of disconnections«.[13] The terms ›connection‹ and ›disconnection‹ here clearly stand for more than just infrastructural interconnectedness. ›Connection‹ conjures up wider political and social agendas, such as the creation of equality and unity among South Africa's population through democracy, development and the dissolution of previous schemes of segregation. ›Disconnection‹, by contrast, evokes the persistence of inequalities and exclusionary processes in post-apartheid South Africa.

What Ngwane concretely referred to in calling South Africa a ›society of disconnections‹ was the fact that thirteen percent of the South African population, that is, 3.25 million people, had experienced disconnection by electricity distributors in 2002 (McDonald 2002, p. 12).[14] In Soweto, around 20,000 houses were being disconnected each month in early 2001

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12) »Power to the people«. 13 November 2001. SABC News.

13) »Is it a crime to fight for services?«. 17 August 2002. Socialist Worker.

14) For earlier conflicts between Eskom and communities in Gauteng townships, see Meintjes/White (1997).

(Fiil-Flynn 2001, p. 16); only four out of every ten households were *not* disconnected.[15] These actions were generally due to non-payment and arrears, which, according to Eskom's statistical figures for 2002, had accumulated in Soweto to a total of 922 million ZAR, that is, roughly 111.5 million Euros.[16] Prior to 1994, disconnecting electricity services had been rather uncommon (McDonald 2002, p. 25). In subsequent years, however, the neo-liberal policies of the South African government (Carmody 2002) led to the first moves in the privatization of Eskom, which in June 2001 became incorporated under the Companies Act.[17] This conversion from a statutory body into a registered public company implied, among other things, the implementation of cost-recovery policies. In order to be competitive on the free market, the current aim is to recover debts and to pass on to customers whatever costs arise for the infrastructural installation, maintenance and supply of electricity in a particular area. To achieve these ends with regard to domestic customers, a set of strategies is being pursued, of which, for lack of space, only three can be mentioned here. First, Eskom disconnects the electricity supply of defaulters; this promises to foreclose further arrears and to provide an ›incentive‹ for customers to change what is considered a questionable morality of payment. Secondly, non-payment is pre-empted by concentrating on the installation of pre-payment meters; since these meters allow direct budgeting and immediate credit control, they are regarded as having a monitoring effect on the customers' use of electricity. Finally, Eskom periodically increases the tariffs for electricity; in some instances, the introduction of cost-effective, volumetric tariffs for domestic consumers who were previously charged a flat rate has led to price increases of more than 400 percent (Fiil-Flynn 2001, p. 6).

The reasons given for why some people in Soweto do not settle their electricity bills are either their poverty-stricken inability to pay or the alleged existence of a ›culture of non-payment‹. With regard to the latter, some actors involved in the dispute, as well as media commentators and social scientists regard non-payment as a legacy of the anti-apartheid struggle, although with a notably different adversary, namely the ANC and its policies of privatization (Johnson 1999). As will be shown in the following section, the rhetorics and strategies employed in the conflict to some extent actually resemble earlier boycotts of the anti-apartheid era. Other commentators, however, point out that most people are perfectly willing to pay for electricity services, yet simply cannot. This view is not only corroborated by the fact that it is particularly low-income households who are in arrears for electricity (McDonald 2002, p. 10), but also by research in Soweto demonstrating that people carefully keep their electricity bills for many years and are aware of the exact amount of their debts, as well as showing a deep concern over how they might be settled one day (Fiil-Flynn 2001, p. 16).

The non-payment of electricity bills leads to widespread resentment by ›paying‹ Eskom customers of ›non-paying customers‹, the former reproaching the latter for indirectly making them subsidize the illegal consumption of electricity. As with the issue of illegal connections discussed above, here it is the physical interconnectedness and social interdependence created through the networked infrastructure that creates conflicts between the inhabitants of adjacent residential areas. Backed by rather one-sided media coverage, this conflict occasionally assumes racist undertones when the defaulters are depicted as mainly living in ›black‹

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15) »Soweto in crisis as electricity debt spirals«. 31 August 2001. Saturday Star.

16) »Eskom v. Soweto: the struggle for power«. March 2002. Focus (Helen Suzman Foundation).

17) For a history of this conversion, see Praetorius (2003).

townships, whereas in fact (›white‹-owned) businesses make up a large percentage of the non-payers (McDonald 2002, p. 9). These discourses build on longstanding stereotypical images while at the same time fuelling further enmities and the desire for spatial and infra-structural segregation, for example, in the form of (infrastructurally) autonomous ›gated communities‹ (Landman 2000).

According to research by Mij Fiil-Flynn (2001, pp. 19), Sowetans whose electricity had been cut off by Eskom stated that disconnections lead, among other things, to a marked increase in women's workloads, with food being spoiled due to non-functioning refrigerators, and health problems arising related to the use of alternative energy sources such as coal. Additional problems cited include increases in domestic violence and a general loss of human dignity. Thus, being connected to electricity was not only seen as having a practical value, but also a high degree of symbolic significance too. Electricity here represents a desirable standard of living and way of life, modernity and self-respect; being disconnected, on the other hand, nourishes feelings of marginalization and degradation, and is even considered detrimental to human interactions.

Instances of the violent reactions of non-payers when they are disconnected by Eskom must be seen against this background. In June 2001, for example, four people were wounded in a gun fight between Soweto residents and Eskom employees who were about to cut off defaulters.[18] An attempt to disconnect residents in the south of Johannesburg was described as follows:

> They came at me with guns, knives and knobkerries. I first felt the knobkerrie on my head and was then assailed by bricks as I ran to our car. Bricks rained down on the car. They began hitting the vehicle with knobkerries. All the windows were smashed and the vehicle's body severely damaged.[19]

In another episode, the same Eskom employee was forced to restore connections that he had disconnected: »A panga-wielding man threatened to cut me into pieces and set me alight if I did not reconnect. With the panga at my back, I had to reconnect 10 homes, although I had only disconnected three.«[20] Situations like these have led to the emergence of particular ›no-go zones‹ for Eskom. They also indicate that there is sometimes a smooth transition from disconnection to reconnection.

Reconnections

Referring to anti-privatization protests in South Africa, the activist Ashwin Desai has proclaimed: »This is a struggle that already has heroes, legends, and martyrs«.[21] In April 2002, demonstrators of the SECC were shot at by a security guard while protesting in front of the house of Johannesburg's Executive Mayor, Amos Masondo.[22] In 2001, protesters had been arrested while disconnecting the mayor's own water and electricity supplies, so as to give him

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18) »Soweto power cuts turn violent«. 5 June 2001. SABC News.
19) »The horrors of cutting power to the people«. 14 November 1999. Sunday Times.
20) Ibid. A *panga* is a machete.
21) »Neoliberalism and resistance in South Africa«. January 2003. Monthly Review.
22) »Electricity protesters to stay in jail for a week«. 9 April 2002. The Star.

»a taste of [his] own medicine«.[23] In recent years, these »comrades« have acquired an almost legendary status reminiscent of the anti-apartheid struggle.

Established in mid-2000 in association with the Anti-Privatization Forum, the SECC sees its activities as echoing »the spirit of the defiance campaigns of the 50s and 60s where the working people of South Africa refused to obey unjust, oppressive and exploitative laws«.[24] Within the South African context, the political opposition of this urban movement is considered to be »a new wave, but it uses the traditions, the fire, [and] the experience of the old days«.[25] At the same time, the SECC claims to be upholding what it calls an international ›great tradition‹ of civil disobedience:

> Underlying this great tradition and weapon of struggle, used by heroes such as Mahatma Gandhi, Martin Luther King, and our own Nelson Mandela, is the basic philosophy that the power and command of those on top is based on the co-operation and consent of those at the bottom. We, the residents of Soweto, are withdrawing our co-operation with Eskom and by so doing we are helping each other to discover that Eskom is not so powerful after all, that Eskom's power is premised on our consent, that, in fact, the power lies with us the people.[26]

With approximately 7,000 members and 22 branches in 2003, the SECC is led by directly elected representatives like Trevor Ngwane, already mentioned above, the chairperson of the SECC and a self-proclaimed Marxist. After studying sociology, Ngwane worked as a university lecturer and later for the Transport Workers Union. In 1990 he joined the ANC and in 1994 was elected a councillor for the Pimville ward in Soweto. Conflicts over Johannesburg's comprehensive privatization plans, however, led to his suspension from the ANC in 1999. Since then, the relationship between Ngwane and the ANC has become highly contentious, since Ngwane has persisted in challenging the ANC's neo-liberal policies.

In general, the SECC is opposed to the development of a free market in South African electricity services. Criticizing the notion that electricity is a »privilege, not a right«, as suggested by Eskom,[27] it insists that this attitude »contradicts the spirit of the country's constitution which seeks to guarantee access to basic services«,[28] advocating instead the »renationalization« of basic services and the »decommodification« of electricity.[29] Its political opposition is sociologically informed and internationally linked to other leftist movements opposed to neo-liberalism and globalization. Thus, like Eskom, whose policies of privatization are related to globally circulating ideas, the discourses and practices of its main adversary in Soweto, the SECC, are also connected globally. In a volume entitled »A movement of movements« (Mertes 2004), for example, Ngwane presents his political biography side by side with an interview with Mexico's Subcomandante Marcos and articles about the Association pour une Taxation des Transactions financières pour l'Aide aux Citoyens (ATTAC).

In particular, in 2001 the SECC protested against (1) »massive and indiscriminate cut-offs« executed »without proper notice«; (2) »cockeyed bills« due to »no proper reading of meters«, »unserviced and faulty meters« and the use of estimates for charging customers; (3) »huge

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23) »People's power in Soweto!«. 18 October 2001. Johannesburg: SECC; press release.

24) »The electricity crisis in Soweto«. 6 June 2001. Johannesburg: SECC; press release.

25) »Interview with Trevor Ngwane: Sparks in the township«. July-August 2003. New Left Review.

26) »The electricity crisis in Soweto«. 6 June 2001. Johannesburg: SECC; press release.

27) »Sowetans to defy Eskom over cutoffs«. 3 June 2001. The Star.

28) »The electricity crisis in Soweto«. 6 June 2001. Johannesburg: SECC; press release.

29) »Power to the people in South Africa: Operation Khanyisa! and the fight against electricity privatization«. January-February 2002. Multinational Monitor.

bills which only a few can afford« and »huge arrears which are so huge they are unpayable«; (4) a lack of concessions for pensioners, the disabled and the unemployed; (5) »bribery, extortion and corruption by Eskom employees«; (6) unfair rates and tariff structures; (7) the privatization of Eskom; and (8) Eskom's »unilateral decision-making« without »meaningful participation by residents«.[30]

Eskom customers frequently complain about inaccurate bills, non-receipt of bills and thus not being able to pay them, or being cut off by Eskom indiscriminately even though bills have been paid. These problems with the billing system have to do on the one hand with the fact that Eskom's involvement in electricity distribution to domestic customers was very restricted during the apartheid years; there is thus a certain degree of inexperience on the side of Eskom concerning domestic customer relations and the organizational routines of monthly billing. On the other hand, problems with billing are due to the existence of particular ›no-go zones‹ for Eskom employees, mentioned above; since in these zones electricity meters cannot be read, Eskom has to rely on estimates.[31]

Eskom's billing practices and disconnections are also suspected of being characterized by ruthless profiteering and riddled with corruption. In relation to the disconnection process, for example, SECC spokeswoman Virginia Setshedi remarked:

> Eskom employ sub-contractors to switch off the power. They are paid R70 for each disconnection. The sub-contractors present the circuit-breakers they have removed from the meters to prove that they have switched off people's power and are paid according to the number.[32]

Some of these sub-contracting firms, Setshedi claimed, are owned by ANC councillors, who are thus seen as promoting the privatization of Eskom solely for their own financial benefit. But cases of corruption have also come to public knowledge when Eskom employees have been found accepting bribes to reconnect houses illegally that had earlier been disconnected from the grid.[33]

For the most part, however, reconnections are carried out by members of the SECC. As a reaction to Eskom's disconnections, the SECC launched »Operation Khanyisa«, a programme to reverse electricity disconnections, during which almost 150,000 houses were reconnected in 2001 and 2002.[34] A newspaper recounted this process of reconnection in the case of Elizabeth Ndlovu, a resident of Soweto, as follows:

> »a neighbor told Ndlovu about the Soweto Electricity Crisis Committee (SECC). A phone call later, SECC member Phillip Matseoane turned up at her cinderblock house, carrying his toolbox and some heavy-duty cable. Matseoane went to work at once, connecting his cable directly to the power lines in the ground. Within a few hours, Ndlovu was back on the grid. Matseoane only charged her for the cable. He says, »It gives me a lot of pleasure to see them say, ›Oh, I've got a piece of my life back.‹«.[35]

»Operation Khanyisa« relies on trained volunteers who – proclaiming their corporate identity by wearing red T-shirts with featuring an image of a light bulb in the middle – reconnect Sowetans regardless of why they have been disconnected by Eskom. According to some activists, »Operation Khanyisa« has been useful to the SECC, first, as a strategy for mobili-

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30) »The electricity crisis in Soweto«. 6 June 2001. Johannesburg: SECC; press release.

31) »Soweto residents want lights on, for free«. 9 December 2001. The Star.

32) »South Africa: grassroots struggles revive«. 15 August 2001. Green Left Weekly.

33) See e.g. »We bust thieves who add billions to your power bill«. 14 November 1999. Sunday Times.

34) The word »Khanyisa« in isiZulu means »to light up«.

35) »Guerrilla technicians challenge the privatization of South Africa's public resources«. 30 August 2002.
    <http://www.inthesetimes.org/issue/26/22/feature3.shtml>.

zing the people, and secondly, to become more organized through the establishment of net-worked organizational substructures within Soweto.[36] In the case of the SECC, Sowetans' preoccupation with connectivity to the electricity grid has thus led to the development of a rather formally organized urban movement. Its activities concentrate on residents whose households are connected in principle, yet in practice have been ›switched off‹. In this way, the SECC is building on the existence of South Africa's massive post-apartheid electrificati-on programme, while simultaneously questioning the premises for and modalities of connec-tivity.

Conclusion

This article has addressed the most controversial phase in the contemporary conflicts over electricity in Soweto. From mid-2001 onwards, Eskom temporarily suspended disconnec-tions and cancelled some of the arrears,[37] Sowetans were being offered reconnections at a comparatively low price, and arrangements for monthly quota of free electricity were being made.[38] The SECC was not involved in the three-way agreement between Eskom, govern-ment agencies and the South African National Civic Organization, since officials called into question its legitimacy as a civic organization, some of them even calling it a »gang of crim-inals« or claiming that its members »wanted to create a crisis and ride on that crisis for polit-ically ulterior motives«.[39] Trevor Ngwane, by contrast, declared that the settlement »is just a strategy to divide communities but we will fight to the bitter end«.[40]

Even though the conflicts subsided in part following the agreement, the underlying pro-blems still persist. As argued above, South Africa's current transformation is informed by legacies of the apartheid era that national development programmes are intended to over-come. The resulting reconfiguration of urban spaces like Soweto entails infrastructural measures through which previously discriminated areas are upgraded materially and – in the case of networked infrastructure – interconnected translocally. However, in Soweto, these programmes are being resisted by residents opposed to the commodification of electricity services and the officially defined conditions and modalities for being connected to the infra-structure network. Highlighting what are seen to be contradictions between the govern-ment's neo-liberal policies and its proclaimed quest for a welfare-oriented policy of redistribution, alternative sociotechnical networks have emerged and given rise to an urban movement with a substantial following among the local population. Although localized in creating connections to the urban electricity grid, this urban movement is also appealing to the nation state's history and responsibilities, while at the same time linking up with global discourses and other organizational networks. The SECC accordingly demonstrates »a roo-ted attachment to locality that is already beyond its own localization« (Hamel et al. 2000, p. 1). Within the urban environment, illegal connections are giving rise to social tensions, since they foreground the existence of problematic interdependencies that have been created by

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36) »South Africa: grassroots struggles revive«. 15 August 2001. Green Left Weekly.

37) »Eskom puts the light on«. 22 October 2001. Sunday Times.

38) »Eskom signs deal to recoup R1,3 bn arrears«. 2 December 2001. The Star.

39) »Eskom v. Soweto: the struggle for power«. March 2002. Focus (Helen Suzman Foundation).

40) »Radebe vows to fuse the power pirates«. 2 December 2001. Sunday Times.

networked infrastructures. The very moment an extension cable is connected by ›guerilla electricians‹, legal consumers down the line risk being charged higher bills or inadvertently being disconnected by a cumulative power failure.

Generally speaking, the configurations and conflicts discussed in this article make it clear that urban life evolves relationally not only on the social and spatial planes, but also through and in relation to material formations. Networked infrastructures establish physical connections that create interdependencies between what in other respects are separate segments of the urban population. Through networked infrastructures, people become inevitably bound up with one another. To a large extent, the urban fabric is accordingly constituted by sociotechnical networks that cut across diverse city spaces while also expanding beyond the boundaries of the urban. At the same time, however, urban networked infrastructures go along with particular patterns of disjuncture and social fragmentation. Since social, political, economic and cultural reticulation is mediated through and embedded in sociotechnical networks, the functional and symbolic value ascribed to networked infrastructures and the experience or fear of being excluded from them create conflicts in which, among other things, the terms of equitable participation in (urban) life become an issue. Thus, in conflicts over urban networked infrastructures, the issue of physical ›connectivity‹ converges with questions of social ›connectedness‹.

Given this background, urban movements such as the SECC, which relate to the conjunction of urban identity and electricity services, have a particular socio-spatiality. In contrast to what has repeatedly been stated with regard to the »network society«, the forms of social organization that have mainly been dealt with in this article are not coextensive with infrastructural networks but instead revolve around its capillary extensions in struggling to link up with existing structures. On the one hand, this struggle takes the form of territorially bounded sub-networks within ›neighbourhoods‹ alongside the official infrastructure to which they are connected by extension lines. On the other hand, the Soweto Electricity Crisis Committee is an example of an urban movement whose activities are evolving in a dispersed parallelism to the official infrastructure network. To a large extent, this movement is made up of people whose residences are situated close to the networked electricity infrastructures. It is in this sense that the material characteristics of established infrastructure networks are informing the thematic focus, spatial horizon and social range of the activities of an urban movement that is striving to reconfigure urban identities by establishing alternative nodes and extensions.

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