



Reification and the Dictatorship of the Water Meter

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In this paper, I seek to gain an understanding of the power that water meters are able to acquire in regulating the daily rhythms of life in the South African city of Durban. In doing so, I put Georg Lukács's writings on reification to work. Lukács's theorisation of the phenomenon of reification captures the twin processes of encroaching formal rationalisation and commodity fetishism. Charting the history of the introduction of water meters and the rise in power of associated infrastructures, I seek to put a historical geographical materialist imagination to work. Thus, I develop a relational ontology of the urban waterscape before seeking to identify lines of struggle that might challenge the dictatorship of the water meter and move towards radically democratic technologies for a more equitable distribution of water.

But while it was perfectly evident to Marx that humans and machines were *like* each other, or could be *made to be* like each other, in vital ways, for Marx this observation was not the answer. It was the problem to be explained. (Kirsch and Mitchell 2004:696)

It is not only for the physical misery that it brings, but above all for the inversion of things and people that Marx condemns capitalism: for the fetishisation of social relations in other words. (Holloway 2002:52)

In a recent paper in the pages of this journal, Scott Kirsch and Don Mitchell (2004) consider the ways in which non-human "things" such as machines begin to acquire the power that they do within contemporary capitalist society. They make a compelling case for a relational ontology that builds upon historical materialist insights. This paper is intended to complement their discussion. It develops a similar methodology, whilst focussing attention on the phenomenon of reification and the closely related phenomena of alienation, fetishism and the rise of formal rationality. My theoretical discussion is developed through trying to understand the remarkable power that water infrastructure is currently acquiring over the lives of residents in the South African city of Durban. Here, water infrastructure now appears able to regulate the rhythms of life itself, through ensuring what volume of water residents will receive, and at what times that water will be available. The paper then goes on to

consider the form of social struggles that might undermine the emerging dictatorship of the water meter. Whilst this paper touches upon some of the recent exchanges over (either a rapprochement of, or the irrecconcilability of) Actor Network approaches and historical geographical materialism (Castree 2002; Kirsch and Mitchell 2004; Swyngedouw 2006), my intention is not to enter into such debates. My hope, rather, is to put a historical geographical materialist imagination to work, in order to explore the *internally* related socio-natures that comprise the contemporary waterscape. In doing this, my project is similar to that embarked upon by Kaika and Swyngedouw (2000), although my focus is more explicitly on infrastructure in the home.

These ideas are explored through a focus on Durban's waterscape. There must be few places in the world in which domestic water supplies are so heavily regulated and controlled by technological infrastructure as they are in South Africa. Much of this technology is now directed at *limiting* the water supplies of poor residents to a level considered sufficient to live on. This level, 6000 litres per household per month, is stipulated in an internationally praised free basic water policy (DWAF 2001; for discussions see Bond 2002; McDonald and Ruiters 2004). Paradoxically, a struggle for free water would seem to have resulted in a limiting of domestic supplies. In the course of this paper, I show how new struggles have since emerged from this paradox—a dialectical reading of social struggle that William Morris might have recognised.¹ The irony in restricting domestic supplies of water *because* of a free basic water policy is greater considering that water demand has fallen, as the total population of the municipality has risen. Water scarcity is neither a real nor an imagined threat in Durban.

I begin by presenting an overview of the theories I attempt to put to work in the latter part, focussing in particular on the phenomenon of reification, a process that might be understood through a marxist understanding of fetishism, in conjunction with a Weberian understanding of formal rationality (Lukács 1971; Marx 1976; Weber 1968). I then go on to show what light I consider these concepts to shed upon what might be considered to be the developing (reified) drama of Durban's waterscape, one in which infrastructure has come to acquire an increasing power over the lives of residents. The focus of this drama has shifted considerably with the ending of apartheid, as the target of water metering has shifted from the rich, hedonistic consumers of the city to the poorest. Almost without exception, the costly new technologies now being developed are intended to oversee and regulate the supplies of the *poorest* in the city. In the final part of the paper, searching for cracks in the bleak edifice that is the reified waterscape, I suggest some of the political potentials opened up by such an analysis. Here, I focus on residents' efforts to shatter the dominance of water meters in their households and the "struggle to take control of those non-human actors, those things as such, and shape

them so that the ‘nature of things’ is really on their side” (Kirsch and Mitchell 2004:702). The two main foci in this last part of the paper are the tensions opened up between formal and substantive rationality in the discourse of rights, and the radical potential within situated knowledges of the waterscape.

The Phenomenon of Reification

Reification, or “thingification”, describes the manner in which people are reduced to things and things come to acquire social characteristics. It refers to the process whereby relationships are naturalised and objects socialised. Perhaps the best-known work on the phenomenon of reification comes from the early writings of Hungarian marxist² Georg Lukács and, in particular, his collected essays in *History and Class Consciousness* (1971), first published in the 1920s. Lukács’s writings fuse the revolutionary insights of marxist theorists ranging from Ernst Bloch to Lenin together with the diagnostic account of modern society of Max Weber. *History and Class Consciousness* was to have an enormous influence on the evolving Frankfurt School of Critical Theory, although Lukács’s own relationship to the work was seen to fluctuate, depending on the pressures being exerted by the Communist Party, of which he remained a key activist in Hungary (Lukács 1971; Merrifield 2002).

Weber on Rationality

From Weber, Lukács took a multifaceted analysis of “rationality” and in particular the rise of formal rationality associated with capitalist society. Brubaker (1984) identifies at least 16 different meanings for rationality in Weber’s work: for the majority of the time it seems to be used in a double sense. On the one hand, rationality suggests a movement towards the goals of equality, fraternity and *caritas*; on the other hand, rationality implies greater control over people, the reduction of life to the principles of calculability, and the fragmentation of society. The first understanding, Weber terms substantive rationality, the second he terms formal. Formal rationality is closely associated with modern “western” society and the emerging *geist* of capitalism. It implies calculability, legal formalism and bureaucratic administration. Above all, formal rationality focuses on means of achieving *any* substantive end. In contrast, substantive rationality focuses more explicitly on those substantive ends. It implies more evaluative judgements and above all allows for the embrace of moral judgements. With the rise of modern capitalism, formal rationality has increasingly come to dominate substantive rationality: means have been privileged over ends (Weber 1968:part I, chapter 2). Thus,

characterized by a high degree of formal rationality, the modern capitalist economic order maximizes the values of calculability, efficiency and impersonality but is deeply inhospitable to egalitarian, fraternal and caritative values. (Brubaker 1984:42)

Marx on the Fetishism of Commodities

For Lukács, this analysis of formal rationality was only a part of the fate of capitalist society. In order to understand how the objects produced in such a society, such as money, then began to acquire a power over people, required turning to Marx. Thus, he combined a Weberian conception of rationality with a marxist interpretation of the fetishism of commodities. “For at this stage in the history of mankind” wrote Lukács “there is no solution that could not be found in the solution to the riddle of commodity-*structure*” (1971:83, emphasis in original). The fetishism of commodities has been something of a touchstone within western marxism for analyses of ideology (Eagleton 1994), reification (Lukács 1971), the frustration of revolutionary possibilities (Holloway 2002) as well as being considered in Lacanian psychoanalytic theory (Zizek 1989).

Interestingly, analyses of commodity fetishism have come under some fire in recent years in the literature in Geography, with Jackson (1999, 2002) suggesting an academic arrogance lying behind the suggested view that consumers are somehow ignorant to the privileged view of society held by (marxist) researchers. The new cultural geography of commodities literature has therefore moved away from what is considered an unprofitable and patronising concept. Perhaps it is not surprising, if commodity fetishism is read as such, that geographers have moved away from the concept. For, if it is understood simply as a conceptual move for revealing to consumers the production conditions or costs lying behind commodities, nearly all of the radical potential within the concept is precluded and it quite expectedly becomes imbued with a deep-seated arrogance. Such a reading is, however, quite contrary to the understanding developed by both Lukács (1971) and Marx (1976:163–177). It is worth elaborating on such a position in a little more detail, thereby clarifying my own reading of this bizarre phenomenon and distinguishing it from some of the more recent readings within the geographic literature. Later in the paper, I seek to put the concept to work in making sense of the power of water meters in Durban’s waterscape.

As with reification, fetishism refers to the strange occurrence whereby “things” appear to have social lives of their own and in which people are reduced to things (see Kirsch and Mitchell 2004 for an example of how this relies on the concept of dead labour). By fetishism, Marx is alluding to fetishistic religions in which humanly produced totems might be worshipped. In capitalist societies, the same occurs, Marx argues, with

commodities: we produce objects and then they acquire a mystical social power, thereby becoming subjects in their own right:

In order, therefore, to find, an analogy, we must take flight into the misty realm of religion. There the products of the human brain appear as autonomous figures endowed with a life of their own, which enter into relations both with each other and with the human race. So it is in the world of commodities with the products of men's hands. I call this the fetishism which attaches itself to the products of labour as soon as they are produced as commodities, and is therefore inseparable from the production of commodities. (Marx 1976:165)

Marx continues by stating that this phenomenon arises because of the "social character of the labour" which produces commodities. Here, the argument is directly linked to earlier writings on alienation (Geras 1973; Lefebvre 1991). Whenever objects are produced, they can be considered to "objectify" a part of the person and the society that produces them, be that in the form of individual creativity, love for one's work, or the particular use to which that product is then put. Because of the way in which the work process is structured in capitalist society, objects come to embody the relations of capitalist society. In particular, they embody a divorce between the producer and the means of production, and between the producer and the product (Marx 1975). We no longer produce directly for the needs of one another, but rather, in order to acquire money, such that we can buy products in order to survive. Love, care and generosity are not objectified in commodities, rather conflictual social relations and an alien control (that of the capitalist over the worker) becomes embodied in things. Thus,

To the producers, therefore, the social relations between their private labours appear as what they are, i.e. they do not appear as direct social relations between persons in their work, but rather as material relations between persons and social relations between things. (Marx 1976:165–166)

and

The objective conditions essential to the realization of labour are *alienated* from the worker and become manifest as *fetishes* endowed with a will and a soul of their own. *Commodities*, in short, appear as the purchasers of *persons*. (Marx 1976:1003, emphasis in original)

Contrary to the claim that the fetishism of commodities is a patronising reference to false consciousness on the part of foolish consumers, therefore, it becomes clear that fetishism is a description of a very real state of affairs. For Cohen (1978), this is why fetishism refers less to a hallucination than a mirage, or rather a *true* reading of a *false* situation (see also Eagleton 1994; Sayer 1987). Marx's reading of commodity fetishism does not magically reveal an obscured reality that lies behind

some real or imagined “veil”. Instead, it points to a struggle in which many of us are engaged, a struggle to regain control of our lives from the capitalist forms that currently dominate (Holloway 2002). Here, as Kirsch and Mitchell (2004) show, fresh insights are cast upon certain readings of non-human agency. The violence of the inversion that occurs through commodity fetishism also points to the everyday tragedies we encounter as houses are repossessed or when fictitious capital proves its fictitiousness. Later in the paper, I suggest it shows the everyday violence in the restriction of a household supply of water to a bare minimum.

Formal Rationality + Fetishism = Reification

By fusing the two concepts of formal rationality and the fetishism of commodities, Lukács opened up a radical interpretation of capitalist society that was to profoundly influence the development of western marxism, as well as being developed further by a variety of standpoint theorists (Haraway 1991; Harding 1986; Hartssock 1983a, 1983b). Following Weber, Lukács observes a fragmentation of both life processes and our interpretation of these life processes, as modern capitalism develops. Our days become divided up into discrete hours, minutes and seconds; our theories are divided into separate disciplines and discrete, isolated concepts. Finally, as this is brought together with the specialisation of skills, it leads to “the destruction of every image of the whole” (1971:103). Revolutionary change is thereby frustrated, as understandings of society become enclosed in a “self-created immediacy” (Lukács 1971:173). For Lukács, unlike Weber who was sceptical of the possibilities of escaping from the “iron cage of history” (Weber 1992) and unlike some of the left pessimism of the Frankfurt School (see Feenberg 1999), hope lies in the possibility of a developing class-consciousness. The activities of working people, he argues, provide what are actually valuable situated knowledges of the processes comprising reality. In the situated knowledges of working people, Lukács argues, marxism recognised the impermanence of capitalism’s forms. Capitalist forms (be these states or water meters) are seen to comprise relations, processes and struggles. They acquire only a momentary permanence (Harvey 1996). Thus, he builds upon the relational ontology and epistemology of Marx, through arguing that production (indeed capitalism in general) had been barely understood through numerous prior theorisations. Instead, only when Marx descended into the hidden abode of production and struggled to gain the vantage point of working people was he able to unlock the “secrets” of surplus value (Marx 1976:280). (Subsequent work in urban political ecology has built on this in beginning with the metabolic process of change comprising socio-natures; see Heynen et al 2006). With working people’s “awakening to consciousness” of such processes, “then

will the proletariat become the identical subject-object of history whose praxis will change reality” (Lukács 1971:197).

In summary, Lukács provides a valuable account of the fusion of rationality and commodity fetishism. He describes how our lives are fragmented into discrete, atomised activities and how our theorisations of the world become similarly fragmented. Lukács is then able to capture how subject and object are inverted to the extent that commodities control the people who created them. Finally, he develops profound insights into the possibilities for democratic social change. With working people’s relational understandings of the processes comprising capitalist society, along with their unique position as producers within such societies, Lukács suggests the possibility for a developing class consciousness and the potential for revolutionary transformation.

In the next section I put these ideas to work in trying to better understand Durban’s contemporary waterscape. I go on to describe a reified waterscape. By this, I mean one dominated by “things” or rather by technical artefacts that embody social relations. In charting the emergence of the reified waterscape, I divide the rising dominance of the water meter into two distinct periods, the first in which the primary target of metering were the wealthy residents of the city, and the second in which the target would appear to be the poorer residents. The shift from one period to the other occurs as the concerns of the local administration shift from providing a rational distribution of water to the city, to ensuring rising bulk-water costs are paid for. Formal rationality thereby meets commodity fetishism in a powerful combination. I conclude by looking at the potentials for political change and emancipation within what appears a bleak, reified drama of water delivery.

The Creeping Dictatorship of the Water Meter

The Early Years: Metering the Rich

From as early as 1919, it was becoming clear to many in Durban that industrial and economic progress in the city was being threatened by the possibility that hedonistic residential water consumption could be spiralling out of control. This needed some form of rational control if the future progress of the city was to be guaranteed. At the time, an extensive network of engineers and bureaucrats was emerging able to develop a rational distribution of water along these lines. Thus, as the local administration grew, so formal rationality was propagated through the water network. Universal metering of domestic supplies was the most obvious option for regulating the city’s rising demand for water. As a result, motions in support of universal domestic metering were tabled to the municipal government in 1919, 1934 and 1947 (City Engineer’s Report 1964). Although the motions were defeated, the debates rumbled on, as

the city was caught between its desire to fuel its rapid economic progress through an expansion of bulk-water infrastructure (what Swyngedouw (1997) describes as a productionist mentality), and its recognition of the economic costs of such schemes. Ecological debates were of little or no importance in what were portrayed as uniquely rational, bureaucratic decisions to be made by a technical elite.

In order to assess the extent of what the municipal administration assumed to be hedonistic water use, “check meters” were placed on certain properties throughout the city in the 1950s. The meters revealed consumption levels of 80–90 gallons/person/day. The City Engineer of the time, Alec Kinmont, noted that these are “extraordinarily high figures when it is pointed out that a fair average consumption per person in the City of Durban—taking into consideration climate and conditions—is 30 gallons/day” (1959:17). His report goes on to note that the current, unmetered consumption within the “White, Asiatic and Coloured and Bantu groups” was 70, 52 and 34 gallons per day, respectively. However, when households were metered, this consumption fell to 40, 10 and 6 gallons per day, respectively. One of the implications in Kinmont’s report is that this fall in demand is somehow linked to the actual needs (whether socially constituted or somehow “biologically” ascribed) of different groups, a “White” resident being assumed to require more than an “African”. The effect of the check meters, however, would seem to make it clear that this reduction is more clearly related to how much a household considers itself able to pay for.

Metering, it was clear, could become a way of using price as a way of rationally disciplining households into economically (and thereby also racially) defined consumption norms. The norms that Kinmont thought reasonable were 50 gallons, 35 gallons and 20 gallons for the three “racial” groups. By 2000, a reasonable amount of water for a member of the Bantu population might, Kinmont felt, have increased to 25 gallons per person per day. Somewhat depressingly, when comparing this to the current assumption that 25 l per person per day is a reasonable minimum for a South African citizen, Kinmont’s estimate (which is roughly four and a half times larger) seems unusually generous.

Whilst Kinmont’s report in 1959 recommended a programme of installing meters throughout the municipality, he accepted the fact “that its introduction at this stage cannot delay to any degree the construction of a new water works project” (1959:18). The reason, again, was the possibility that yet more “unprecedented industrial development or other progress” might automatically negate any reduction in demand achieved through metering. The tension between this progress and the need to rein in what seemed to be galloping consumption remained as serious as ever. Thus, in the 1960s, a dynamic new department was established, the city’s purification works were expanded to become the largest and most modern in South Africa and, alongside this, the largest

covered reservoir on the African continent was constructed (Lynski 1982). Within a few years, these extensions were also to prove inadequate for the City's rising demand for water. A drastic reduction in household consumption, to be achieved through universal metering, was an inevitable next step.

The City Council finally agreed to the universal metering of all properties in 1970 (Mayor's Minute 1970³). Initial resentment of the programme was noted (Mayor's Minute 1971) but the next year "Relatively few complaints about installations have been received and consumers have been very cooperative". By 1974, it was noted that a 3.2% decrease in consumption had been recorded "which may be attributed to water metering and favourable weather conditions" (Mayor's Minute 1974). In 1975, the Mayor's Minute records that "The universal water metering programme which commenced on the 1 May, 1971 is substantially complete and over a period of four years some 61,000 meters have been installed at an approximate cost of R2.2 million as compared with the original estimate of R2.5 million". Overall consumption through the city stabilised for the next couple of years, before resuming its seemingly inexorable rise. It seems fair to assume that the rise in demand would have much to do with the fact that many of the households receiving piped supplies of water were wealthy enough to absorb most of the tariff increases without even noticing them. At the same time, reports of further tariff increases would have reflected negatively on the city administration, thereby putting the council under pressure to hold back on a new round of price increases. It was only with a major drought in the late 1970s and early 1980s that households throughout the city really began to respond to the municipality's calls for consumption to be reduced, presumably as households became more aware of the "limits" to the current water infrastructure and subsequently introduced water-saving devices. Thus in 1983,

restrictions brought in by Umgeni Water Board⁴ as a result of the severe drought in the interior of Natal causing storage dams to fall to a dangerous level . . . [meant that] in May and June an almost 55% reduction in consumption was achieved. (City Engineer's Report 1983)

Whilst demand did increase once more, it would seem that these drought restrictions had a far greater effect on overall consumption than the introduction of universal metering. Still, universal metering has been vigorously pursued over recent years. Whilst from the 1970s onwards the water meter came to express and embody the emerging bureaucratic concerns of the local administration, it was with the formation of a semi-commercialised water board, and its desire to seek profits from the provision of water, that formal rationality came to be fused with commodity fetishism in a much more powerful combination. Here, the targets were those most endangering the realisation of these profits.

Water meters became much more powerful agents in the households of poor residents in the city.

Contemporary Debates: Metering the Poor

One of the most noticeable shifts in the role of water meters came in 1998 when replacement meters were installed in townships throughout the city. The head of eThekweni Water Services, Neil Macleod, described this process as a “military operation” (Horner 2002), later being hailed in both the national and international press for his fine efforts in “plugging the flow”. With demand for water having stabilised within the city and actually beginning to exhibit a slight fall, the logic behind this military operation was becoming less and less clear. Whilst old decaying piping did need replacing, the new meters were also seen as part of an accord with local residents. If “the slate was wiped clean”, old debts would be dropped and a new, more tightly regulated system could be put in place: the residents would thereby be obliged to maintain regular payment of bills (interview, Reg Bailey, Manager Research and Development, 29 November 2002). As it became increasingly necessary for Umgeni Water (the bulk supplier of water to the city) to realise profits through water metering, this accord became a necessary consumer contract (Loftus 2006).

Quantifying Consumption through Kiosks

The precursors to Macleod’s military operation in the townships, and the precursors to this shifting citizen–consumer nexus, are actually to be found in the informal areas of the city, although here universal metering was not an issue until late in the 1990s. Instead, water kiosks laid the foundations for a carefully commoditised supply of water to be sold to some of the poorest residents of the city. With the vast majority of informal residents lacking access to a supply of water, it was initially far more important to consider how water could first be supplied to such areas. Household connections were considered too costly an option so, instead, throughout the 1980s, standpipes were introduced. How to charge residents in these areas for a supply of water from a standpipe then became the most pressing problem. The water kiosk became one of the most attractive options and the newly formed Umgeni Water Board (now Durban’s bulk-supplier) became one of the major pioneers of such a system (Hill 1991) in KwaZulu.

The idea behind a water kiosk is fairly simple: a local “bailiff” is appointed to operate a lockable standpipe and is thereby able to charge local people for each container of water. For the water provider, this has the advantage of ensuring that water is paid for, whilst the water network in an area is still at a very basic level of development. The bailiff system has also been praised as a source of local employment with many bailiffs

establishing “spaza” shops⁵ alongside their taps. Some then expanded from these small beginnings into becoming taxi operators and successful local entrepreneurs (interview, Dominic Magubane, Community Liason Officer, 9 September 2002). Reports have gone on to argue that variants of the kiosk system can be seen as a rudimentary form of public–private partnership (Palmer Development Group 2000).

In an early study of such systems, Hill (1991) developed several criticisms. These were based on both the socio-political and economic consequences of the kiosks and the apparent commodification of water supplies implied by their introduction. Overall, drawing on Castells (1973), he argued that the introduction of kiosks was a sign of the withdrawal of the state from the provision of the means of collective consumption. Whilst in some respects Hill’s conclusions hold true, the trend since the early 1990s has not necessarily been towards greater privatisation, as he had feared. Rather, the state has remained central to the provision of water and has, in many cases, even tightened its control. The demise of the bailiff system and the development of a free basic water policy would seem to reverse some of the other trends Hill had feared. However, with the replacement of the bailiff with a plethora of technological mechanisms for the control of household supplies, many of the unequal power relations Hill saw emerging are now embodied *within the technical infrastructure itself*. As the bulk supplier to the city has been commercialised further, and as greater pressure has been exerted on the municipality to cover all costs in the supply of water, the water meter has acquired a power once only available to a water bailiff. Whilst the commoditisation first witnessed in the kiosk system has deepened with the commercialisation of bulk supplies to the city (Loftus 2006), this now takes on a more alien form, as the power to regulate a person’s access to water is invested in the plethora of technologies now dominating Durban’s waterscape.

Rationally Mechanising the Free Water Commodity

With the implementation of National Government’s free basic water policy (currently set at 6000 l/household/month), it was necessary for service providers to review the basis on which water was supplied to consumers . . . Local Authorities were therefore faced with the inevitable task of having to limit average household consumption in supply systems using some form of hydraulic control system (flow or pressure dependant) on either a supply zone basis (remote from the consumer) or customer basis (at the point of consumption). (Restor 2002:5–6)⁶

There is a very important caveat to the process described in the previous section (although in a curious reversal of the original intent, it has

heightened the very processes it is said to counteract). In 1998, eThekweni Municipality made a remarkable decision to implement a Free Basic Water Policy. Showing an apparent disregard for the discourse of water commodification at both the international level and the national level in South Africa, this promised a monthly allowance of 6000 l of water to each household, regardless of income, across the municipality. When the national government appeared to follow the example of Durban, both seemed to have made particularly bold decisions. As the above quotation shows, however, the result was the unleashing of a wave of research into new “control systems” for the limiting of household supplies (see DWAF 2002). In particular, and without any apparent irony, these technologies were to be targeted at what Restor refers to as “previously disadvantaged households” (2002:6).

The paradoxical outcomes of the free water policy cannot be separated from the commercialisation of bulk-water supplies to Durban. eThekweni Municipality buys bulk water from Umgeni Water, an entity created by the apartheid state in the 1970s against the wishes of Durban City Council. It retains a somewhat anomalous function, with eThekweni Municipality making up 85% of its bulk-water custom. More recently, Umgeni Water has been granted new freedoms to act commercially, in order to try to guarantee its survival in the post-apartheid era. Subsequently, it has expanded commercial operations into a rural water services market, as well as overseas. Both of these have failed, leaving a significant financial shortfall. In order to ensure returns to investors, Umgeni Water has fallen back on its most reliable source of income, bulk-water sales to Durban. From 1995 until 2001, Umgeni Water’s tariffs to eThekweni Municipality soared. The result was a waterscape more clearly integrated into circuits of capital than had ever occurred previously. In short, the waterscape had become an accumulation strategy (see Katz 1998 on nature as accumulation strategy) for Umgeni Water’s investors. Coinciding with the introduction of a free basic water policy, the effect was for the basic minimum of water to become the maximum that many households could afford, as Free Basic Water was accompanied with a new wave of commoditisation of supplies. In trying to capture this strange double movement, elsewhere, I have referred to the free water commodity (Loftus 2004).

The specific ways in which this commoditisation came to be expressed in water infrastructure must be set in historical and geographical context. Durban’s network of engineers and water bureaucrats were able to turn the skills used in a previous generation for the rational organisation of the city’s insatiable thirst for water to a new task, that of engineering the waterscape as an accumulation strategy. Having pioneered the fusion of the kiosk system with a new “groundtank” allowing for the safe storage of water supplies and a low-pressure piped supply of water in informal settlements, the municipality had eventually engineered the original bailiffs

out of work and was thereby able to introduce an electronic system, allowing the tanks to be filled once a day. Such technologies could then be adapted from the low-pressure systems in informal settlements and applied in townships. Thus, a contract was originally awarded to a local Durban-based company to develop a valve that could supply 200 l of water to households on a full pressure system and then shut the supply off (interview, Reg Bailey, Manager Research and Development, 5 September 2002). When it emerged that such valves were unreliable, eTWS reverted back to a more simple technology in which an orifice valve is installed. This, by severely restricting the diameter of the domestic water pipe, is able to restrict the volume of water obtainable to a minimum. In Britain, where these were also installed for a short while in the early 1990s (Bakker 2003), they became known as “tricklers” owing to the manner in which they reduce the flow of water at the tap to a trickle or a drip.

In the course of the research for this paper, both types of technology (if it is fair to call the incredibly crude orifice valve a “technology”) were seen to have been devastatingly effective, reducing mean household consumption to a level sometimes well below that of the 6 kl per month specified in the free water policy. In order to assess some of the effects of such technologies, I conducted community workshops and in-depth household interviews in three areas of the municipality. The municipality also made detailed billing records available for 10 households with which I had conducted in-depth interviews. Although there is some confusion between both the municipality and the interviewees as to when restrictive devices were installed, the last five readings for households are quite telling. Two households had an electronic flow limiter installed. For the first, the consumption for the last 5 months averaged 4.4 kl. For the second, this average was 5.4 kl. Although only four people lived in the first house, 11 lived in the second—suggesting that even by the municipality’s calculation, this was an insufficient volume of water per household member, not even approaching its own target of a minimum of 25 l of free water per person per day.

For a third household, an orifice valve had been installed rather than the electronic method of restricting supplies. Here, the mean monthly consumption for the last 5 months was 3.6 kl of water. The drastic effect of the orifice valve is quite clear in the longer-term billing records of this family. The device was installed in August 2001 and, from then on, the family has never consumed as much as the 6 kl free basic water allowance. In three months, it consumed less than 1 kl per month, and the monthly average consumption has been cut from 14.4 to 3.1 kl per month after the device was installed. In several of these months, the three-person family was clearly receiving a dangerously low volume of water. Compounding this problem is the manner in which the household head is forced to divide water between tasks and to leave stagnant water

under the tap whilst she waits for a container to fill. She describes the situation:

It takes about 1 hour to fill 10–15 l. In some houses, it's a little better but in others it's just as bad. I just put a big bucket under the tap and hold water in this. I flush the toilet with water from my washing. I did go to the Metro about this but they took no notice. I did apply for it myself but didn't know it would be like this. Other people just open it in their own way [through destroying or removing the valve] but I'm scared to do this myself. Next door has a different one. They're on a timer and are restricted from 5 in the morning until 9 and then they have no water. I went to the Metro in January of this year to get them to sort it but I've had no response. (Interview, N Dlamini, KwaMashu C, 18 March 2003)

One of the cruellest twists is the manner in which Mrs Dlamini had requested the installation of the flow limiter herself. With arrears of R2700, she felt unable to cope and asked for the municipality's help. Its proactive response, understood purely through a reifying lens of *formal rationality*, was to reduce her water supply to a trickle. Now, free of the burden of debt, Mrs Dlamini has to ensure her family somehow balances its needs for fresh water between different tasks. In the informal settlement of Inanda, other households were similarly relieved to be free of the burden of payment when standpipes began reappearing in their streets. Whilst admitting that in some ways standpipes were a regressive step and that an on-site supply of water might free women from the burden of carrying loads of water, several felt happier to be free of the dictatorship of the water meter in their homes:

The Metro came some time ago when subsidies were given for the roof tanks. Most people said yes, install these, but now they are disconnecting people. Too many have been disconnected in this area. Even where I live at my cousin's house has been disconnected. My cousin was scared to check on the size of his bill but is relieved now that he is cut off because there can't be any more debts. It's bad but standpipes are at least now being put in. There is now a clear alternative. (Interview, G Mthembu, Amatikwe, 1 February 2003)

Other technologies for the restriction of household supplies are outlined in two publications supplied to local municipalities for the implementation of the free basic water policy. Although not all these technologies are used in Durban, the Department for Water Affairs and Forestry (DWAF) is actively promoting them in other South African municipalities. Thus, in a paradox quite typical of the free water policy, the focus of most of the DWAF's free basic water implementation package revolves around the need to *limit* and control supplies in formerly disadvantaged areas. The main methods analysed in the document are: Prepaid Metering Systems; Electronic Flow Limiters; Flow Restrictors; and Standpipe Units.

Within each category, four or five different products are either tested or advertised. The promotion of these, at the same time as the DWAF has promoted the commercialisation of water boards, has helped to deepen the dictatorship that water meters now assume.

Prepayment systems, it emerges, “are a powerful tool for helping water services providers to control water wastage and customer debt” (DWAF 2002:17). The publication goes on to discuss computerised management systems and “Dallas” touch-memory read/write data carrier “buttons” for regulating poor households’ water consumption. These various technologies result in a system whereby “when the customer inserts the “Dallas” token into the prepayment unit all the credit purchased is transferred, which then allows water to flow until all the credit is used up” (DWAF 2002:17). And when the credit *is* all used up? Then, presumably, householders will be able to exchange their labour power for a money commodity, before digitising this into “Dallas” tokens and exchanging this for more water units through which their rationally mechanised life can be sustained for a few more rationally measured hours, days or weeks. In some ways, one aspect of the social reproduction of a propertyless proletariat has been perfectly digitised. The reified waterscape is perfectly organised around the rational distribution of a free water commodity and policed by an increasingly powerful array of technologies that embody and express these attendant phenomena.

Struggles to Demystify the Waterscape

This bleak situation is, of course, not without fault lines. There is by no means an absence of what Katz (2004) refers to as strategies of resilience and reworking. Perhaps, there are also signs of resistance. In this final section of the paper, I look at some of the efforts of Durban’s residents to challenge the power relations that comprise the waterscape. Some of these efforts, I argue, have paradoxically served to exacerbate the worst consequences of reification. However, such struggles are themselves transformed, as residents seek new ways of ensuring genuinely free access to water. Thus, shifting my attention from some of the formal efforts to increase the volumes of free water available, I go on to look at how residents are beginning to radicalise discourses of the right to water. Here, we might see possibilities for exploiting some of the ambiguities in both “rationality” and the post-apartheid project. Finally, I suggest some of the possibilities opened up through the struggle for a radical politics in the situated knowledges produced in working Durban’s waterscape.

On Tariffs and Cost Curves: The Struggle for Reform

Whilst some of the legacies of the free basic water policy have been traced back to the historical development of free water in Durban, the

national policy must also be seen to be the outcome of over a decade of struggle on the part of township activists, non-governmental organisations, union groups and scholar activists. The outcome, 6 kl of free water per household per month, amounted to half the demands of such activists (Bond 2002). Thus, the Anti-Privatisation Forum and the South African Municipal Workers Union have both since been calling for the free basic allowance to be increased to 12 kl per household per month. Some have been calling for an even greater volume. For Patrick Bond, one of the key scholar activists driving such a campaign forward, a problem with the current policy lies in the way in which tariffs are presently structured (Bond 2003). Whilst the current free basic water policy requires some cross-subsidisation from those consuming large volumes of water (presumably the rich) to those consuming lower volumes of water (presumably the poor), this is currently inadequate. On top of this, in most South African municipalities, the cost per kl of water rises steeply immediately after the first 6 kl of water has been consumed each month. The answer, Bond argues, is to increase the free basic allowance, and then to have a more gently rising cost curve, allowing for greater cross-subsidisation within the water sector. These points, he suggests, are amongst the demands now emerging from community groups. Put simply, the logic is that the struggle for free water has achieved some concessions and the task now should be to push for greater concessions.

It is not my intention to criticise the work of a generation of committed activists and scholars who have already achieved much to transform access to water services. However, my fear is that such struggles are currently not targeting the two processes, a hegemonic formal rationality and commodity fetishism, which have generated many of the problems outlined earlier in this paper. Although an increased free basic allowance would undoubtedly make life easier for some, it would not fundamentally challenge the relationships weaving together the consumer, the municipality, the bulk-water supplier and the bondholder. These unequal relations would continue to be expressed as an alien power biased against the poorest of the city.

This point might seem too removed from the messy world of day-to-day activism; however, I think it is vital to the direction in which we might want to see radical democratic struggle moving. I would suggest that, by focussing our energies on an improved tariff mechanism, we begin to move in a direction that is contrary to the progressive change envisaged by the vast majority of participants in this research. There are two main reasons for my fear of this, although the paradoxical result of the previous struggle for free water is also at the forefront of my mind. The first reason lies in a tendency to isolate debates over free water to a narrow technical elite, versed in the knowledge of cost curves and tariff mechanisms. Free water becomes something to be decided upon

by the technocracy and not those living and working the waterscape on a daily basis. The second reason lies in a tendency repeatedly alluded to in this paper to see the power exhibited by things to be independent of the social relations that give rise to that power. The Luddites' attacks on power looms thereby challenged the machines and not the rapidly changing social relations these came to embody. As technically versed scholar activists we challenge the tariff curves in water pricing and not the ownership and production of that water. The "struggle plumbers" who bravely reconnect people on a nightly basis in the townships of Durban transform access to water in vital ways but do not shift the relationships that first brought about the unequal distribution of water. Such struggles are not the basis for a lasting political transformation. They reflect more about the politics of survival than a progressive democratic politics. (Sagely, the old anarchist adage reminds us: "You can't blow up a social relationship".)

Interestingly, it is over such points that this paper diverges from the reading of modernity found in Weber's writings and indeed from several strains of valuable left critique. Whereas Weber saw little chance for escape from the iron cage of history, I would reassert the manner in which a relational ontology such as that developed by Marx (1976), Harvey (1973, 1996), Ollman (1976) and Lukács (1971) opens up new possibilities for struggling for alternative modernities. Whereas Marcuse saw little hope for one-dimensional man outside of "the substratum of outcasts and outsiders" (1991:260), I would reassert the manner in which our position *inside* capitalist modernity opens up relational ways of thinking through *multi*-dimensionality. Feenberg's (1999) writings on technology open up many of these issues, whilst bringing them into fascinating conversation with Foucault's "middle writings". The influence of Lukács throughout Feenberg's work is profound, suggesting interesting possibilities for human geographers in exploring a dialogue between a Lukácsian reading of socio-natures, Marcuse's work on technology and the ongoing interest in Foucauldian theorisations of power and resistance. The implications of such a position are not explored in this paper, although the project of "democratic rationalization" (Feenberg 1999:xvi) is one I would share and will go on to explore.

Radicalising the Rights-based Discourse

Such a position must surely refuse a simplistic dualism between reform and revolution. Radical change is rather a process that can emerge from what, on the surface, appears a reformist position. Thus, I would like to suggest that some of the most fruitful possibilities for transforming the reified waterscape lie in the ability of residents to transform the limited conception of rights contained in the free basic water policy into a far more radical conception of *genuinely* free water⁷. Harvey detects the

possibilities for such a radicalisation as he returns to the question of rights in some of his more recent work. He notes

on questions of rights the bourgeoisie has created such a maelstrom of contradictions on the world stage that it has unwittingly opened up several paths towards a progressive and universalising politics at the global scale. (Harvey 2000:94)

In Durban, I suggest, the evidence from community workshops and household interviews, as well as from observation of some of the more recent small-scale protests is that this is repeatedly occurring. What I find of most interest is the manner in which the form of rationality represented in the free basic water policy (formal) rubs up against a substantive rationality (or as Feenberg (1999) might put it a subversive or democratic rationality) of local residents. As Weber noted, such tensions between conceptions of rationality, when transferred to social groups, lie at the heart of much social struggle (Brubaker 1984). In the case of Durban, such contradictions open up a window for progressive change as residents question why free water means the restriction of supplies and again assert the importance of *genuinely* free water. Repeatedly, in community workshops, this questioning of free water became a radicalising moment. Frequently, it became the flashpoint around which protests would burst forth (see Lumsden and Loftus 2004). In Durban, such a radicalisation of the discourse of rights also became the basis of a court case in which Christina Manquele, a resident of the city reasserted her constitutional right to water after having been disconnected for non-payment of bills (for an extended discussion of the Manquele case, see Desai 2002).

Situated Knowledges of the Urban Waterscape

Whilst the possibility remains in Lukács's work for exploring the radical potential in this Weberian ambiguity, the move in *History and Class Consciousness* is more radical. By recognising in the situated knowledges of workers the possibility for transforming a reified consciousness into a dialectical vision of the socio-natural, Lukács found a revolutionary kernel within the phenomenon of reification. As a Communist Party stalwart, he suggested that the Party might be necessary to help working class consciousness along this road. However, the notion of situated knowledges and the struggle for a relational view of society has gone on to inspire a generation of non-partisan standpoint theorists (Haraway 1991; Harding 1986, 2004; Hartsock 1983a, 1983b; Jameson 2004).

As methodology, much within feminist standpoint theory, inspired as it is by a Lukácsian interpretation of both reification and situated knowledges, has deeply radical potential for re-interpreting the waterscape. Beginning from the marxist position that the knowledges of workers

(involved as they are in negotiating the metabolic transformation of socio-natures) provide a less perverse view of the world than that of the powerful, Hartsock (1983a) begins with the sexual division of labour and the situated knowledges of different women. Although debates have rumbled on for the last two decades over whether or not feminist standpoint theory is inherently essentialising or not (see Harding 2004 for an excellent collection and summary), theorists such as Donna Haraway have taken many of the radical ideas forward in a non-essentialist fashion. Lukács thereby re-emerges in a non-partisan and liberated form. In addition, feminist standpoint theory (and Haraway's (1993) work in particular) expands our conception of social relations beyond the capital-labour relation to include the multiplicity of relations making up the socio-natural world.

Without a doubt, the knowledges of the waterscape that emerged in the community workshops and household interviews conducted for this research varied, and this largely depended on people's relationship to the process of working the waterscape. Those working a standpipe on a daily basis had a profoundly different sense of the waterscape from those in air-conditioned offices, planning the waterscape. Similarly, the most interested and active participants in the research were women, for whom the waterscape was something traversed by a range of struggles quite different from many of the men. The wildcat protests that occasionally burst into life in Durban are almost always comprised of far larger numbers of women than men. In short, I think the knowledges of those engaged most directly in working the socio-natural relations of the urban waterscape offer radical potentials for the kind of subversive project that might be able to transform this in radical democratic ways (Loftus submitted).

Conclusion

It is with the thought of this radical democratisation of the waterscape that I would like to conclude. The potentials, I think, are abundant and become more so as we gain a better sense of the relationships that comprise the waterscape, that restrain certain people's freedoms and that invest particular infrastructure with power over households. In this sense, the water meter does have a power over people. However, this power is not autonomous, it is relationally produced and can be challenged. Moreover, through the multiplicity of relations condensed in water infrastructure, a range of actors (human and non-human) is brought together in, potentially, a powerful coalition for democratic, socio-ecological change.

In this paper, I suggested that Lukács' writings on reification offer a useful way into theorising this process. By capturing the rise of a specific form of elite rationality and bringing this together with an understanding of the fetishism of commodities, Lukács provides insights into the

topsy-turvy world in which we find ourselves “slaves to the machine”. It offers a political reading of the non-human agency so frequently encountered in technical artefacts. In the case of Durban, the phenomenon of reification presents itself through the dominance of the water meter in many people’s lives. Again, this is not an autonomous power. Rather, as Durban’s bulk-water supplier has placed greater pressure on the municipality to recover all costs from water services, so the water meter has taken on an increasingly important role in measuring and limiting domestic water supplies. Struggles for free water have both exacerbated this problem and yet radicalised into a struggle that strikes at the heart of the phenomenon of reification. I concluded by arguing that the struggle for a situated knowledge of the waterscape offers some of the richest potentials for interpreting the phenomenon of reification, for developing a relational ontology and for transforming the politics of the waterscape. This builds upon a reading of the “nature of things” that springs from an understanding of the metabolic interaction between society and nature as embodied in the work process. In a capitalist and patriarchal society this means confronting both the reified relations of capitalist society in the form of the free water commodity and the water meter, as well as building upon the not-quite-reified-but-almost world of social reproduction. This opens up the possibility that the “established fact” of the dictatorship of the water meter is actually a process of struggle—neither an illusion nor a closed book. Within this process of struggle, we might detect the potential for an alternative world and, together, open up the possibility that we might be able to transform the reified world.

With that, the hardness of all categories dissolves and phenomena which appear as things or established facts (such as commodity, value, money, the state) are also revealed as processes. The forms come to life. The categories are opened to reveal their content is struggle. (Holloway 2002:89)

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Endnotes

¹ “I pondered all these things, and how men fight and lose the battle, and the thing that they fought for comes about in spite of their defeat, and when it comes turns out not to be what they meant, and other men have to fight for what they meant under another name” (William Morris from *A Dream of John Ball*)

² I refer to “marxism” as opposed to a canonical “Marxism”.

³ The Mayor’s Minute is a record of the municipality’s proceedings for each year.

⁴ From 1983, the Umgeni Water Board became the main bulk supplier of water to the city (see Loftus 2005).

⁵ A spaza shop is a small, semi-formal shop, usually established in the house of someone in an informal settlement and selling basic groceries ranging from tea and coffee to telephone cards.

⁶ This is one report in a much larger package assembled by the Department for Water Affairs and Forestry in order to provide advice to local government on the implementation of a free basic water policy.

⁷ What this means should, perhaps, remain deliberately ambiguous. Cited repeatedly in community workshops and household interviews, the concept came to mean, for me, a democratisation of the concept of free water in everyday life.

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