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A SOCIO-CULTURAL PERSPECTIVE ON TRANSFORMATION OF GENDER ROLES AND RELATIONS, AND NON-CHANGE IN ENERGY-HEALTH PERCEPTIONS FOLLOWING ELECTRIFICATION IN RURAL SOUTH AFRICA

**Case Study for
Gender and Energy World Development Report Background Paper**

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1 INTRODUCTION

This case study draws on a PhD which used an ethnographic approach in data collection and analysis. It is informed by extensive periods of observation and interviews by the researcher embedded in two villages, Cutwini and Tsilitwa in rural South Africa. Cutwini had no electricity or modern infrastructure such as a clinic and piped water while Tsilitwa had electricity, a clinic, piped water, and three modern schools. While this case study focuses on Tsilitwa, occasional references will be made to Cutwini to provide additional insights and to support findings. Both villages are largely inhabited by the Xhosa ethnic group allowing for a common cultural reference frame and therefore for comparison of some findings. The case study illustrates that gender relations are a significant factor in understanding whether and how technologies such as electricity and electrical appliances affect women and men's lives. (Xhosa) Culture, while always changing, continues to affect daily life and perspectives. Therefore, understanding emic¹ practices and their meanings is key to understanding the expected and unexpected changes that occur due to the introduction of an energy intervention such as electricity. The emic approach also offers explanations for the responses to an energy intervention. The findings of this study show that activities such as collecting firewood and cooking are meaningful beyond their utility functions. As a result, what an etic² observer might interpret as a harmful activity or behaviour -such as collecting firewood- might from the emic perspective be a necessary part of being a 'good woman' according to the pervading culture, an opportunity to socialise or a way of accumulating symbolic capital³. This case study also pays attention to women's and men's agency⁴ in acquiring electrical appliances; the endowments that women and men use to optimise the benefits of electricity; the role of formal and informal institutions in shaping the interactions that women and men have with electricity and electrical appliances; and the transformatory changes in gender relations, awareness of indoor air pollution (IAP) and how perceptions of smoke by both firewood users and nurses in the area affect action related to IAP.

This paper starts with a discussion of the gender context of Eastern Cape where the study was undertaken, to explain gendered patterns of labour division, gendered socio-economic patterns and the historical and political issues that have shaped how gender rules are practised in that region. This is followed by a discussion of the electrification programme in Tsilitwa, highlighting the goals of the programme. The third section provides an analysis of whether and how gender roles and relations have been transformed in the context of preceding as well as concurrent social changes. The fourth section discusses the relationship that women and men have with energy, from a socio-cultural point of view and how this relationship affects both the transition to cooking with modern energy as well as the role that electricity can play in transforming gender roles and relations.

Recognising the negative health impacts of IAP -which have a specific gender dimension, and for which a transition from cooking on open fires to cooking with electricity can yield health benefits- the penultimate section of this study discusses awareness about the negative impacts of IAP, and why it is not considered to be a health threat by both the women who cook and the health professionals in the area. The final section concludes with the policy lessons from this case and the usefulness of ethnographic research for policy-making.

¹ The emic perspective takes the perspective of the insider or the respondent and the way the respondent interprets his/her surroundings.

² The etic perspective is the external, socio-scientific perspective of reality (Fetterman, 1998). From this viewpoint, the outsider is an expert observing and making interpretations according to his/her expertise.

³ Symbolic capital refers to non-material resources often available to an individual because of her/his unique and contextually important position. It includes prestige, honour or being an authority about relevant topics, enacting cultural values and other forms of recognition. Symbolic capital may be exchanged for material resources but may be lost when the individual moves out of the particular context in which such capital is relevant or when the conditions (e.g. values) of the context change.

⁴ Agency is the capacity to think and act freely or independently. It must however be understood as co-existing with structural and institutional constraints.

2 GENDER CONTEXT OF THE EASTERN CAPE FROM A HISTORICAL PERSPECTIVE

The Eastern Cape (EC) comprises the former homelands⁵ of Transkei and Ciskei and is one of the poorest provinces in South Africa. It is largely inhabited by the Xhosa ethnic groups which are traditionally patrilineal⁶ and patrilocal⁷. Since the late 1890s, work migration to urban and farm areas has provided incomes to many families. Three factors came to favour male over female migration: the gendered nature of mining and commercial farm work; the Xhosa gender division of labour whereby women are expected to take care of children, homes and parents-in-law; and restrictive mobility rules imposed in the days of apartheid which hampered female migration.

School dropout rates are higher among girls compared to boys and customary law that limits women's inheritance have meant that women historically have limited access to financial capital and other resources.⁸ In recent years, women have increasingly been migrating to job centres where they often work in low-paid jobs such as domestic work and street vending, while others end up in commercial sex work.⁹ For households where male heads have migrated to job centres, the males come home once a year -on average- during the Christmas period and few of them send remittances throughout the year. In most cases, they will buy groceries during their visit which typically lasts one to two weeks. Most women (and children) reported that these foods often last as long as the man is home, meaning that in many cases women are financially responsible for their households. In contrast, women who migrate to job centres typically come home three to four times a year.

A substantial number of households were headed by women, a result of high male migration, high rates of marital break-ups and low rates of marriages; an increasing number of women have children by different fathers, but are not married for a range of reasons. Male migration has favoured women in terms of land and house ownership. When their husbands do not return from job centres or spend many years outside the village, women become the owners of the homestead previously considered their husband's. In addition, a woman who wants to build her own homestead and own a piece of land can approach the village sub-headmen and chief, who allocates land, and hence a number of women own homesteads and fields in their own right.¹⁰

⁵ In apartheid South Africa, the homelands were 'independent' reserves for black Africans set up primarily to limit the movement of black Africans into urban areas. Due to lower industrialisation compared to the rest of the country and a poor financial resource base, they were caught in a vicious cycle of poverty. Transkei was the first to be declared a homeland in 1976, and Ciskei was the last in 1981. After democratic elections in 1994, all homelands were reincorporated back into South Africa but continue to have lower socio-economic indicators.

⁶ Patrilineality (or agnatic kinship) is a system in which one belongs to one's father's lineage. It generally involves the inheritance of property, names or titles through the male line as well.

⁷ In social anthropology, patrilocal residence or patrilocality (also virilocal residence or virilocality) is a term referring to the social system in which a married couple resides with or near the husband's parents. The concept of location may extend to a larger area such as a village, town, or clan area. This practice is found in about 69 percent of the world's cultures that have been described ethnographically.

⁸ Although the South African constitution guarantees equal rights between women and men, women continue to be denied many other rights and advantages based on their gender. Customary law in general continues to 'disinherit' women and at times government programmes appear to follow customary law as was the case of land compensations in Cutwini (See Matinga, 2010). Under colonial law, women were considered legal minors (Redding, 1993) and their inheritance depended on their husbands. Neither were they eligible to pay tax.

⁹ Respondents would sometimes refer to relatives having gone to Durban to engage in sex work. This could mean sex work or surviving by having a number of steady and short-term boyfriends. In most cases, these are women who left to look for jobs but having found none, have resorted to offering sex for economic and sometimes social survival.

¹⁰ This land ownership is within the framework of customary law. Both women and men's land rights can be threatened by modern legislation when they do not know how to ensure secure tenure or when the process for securing tenure does not adequately address their situation, e.g. when living far from land administration authorities.

Furthermore, most 'divorces' do not go through government courts or traditional courts.¹¹ Either such divorces occur when one of the spouses leaves the marriage to build a new homestead or, as in most cases, when a man or woman decides not to return to her or his spouse. In the case of a man leaving the homestead, the woman may inherit by default the house and property. This inheritance largely depends on the relationship between the woman and her mother-in-law or other relatives of her husband, and if these relations are good she may inherit the homestead; if they are not good, the woman often has to find a new place to settle.

In Xhosa culture, cattle are considered the most important investment and although mostly owned by men, a small number of women now own cattle in their own right or co-own them with their husbands. Men also own goats while women own chickens which are a less durable asset since they are more likely to be slaughtered, have lower monetary and cultural value, and are rarely treated if affected by disease. In general, furniture and household items are considered women's property because they are usually gifts from the woman's family and friends upon or within the first years of marriage. In keeping with Winther's case study on Uroa (2008), electrical appliances are as yet not part of the cache of wedding gifts. Women reported that in the case of a divorce, each partner takes whatever she/he brought into the relationship but this depends on the circumstances under which the divorce occurs.¹²

From a formal institutional point of view, the constitution has provided for gender equality since 1994 and so women can inherit and own land in principle. On the other hand, government actions at times follow older cultural rules as exemplified in Cutwini where the government gave cash to males only to compensate for land removals (under apartheid) (Matinga, 2010). In this way, it shows that both cultural and political institutions, whether formal or informal, have gender scripts that operate in parallel and sometimes seemingly contradictory ways.

Apart from inheritance, access to finance is an important factor in shaping gender relations. Women's financial positions are changing in the post-apartheid era mainly because of widespread disbursement of social security grants that include the old age pension (OAP), child support grant (CSG) and foster care grant (FSG). These government grants, particularly the OAP, have made monthly cash available to women and men of various ages, with women being the larger group of beneficiaries in all villages visited by the author.¹³ The CSG is important in that it was the most commonly accessed grant, with over 90% of the households receiving a CSG grant and many receiving more than one. Moreover, under current legislation, when both parents (or a male and female guardian) are present,¹⁴ the woman and not the man must sign for and receive the CSG. Women also tend to have more say, even in households where adult men are present, on how to spend the CSG. They exercise their agency by going shopping as soon as they receive the money. The combination of high male absence and widely accessible social security grants have meant that many women make decisions about how and on what to spend the money.

In a household where both adult men and women are present, decision-making depends on a number of factors including who has the most finances, women and men's beer-drinking habits

¹¹ One effect of colonialism and apartheid as well as the anti-apartheid movement is that the traditional chieftainships have been weakened, by putting in place administrative structures that replaced certain critical functions of chiefs. The anti-apartheid movement weakened residents' associations which could not only address the traditional issues normally addressed by chiefs such as land administration, but could also support the growing political movement.

¹² In reality, as with many divorces worldwide, this may depend on how acrimonious the divorce gets, and being a patrilocal culture, women are more likely to lose out.

¹³ In 2009, the OAP stood at R1,050 per person per month and women were eligible from the age of 60 while men were eligible from the age of 63. Age equality for receiving the OAP, set at 60 years, was introduced in 2010. The child support grant was R240 per month per eligible child and all registered South African under the age of 16 were eligible. Persons –including children- with disabilities receive R1000, as do those with HIV and/or TB who meet particular immunity-level based criteria.

¹⁴ There is a duality in household management when adult men and women are both present - the areas of decision-making responsibility are linked to gender relations and the different resources that women and men have, which they do not always use to manage the household to the same extent.

(which can lead to absences from home and therefore from decision-making), and the decision-making power of elderly women in that particular household.¹⁵ In addition, a number of households reported group decision making while women- and men-headed households also reported that when it came to buying modern items, children often influence decision-making because “*they know about these things*” or “*they crave modern things*”. Children’s decision-making influence, with respect to electrical appliances, largely relates to TVs, DVDs, mobile telephones, and to a lesser extent, to microwaves. In general however, where a couple remain married, women make decisions about day-to-day issues such as expenditures of food while men make decisions about major expenditures such as those for traditional ceremonies and house building or renovations.

What the above discussion shows is that historical, political and socio-economic factors have changed the gender landscape of the Eastern Cape, leading to a seeming mismatch between what are said to be the cultural rules and how these are practised. A majority of women head their own households as the case of Tsilitwa will further show. Despite women owning property, the engendered norms and values, that is the informal institutions that put men at an advantage over women, continue to govern daily life and many of these norms and values are unconsciously practised, only becoming apparent through long-term observation, as the case study also shows.

3 APPROACH TO ELECTRIFICATION AND ITS TARGETS IN TSILITWA

To understand the electrification approach taken in Tsilitwa it is important to point out that the village was electrified three years ahead of schedule.¹⁶ This was a result of strategic lobbying efforts by the Ward Councillor and the Village Development Forum (VDF), which largely comprises male and female village elites. The first step brought solar lighting to the village clinic. However, both the clinic managers and the village residents were dissatisfied with the quality of the lighting and its limited applications. Following a push by the VDF for grid electrification, stimulated by a high-profile political visit (See Matinga, 2010), electricity was extended to the village’s technical school and the clinic in 2002. This prompted the Ward Councillor to lobby for and obtain second-hand computers and computer lessons were introduced to the village’s technical high school. The computers were connected to the internet; while the computer rooms were used for regular classes during weekday lessons, this access was free and open to ‘all’ villagers at other times including on Saturdays.¹⁷ In addition, a telemedicine facility was installed at the clinic so that the nurses could consult with doctors at the main hospital some 30 km away, if they could not diagnose certain illnesses. Furthermore, the school’s workshops could now offer a few practical lessons whilst before they only offered theory; this had previously been limited partly due to a lack of electricity but also due to a lack of machinery.

The VDF then lobbied ESKOM for household electrification which was finally undertaken from 2003 until 2004. Households were visited and signed on to the electrification programme. They were then given the option of a 10 Amp connection for free. Such a connection would allow low power services such as lighting, radio and black-and-white TV. Or for R100 (about US\$14), the option of a 20 Amp connection could serve all household energy end-uses, such as cooking, refrigerator/freezer, power tools and others. Over 95% of the households chose for the 20 Amp

¹⁵Both women and men may defer decision-making to an elderly woman and women and to the mother of a male household head. As a result of mining-related deaths, often silicosis, there is a substantial number of elderly widows in the Eastern Cape and other migrant labour-source provinces.

¹⁶ According to ESKOM records, Tsilitwa was scheduled to be electrified in 2007, but this took place in 2003-2004. Since the Eastern Cape has a backlog in electrification, many villages are three to four years behind schedule. ESKOM is South Africa’s power utility and one of the biggest power utilities in sub-Saharan Africa both in terms of generation capacity and number of people served.

¹⁷ ‘All’ in inverted commas because not all villagers (e.g. older women and men in particular) had the skills and use for computers. In Tsilitwa, the average number of years in school was six but this decreased with increasing age. Those who had been schooled under apartheid tended to be less functionally literate since the education system was designed to perpetuate racial disparities and rural areas were the most negatively affected. At the time of the study, there were no adult literacy classes in the village.

option. All households are connected with pre-payment meters,¹⁸ aimed at giving electricity consumers more control over buying and using electricity according to what they can afford, rather than paying monthly bills. Once connected to the grid, an ESKOM official showed the households how to recharge their pre-payment meters and gave them a safety talk on the dangers of electricity. This safety talk combined with rumours around the dangers of electricity resulted in a situation in which households are fearful of using electricity when there is a thunderstorm and typically switch off every electrical appliance and lights for fear of “*being shocked to death*”. There was no specific effort to involve the villagers in decision-making beyond choosing whether they wanted a 10 Amp or a 20 Amp connection.

In addition to electrifying the households, the village’s water-pumping system was changed from being powered by diesel engine –which was susceptible to theft– to being powered by electricity. The water system, which is managed by a man, pumps water to various water tanks then on to water taps around the village. When electricity bills get too high, electricity to the water pump is cut off. Both women and men have so far refused to make monetary contributions to the water supply bills,¹⁹ seeing it as a social responsibility of the government which must be provided for free. The 1996 South African constitution does in fact provide for the right to clean water to every South African and a 2000 water policy provides for 6,000 litres per household per month for free. Many rural South African however continue to lack reliable access to clean water and clearly do not get the free 6,000 litres.

4 ELECTRIFICATION AND TRANSFORMATORY CHANGES IN GENDER ROLES AND RELATIONS

To answer the question of what transformatory changes have occurred in Tsilitwa as a result of electrification, it is important to first clarify some specific demographic aspects of the village. It is also important to acknowledge the many changes that pre-date electrification, such as the migration patterns and social security grants mentioned earlier -as well as those that have occurred concurrently with electrification. In Tsilitwa, up to 71% of the households were headed by women, 22% were headed by men, 4% were dual-headed and 4% were group-headed households.²⁰ A majority of these households are multigenerational so that grandparent(s), parent(s) and biological and ‘social’ children²¹ share a homestead. Generational differences within a household also affect intra-household energy-use patterns and electrical appliance purchases. For example, women older than 70 years often reported continuing to use firewood, paraffin and in two cases, gas, because they were unsure of how to use electricity.

Up to 91% of the households received one or more government grants, 31% had a household member who worked in an urban centre and 29% of households received remittances, although these were often irregular. A majority of women belonged to savings groups, contributing money each month and bulk-buying groceries at the end of the year which they then shared. Other groups

¹⁸ Households receive a unique number identifying their meter for purchasing electricity. The meter can be re-charged by keying the desired amount when it is running low or empty. To facilitate reading the meter, numbers indicate the level of electricity available, showing the electricity left in Rands (local currency), alongside graphics of different sizes of money bundles from big, small and none, followed by a happy face, a neutral face and a sad face in different colours. Women and men as well as children were aware of what the signs mean.

¹⁹ In the end, it falls to the ward councillor to source money to pay for the bills.

²⁰ Group-headed households are those where parents have either died or migrated to the city and children make decisions by drawing up their needs, discussing them and ‘voting’ on them. I do not call these child-headed households since all of the decision-makers were over the age of 21 years, some with their own children. Notably, there were no child-headed households in this study since upon the death of parents, orphans are immediately taken into care by grandparents or other relatives.

²¹ Social children refers to children parented by other relatives, often maternal grandparents, who are a result of pregnancies outside marriage where the biological father never paid “damages” and/or *lobola* (see note 30) or they are children of women who chose to be single. It is a term borrowed from Kuckertz (1990). For a discussion on differences with foster children, see Matinga, 2010.

distributed the saved money to members. This money is important for allowing poor women to purchase appliances including TVs, washing machines, microwaves and stoves. In contrast to the ubiquity of women's savings groups in Tsilitwa there was one men's savings group, and one women's savings group allowed two males to join it.²²

The ownership of electrical appliances in female-headed households did not differ significantly from male-headed households (see Table 1), attesting to women's agency in purchasing electrical appliances. This evidence appears to contradict that of other researchers such as James (1993) in kwaZulu Natal, South Africa and Winther (2008) in Uroa, Zanzibar who found that men are the key decision-makers in purchasing electrical appliances, and that men prefer to buy televisions over cooking stoves. One factor that might account for this difference is that social security grants, which are a source of finance for over 90% of households in Tsilitwa, were not available at the time of James' study.²³ Thus women would have been more dependent on employed persons, mostly migrant males, than they currently are. Similarly, women in Winther's study appear to have less financial independence and lower decision-making power compared to the women of Tsilitwa. The combination of individual access to finances for both women and men, combined with the fact that women head the majority of the households in Tsilitwa appears to be a critical factor in transforming decision-making patterns related to electrical appliance purchase. Thus it appears that women become empowered –in as far as purchasing decisions are concerned- in the absence of men, which reduces the competition for power niches.

Table 1: Modern energy for cooking and television ownership by gender of household head in Tsilitwa

Appliance	Female headed households n =63	Male headed households n=20
Modern energy for cooking (Electric or gas stove)	58 (95%) n=61	17 (94%) n=18
Television	39 (70%) n=56	12 (63%) n=19

Before proceeding with the discussion, two comments must be made about appliance ownership. First, the literature on energy services provision for rural areas continues to discuss power needs of rural communities by looking at their economic state and ignoring their aspirations. None of the households in Tsilitwa had a black-and-white television; when asked about this, people often responded: “*and what will I be watching? No colours?*” or “*those are old things*”. Similarly, when asked why they did not opt for a 10 Amp connection, the response was that they would not be able to cook or watch (colour) TV on such a connection. Another comment to make is that a key driver for purchasing appliances was seeing specific appliances in urban areas or at a friend's house. Just as having well-arranged and well-decorated kitchens was important in Tsilitwa (as well as in Cutwini), so was having a good TV. This discussion shows that the poor, even with monetary constraints, aspire to have good quality possessions, a point that development projects must consider when introducing ‘poverty goods’²⁴ into poor areas. Good quality appliances and objects

²² In South Africa, women dominate savings group membership whilst there are few men's savings groups and fewer mixed gender savings groups. In Tsilitwa the male savings group had the largest monthly contribution, of R1000, which is also in line with the general patterns in South Africa. The men of this savings group however reported that they sometimes defaulted on contributions and they are not as good at managing their group as women who have more experience. Women contributed between R100 and R300 per month and some of their savings groups provide micro-loans to members and non-members.

²³ Although social security policy in South Africa dates back to 1910, it initially excluded black people. The current non-racial social security policy is enshrined in the constitution of 1996 and its policy was formulated in 1997. Extensive coverage started in 2000 and after 2006 many rural households became dependent on these grants.

²⁴ By poverty goods, I mean those technologies and goods that have been designed with poor persons in mind. Some of these are crudely designed such that the target groups consider them unappealing.

affirm and give confidence to the owners that they too are part of a modern world. The second comment regards the above discussion on modern energy cooking, for which a number of points need to be made. First, to better understand the high ownership of electrical and gas stoves, it is important to remember that most households receive a social security grant, with the lowest being R240. Electric two-plate stoves, which are the most common type of stove, range in price from R120 to R260. Since many households get more than one grant, they find this affordable to buy either in cash (the majority) or using the hire-purchase scheme that all major shops provide. Secondly, having an electric or gas stove does not necessarily mean it is used all the time. A majority of the households, both women-headed and men-headed, continue to use firewood to cook, especially to cook culturally traditional foods, whilst using electricity and gas for breakfast, heating food and quick-cooking foods as well as non-traditional foods such as rice. Thirdly, TVs are more expensive than electric or gas stoves to buy but cheaper to operate. The cooking of rice on electric stoves reveals some cultural preferences linking firewood use to food tastes because sour porridge, which is a traditional dish that takes a similar time to cook as rice to cook, is often cooked using firewood rather than on electricity or gas. Masera *et al.* (2000) report similar findings in Mexico where despite government subsidies, the transition from firewood to LPG (liquid petroleum gas) is not complete because households continue to use firewood for the most energy-intensive tasks and for making traditional dishes.

Although women in Tsilitwa make day-to-day household decisions and many have some form of financial resources, the work-related roles and responsibilities of women and men have not changed substantially as a result of electrification. Women continue to be responsible for daily home chores such as cleaning the house, washing clothes, chopping firewood, cooking and collecting firewood and water. Men sometimes help with collecting water if there is some form of transport (such as a wheelbarrow), sawing firewood, and they may sweep outside the huts. Young single men typically wash their own clothes and women wash theirs and the clothes of older men and young children. Outside household tasks, men are responsible for looking after cattle and goats, and fixing fences and roofs. Agricultural tasks are generally shared between men and women according to historical gender divisions of labour. However, field abandonment is high and where fields are still ploughed, agricultural tasks are rapidly becoming fee-for-service tasks, with men's tasks changing in this way more rapidly than women's tasks.²⁵ Thus in general, most male jobs are heavy tasks that are seasonal or carried out once every few years. In at least six of the 89 households interviewed, young men undertook tasks previously considered female. When asked why this was the case, older women replied "*I don't want him to marry quickly just because he wants a woman to take care of him*" or "*I want him to know in case I die*".²⁶ Compared with women's decision-making power in the absence of men –discussed earlier– women's work roles have not changed substantially because of limited substitution; i.e. when a man is not there, the alternative choice is for the woman to make the purchase decision but when he is still there, she still has to do her work. Men's absence, which can be permanent or temporarily has however meant that their work has to be done either by women or by other men who are not obliged to do the work by being a spouse or a household member and must therefore be paid to do the work.

Electricity and to a lesser extent paraffin, have encouraged men to cook meals but these are often limited to snacks or small meals and cooking of the staples potato or rice. Traditional meals such as *umqusho* (samp and beans) and *pap* are still cooked almost exclusively by women. Many of the males who cook are young men, while older men will cook when there is limited female labour or in two cases, because they considered themselves good at preparing particular dishes. When asked why men do not cook, answers included for cultural reasons (it is a woman's task) or because

²⁵ Households tend to have a small (less than 100m²) home garden and few have larger fields on the outskirts of the village. In Tsilitwa, households prefer to pay for a tractor to plough their gardens. Larger fields are largely abandoned but in 2009, the government ploughed many of these using hired tractors.

²⁶ I use the term women here rather than mothers because these are not necessarily biological mothers. Households often include grandchildren or nieces/nephews and it is rare for children to spend their entire childhood and youth with their mother. For reasons including migration, efforts to send children to villages with better schools, the need to support aging parents with work or emotional support and failure to pay *lobola*, children often spend a substantial part of their lives with grandparents or other relatives.

women are good at cooking (i.e. they have the required skills). Furthermore, the shift in men cooking because electricity is available has been reported by Annecke (2005).

Asked why men cooked with electricity but not with firewood or dung, they reported that women are used to cooking with firewood whilst they are not. Others said that firewood is bad but women are used to it. In a way, the attitude that women can cook on firewood, which men do not consider pleasant, typifies the gender ideology that underscores life in Tsilitwa – which views men as being superior to women, something that is as much part of the Xhosa culture as it is a Christian dogma and an apartheid ideology.

Since cooking and gathering firewood are considered a woman's job, how well a woman does them and whether or not she complains about the related hardships are used consciously and unconsciously to gauge the measure of a woman. From the cultural and Christian narratives, there are desirable characteristics which women must have, for example they should have "*work in their hands*".²⁷ They must carry on their tasks with diligence and without complaining. When young men were asked what kind of a woman they would consider marrying, all but one replied that she must undertake household chores including collecting firewood, cooking, looking after his parents and relatives, and taking care of children. This desire is of course not just a personal but also a clan wish. The only young man to report that he wouldn't consider these chores a 'must' was challenged by his peers about whether a woman who did not do these (well) would be acceptable to his uncle, and he could no longer defend his position. Similar notions of a desirable woman were articulated by both older and younger women. Newly married young women were especially proud of the household tasks they undertook (including cooking and where relevant, collecting firewood) , reporting that they would not bring shame to their parents. Older women without a daughter-in-law yearn for one to take over household tasks and to make them proud of having a diligent daughter-in-law. By having a daughter-in-law, the elderly attain a form of social welfare that cannot be provided in the form of cash. Box 1 details a case which occurred during my stay, of regressing to firewood, illustrating how cultural gender scripts can impede the transformatory potential of electricity use, even where electricity is considered affordable.

Box 1: Gender roles and expectations and its impacts on electricity's transformatory potential

Matshepiso (pseudonym) was a woman in her early forties and had a government job that guaranteed her an income of about R6,000 (US\$750) per month. I got to know Matshepiso over a period of five months during which I spent several weeks living in her house. She was single, having been separated from her husband for eight years. In her household of 11 children, she used electricity for all cooking tasks as well as for heating bath water. Her household also implemented a work schedule for both female and male children so that they were involved in all tasks in a balanced manner rather than along traditional gender lines. Five months after I got to know her, she moved in with a boyfriend whose income was regularly over R10,000 (US\$1,250) per month. She however kept her previous homestead where her children continued to live.²⁸ I visited both homesteads, observing and recording her energy use profiles in both homes, which were at opposite ends of the same village. She continued to use electricity for everything at her original home but whenever she was at her boyfriend's place, she would use an open fire to heat bath water, cook meat in bulk and a few other meals. Her work pattern also changed from a woman who used to come home from work and rest while her children worked, to one who was always busy working around the home, cooking, cleaning, ironing shirts and washing. She did these jobs whether or not her boyfriend, who had a farm away from the village, was present. She was moving back to the traditional roles of a daughter-in-law and to the traditional gender roles. When I asked her why she was now cooking over a fire, she replied: "*Magi, people should know that there is now a makoti (daughter-in-law) here. It can no longer be as if he is still alone (single).*"

²⁷ The Xhosa expression "*...emsebensi ezandleni*" has been translated literally to "*...work in the hands*". This expression is different in its connotations from an expression such as asking "*do they work?*" or "*they work*" or "they do work with their hands". *Work in hands* is about skills, diligence and has a judgmental (positive or negative) connotation which the other expressions do not have.

²⁸ I slept on several occasions at both of her homes and was therefore able to make in-depth observations of the changes recounted here and why they occurred.

Further, electricity is a modern aspect of life and with every modern technology or way of living, there are parts that are welcomed into a society and others that are not, depending on what they displace. In Xhosa culture, the wood fire and the fireplace is an aspect of the culture that people would like to uphold. The value of the fireplace is however not unique to Xhosa culture or developing country settings. Milne (2003) discusses the value of the fireplace in rural Eastern Ontario in Canada. Her doctoral thesis shows how wood heat users see firewood (use) as a linking feature that is intimately connected to their farming community, and as a part of their culture, language and story-telling traditions (Milne, 2003).

As shown above, the fireplace is for the Xhosas linked to a woman's place in society (i.e. her symbolic capital), it enables the accumulation of social capital²⁹ as family and friends gather around it, and is linked to the ancestors. Young women who desired to or who cooked on electric stoves were more often referred to as "*those modern ones*" or "*those who want to be modern*". In this case, the 'modern' was seen as negative, and cooking on an electric hotplate was equated with laziness. The fact that the enactment of gender roles provides specific and valued identity for both women and men, showing how well-grounded they are in their society, has therefore limited the transformation of gender relations. A question might be asked as to why 95% keep and use, albeit not always, electric stoves and gas if they have negative cultural connotations. Firstly, the electric stove or gas fire does not embody one meaning –but multiple and sometimes seemingly contradictory meanings, including meanings of modernity in a positive sense. Its benefits of fast-cooking and launching households into a world of modern aspirations are recognised and appreciated. Thus a limit must be drawn to not over-adopt modernity at the expense of treasured Xhosa values. However, such a limit is not specifically defined and women and men have to carefully negotiate the distinct sets of ideals of Xhosa-ness and being modern.

Gathering around a fireplace and telling stories about the day and discussing cultural issues is important and occurred in all but two of the households with which I spent time.³⁰ Even in households that cooked largely or solely on electricity, the fireplace continued to be a central part of life. A number of households for example watched TV in the kitchen, huddled around the fireplace. Women, who are often around the homestead, referred to the fireplace as a place that provided comfort, explaining that the fire reduced loneliness when other household members were not present.

What the above brief analysis shows is that various changes such as women's increased ability to head their own households and make decisions there (in this case largely caused by male migration and low rates of marriage), and women's increased access to endowments and finances (in this case caused by government grants) are required to enable the transformatory role of electricity. However, gender relations have been slow to change since the gender ideology of male superiority continues to exist, although women's roles are being fulfilled in some cases in new ways (e.g. cooking on electricity, paying for firewood rather than collecting it themselves). Thus as the women have gained autonomy, and improved their financial positions, their roles have been rearranged.

An important factor to consider is that change in gender relations entails changing positions and shifts in the balance of power. In such a process there will be winners and losers and such changes are therefore likely to take longer because they meet resistance from the potential losers. This is so because those in power will want to defend their stronger positions due to the privileges such positions bestow. On the other hand, those considered to be in weak positions have to change their way of thinking and their conditioning about what is possible. They then need to relinquish whatever advantages - such as identity, status and certainty - that their positions now provide, for the uncertain advantages of a position of equality. Further, in considering the gender

²⁹ Social capital refers to the information, trust, and norms of reciprocity inherent in one's social networks (Woolcock 1998: 153). Social networks and reciprocity are particularly critical in maintaining social capital.

³⁰ These two households were limited by the fact that they only had cement-plastered kitchen floors and therefore did not make indoor fires. Although one had an outside fireplace where they cooked in daylight, this fireplace was impractical for sitting around at night.

impacts of electricity, it is important not just to look at gender roles or relations but to differentiate the various gender needs, i.e. practical, productive and strategic needs. While *practical* needs such as access to modern energy can address the practical problems of collecting or using firewood and therefore change how the roles are fulfilled, they do not necessarily change roles and relations. Addressing *strategic* needs on the other hand, is linked to addressing decision-making issues and gender empowerment which can lead to better participation of women and men in deciding which of their needs must be prioritised and how. Moreover, because addressing strategic needs entails changing power relations, it is more likely to be met with resistance which requires a clear understanding of what is culturally relevant and what is at stake for both women and men. Addressing *productive* needs on the other hand, might provide new resources that can change how things are done or change positions.

Finally, the analysis shows that electricity and associated technologies are not gender-neutral; neither do they act in one direction, i.e. to transform women and men's attitudes about gender relations. Rather, once it is brought into a community, electricity is scripted into the community according to the community's own gender and cultural landscape. As much as electricity might change young men's behaviours and make them more likely to cook, electricity also becomes an artefact to speak about life's meanings including gender relations. Women and men can use an artefact such as a stove to make judgments of situations as well as judgments of other people conforming to the prevailing norms and values. The artefact can become incorporated into traditional judgments and therefore be used to judge whether or not a woman is a 'good woman', i.e. is she lazy or too modern? Electricity's ability to transform gender relations might therefore be limited not just by physical endowments of property ownership and cash for buying appliances, but also by the existing norms and values of the informal institutions that govern daily life. Women and men may therefore have to choose whether the gains they perceive from using such technology outweigh the perceived losses, for example loss of social and symbolic capitals. These are forms of capital that are often neglected in economic analyses and are barely observable using survey methodology; they are revealed by lengthy observation periods with the researcher embedded in the community. Although electricity might not have brought substantial transformatory changes in gender roles and relations in Tsilitwa, it has changed life there in other ways. The next section looks at the social and economic changes that electricity has brought for Tsilitwa's women and men.

5 WOMEN'S AND MEN'S RELATIONSHIPS WITH ENERGY FROM A SOCIO-CULTURAL PERSPECTIVE

To gain an understanding of some of the reasons why electrification appears to have had a low impact on gender relations requires a more in-depth look at the relationship that women and men have to traditional forms of energy, and therefore the meanings that electricity gives to their lives when it becomes a potential replacement for firewood and the fireplace. This section looks at the gendered socio-cultural relations to energy by using women's expressions as a starting point. As I conducted interviews with women about the health impacts of firewood collection as well as cooking with firewood and/or paraffin, I noted that women were not forthcoming in their responses. However, as I lived in the village over a longer period of time and interacted with them in settings such as funerals, village ceremonies, shopping, firewood collection (in Cutwini) and water collection trips, women would spontaneously start discussing the problems they faced. However, other women would criticise those who talked about the negative effects of carrying or using firewood as being lazy or "soft". To understand the women's struggle with articulating their experiences, Arderner's 'theory of muted groups' (1975) which was further developed by Kramarae (1981) is useful. Arderner posits that asymmetrical relations affect how subordinated groups communicate because social groups tend to prioritise the communication styles of the dominant group. Thus, where women have traditionally been the subordinate group, their communication styles and content as the subordinate group have been muted (silenced).

The process of muting rural women's experiences is however not limited to the men of their social group. Research methods that do not include an understanding of a culture and its expressions also mute experiences of both women and men. In structured research surveys, women and men must limit themselves to the questions and issues posed by others and whatever falls outside the prescribed questions is often ignored. Thus the researcher, an outsider in the community, becomes part of a dominant group that mutes rural women and men; and *etic* research which is prioritised by policy-makers mutes *emic* research which could better explain the values and motivations of rural women and men. In other cases, the limits of the responses are set in a way that is culturally incongruent.³¹

Another reason for women's apparent inability to express their views on their situation as well as the limitations of gender relations transformation is a result of the fact that activities such as firewood collection and cooking around a fireplace are an integral part of their lives. Since women start collecting firewood and (helping with) cooking from around the age of six, they master both the tasks as well as absorbing the related gender ideologies. The gender differences in roles and relations serve valuable functions within the cultural contexts of their communities and therefore continue to exist. By adhering to them, both women and men stand to gain according to their cultural reference point although such gains may be counted as losses or barriers to development. To understand this, the notion of symbolic capital is useful. Symbolic capital can be seen as a tangible display of social status, an example of which is the prestige that is gained from having a particular skills set. Thus women who have the skills to collect firewood or cook even under adverse circumstances are seen as 'good women'. One woman, for example, told me she collected firewood more times than other women in her household because she wants to get married and get a good *lobola*³². Also as stated earlier in Box 1, by working in a culturally prescribed manner around the homestead of her boyfriend, Matshepiso gains symbolic capital.³³ Thus changes in gender roles can lead to a loss of this social status and so women themselves may be reluctant to welcome change. Whenever I asked women whether it would be better if men helped with some of their tasks, the answer I got was often "*what will I be doing then?*" This can perhaps be rephrased as, what will my social status then be? What authority will I have and what will legitimise me as a good, nurturing woman?

6 AWARENESS OF RISKS OF INDOOR AIR POLLUTION

A key potential benefit of providing electricity or other forms of modern energy to poor households is the reduction of indoor air pollution (IAP) resulting from the burning of solid fuels. IAP from solid fuels reportedly kills 1.6 to 2 million people each year (Smith, 2000). The following section looks at whether and how the government has met its policy objectives of dealing with the health impacts of firewood use, dung and paraffin use in rural areas, and how women and men perceive IAP.

The government of South Africa acknowledges the adverse impacts of IAP on women and children in its Energy Policy paper and pledges to address these impacts. This acknowledgement however focuses on women rather than an understanding of gender differences in exposure levels. Thus the underlying assumption is that women are affected because they spend long periods of time cooking in smoky environments. Such an assumption ignores non-cooking aspects of the exposure. In the morning, breakfast is eaten in smoky kitchens by both women and men. In the evenings, men sit down with their families to eat and discuss the day's events. Thus while

³¹ A Likert scale question administered to people whose cultural framework does not rate situations in such ordinal terms is an example of a culturally incongruent measure and therefore a limited reference frame. In Xhosa for example, ideophones, gestures and idioms are used more often to describe intensities and the importance of a situation rather than an ordinal rating.

³² Lobola is the negotiated wealth which a man and his family give to the kin of his prospective wife before he can assume the rights of a husband and father to his biological children with that woman. In Eastern Cape, this is normally in the form of cattle or a cash equivalent.

³³ This is not limited to Xhosa women and Annecke (1999), a feminist working in the energy sector has written an account of her own "*collusion in the system*" as a cook which granted her the opportunity to nurture "*a certain authority, status and legitimacy*". (Annecke, 1999 in Matinga, 2010 :192).

women's levels of exposure in terms of time spent around the fire are higher than those of men, men also experience some exposure. Moreover, the kitchen is the place for receiving guests so that all household members experience hours of smoke exposure on a daily basis. In Tsilitwa in households without a lounge – and these are in the majority – time spent in smoky environments might increase since the fire is often kept stocked while watching TV. In the four households where detailed 24-hour observations were recorded, men spent one to three hours in the kitchen while women spent three to six hours in the kitchen. Another aspect of time of exposure was that it differed by age. Infants, toddlers and the elderly – both women and men – spent the longest time in smoky environments compared to school-going children and young men. Among the young, from the ages of 8 to 30, girls spent substantially more time than boys in the kitchen.

By focusing on availability of electricity only, without understanding the local realities of Tsilitwa, the objective of expanding electricity access was met while the opportunity to address the energy-health impacts as stated in the policy were compromised; this is so since there were no comprehensive programmes that address thermal needs or improve biomass burning in such a way as to avoid high levels of IAP. Ignoring these needs of rural women and men appears astonishing in post-apartheid South Africa given the ANC government's restitution and social programmes. This mismatch can be explained in at least two ways.

The first is that rural women and men continue to be politically invisible and are therefore excluded from decision-making. Skutsch (2005) suggests that including women and men in management related decision-making on energy projects can be a conduit to their empowerment. Their exclusion of rural women and men from the electrification decision-making process is therefore not only a lost opportunity to meet practical and productive needs but also to meet strategic gender needs that might have enabled some transformatory aspects of electrification.

The second explanation for the policy mismatch is that the interests of women and men are articulated by elite women and men who are responsible for policy-making. Yet without the engagement of the rural women and men, the policies are made with little understanding of their realities. The South African Department of Energy has thus largely ignored firewood in the programmes it has implemented so far. The assumption that when electricity is provided to rural households and made affordable, households will make a transition to using it and therefore avoid health impacts such as those that result from IAP has therefore been erroneous. Issues such as cultural aspects of firewood use and the apparent contradictions and resistance to using electricity as discussed earlier, are rarely known or acknowledged by policy-makers. Akrich (1992) uses the notion of the 'script' to understand such contradictions and resistance to technology in society. Technology designers as well as policy-makers inscribe their own predictions on the priorities, how the user will use the technology and take advantage of the benefits. However, target groups (users of the technology) may have different priorities, and may use such technologies differently. It is only when the users' context is better understood that policy-makers can then design policies and programmes that are more suitable to the context.

Apart from some cultural reasons for continued use of firewood, the decision to make the transition to something new often entails weighing risks and benefits of continuing business-as-usual compared to the risks and benefits of the transition. In Tsilitwa, a majority of the households have made the transition from firewood collection to purchasing firewood over several decades. This transition has taken place as a result of forest administration rules (Tropp, 2006), where colonial forest administrators set out to punish those who collected firewood (with aids other than head-loading) with steep fines or imprisonment, so that purchasing wood started to become part of the social system.³⁴ In recent years, increased access to cash, availability of collectors (mechanised collection using tractors rather than manual collection by women and men), combined with flexible

³⁴ Due to accessibility and resistance movements, such forestry administration was implemented unevenly and therefore had uneven results. In Cutwini for example, households continued to collect from the many forests that surround the small village, often without paying any fees. In addition, because there is almost no criminality in Cutwini, women do not feel threatened when collecting firewood and so 'modifying risks' were too minimal to effect behaviour change from collecting firewood to purchasing it.

payment options and fears of physical and sexual violence during firewood collection (Matinga, 2010), have further increased the number of households that purchase firewood. In contrast, users of firewood perceive cooking on open fires as a low risk. When asked about the effects of using firewood on their health, the responses either stated that there were no impacts or that they experienced eye irritations and chest (respiratory) problems including coughing and breathlessness due to smoke, but did not perceive these as particularly harmful to their health. In contrast to the literature that shows that indoor air pollution (IAP) can be fatal (Smith, 2000), none of the respondents was aware of this. This lack of awareness of adverse impacts of IAP is further illustrated by the fact that although households were aware that opening windows would improve indoor air quality, few opened them while others blocked gaps and windows with rags to stop “cold” air from coming in. The lack of awareness about the adverse effects of IAP was also noted among health professionals in the village and surrounding health service areas. While nurse and health programme managers acknowledged that IAP has impacts on respiratory health, they, like the household respondents, talked about the fact that Xhosa women grow up “*in smoke*” and therefore did not perceive it as a threat to health with respect to the particular issue of IAP.

Beyond the lack of awareness, two other barriers to households’ understanding of impacts of IAP are critical. The first is the lack of confidence that the women have in the health system. Women expressed doubt as to whether they would be taken seriously if they were to report to the clinic that they had respiratory problems brought about by smoke. The second is that when women and men attend clinics, they are given medication without an accounting of why they had a particular ailment. This is critical in the context of chronic IAP-related health problems. At the clinics, there were four main diagnoses for respiratory infections: asthma, common cold, flu and TB. Therefore, when an individual had a chronic respiratory problem outside these four and it was not explained, they felt that the health personnel were not skilled enough to make a diagnosis. The lack of explanations at medical establishments was often contrasted with the detailed explanations that individuals get from traditional healers. This difference in how ‘healers’ deal with service users creates an attitude that for chronic illnesses, medical professionals who operate within the western-informed bio-medical model are less skilful. Although chronic respiratory illnesses in women are rarely addressed, there is an extensive health programme to address chronic respiratory problems in men because of high levels of mining-related silicosis. When I asked the nurses and programme managers – all of whom were women who had grown up cooking on open fires in Xhosa households – why such programmes did not address women’s respiratory health problems, the answer was that “*women do not work in polluted environments*” and that their training did not include IAP. This statement and the lack of awareness campaigns on IAP show a mismatch between the policy-makers’ perceptions of reality and villagers’ lived experiences of reality.

Moreover, there was a lack of awareness of the existence of improved cook stoves. Only five people (three in Cutwini and two in Tsilitwa) reported ever having heard of improved cook stoves. One was a man and four were women and all of them reported seeing improved cook stoves in Durban (i.e. urban centres in KwaZulu Natal) among *makwerekwere* (black African immigrants). The lack of awareness of improved cook stoves may be explained by the fact that there are no improved cook stove programmes in the village or surrounding area nor are they promoted on radio or TV. The few improved cook stove programmes that have been implemented in South Africa have largely been limited to urban areas to limit the impacts of coal use.

7 CONCLUSION

The main conclusion from the above analysis is that history and culture have shaped daily life in Tsilitwa in specific gendered ways. As such, electricity is one of the many changes upon this ever changing culture-scape. Within a period of five years, electricity has started supporting changes in roles of women and men where cooking is concerned. In terms of decision-making with regard to the purchase of appliances, the critical factors are access to income by both women and men and women’s increasing agency. The latter in the case of Tsilitwa and the Eastern Cape has been made possible largely by the (unplanned) absence of men rather than as a conscious choice made by women and men as a result of understanding and accepting a different gender relations model.

A key lesson that the case offers to policy-makers is that policy and development cannot be implemented without an understanding of cultural and gendered meanings of everyday objects, including the technologies that are often erroneously assumed to be a-cultural and gender-neutral. Understanding how various technologies and interventions can be interpreted by the intended beneficiaries is critical to implementing programmes that are both culturally and gender sensitive.

The rural poor are likely to be targeted with products that are seen by well-meaning donors and governments as pro-poor. However, if the population groups that these poor aspire to join the ranks of do not use such products, or if the products do not meet the *emic* interpretations of a 'good' product, they are unlikely to be adopted. Developing a range of pro-poor products that can be seen as desirable and adding aesthetic value to people's surroundings is therefore critical.

From the analysis, it is clear that for electricity to have a transformatory effect on gender relations, various departments and agencies must be involved in the processes. Ensuring that both women and men understand the importance of gender equity and encouraging new interpretations of culturally relevant concepts such as 'a good woman' would have to be part of such a process. Although a range of development programmes claim a gender approach, their programmes are often implemented using a women-in-development approach. While this has its own benefits, its potential may be limited when the targeted women have to go back into their society and still show that they are good women according to the unchanged cultural interpretations. In other words, transforming women's lives and attitudes without transforming men's (and the wider society's) lives and attitudes will limit transformatory outcomes. Similarly with regard to IAP, targeting energy solutions can only be inadequate in a context where medical health personnel are unaware of research on the severity of impacts of IAP and therefore continue to see it as an irritation rather than a health threat.

Finally, this case study makes clear the value of ethnography for the energy sector. It is almost impossible when using survey techniques to see how a pile of wood or cooking with firewood convinces a mother-in-law and the society at large that a woman will be a good daughter-in-law and so resist changing to cooking with electricity, or to understand how traditional healers' interactive methods make them more authoritative than medical professionals in the eyes of the locals.

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