Solar Cookers and Social Classes in Southern Africa

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Introduction

Once upon a time, perched atop the Drakensberg Mountains above the Republic of South Africa, there lay a tiny country called Lesotho. Lesotho (pronounced le-SOO-too) was inhabited by Basotho (singular "Mosotho") who farmed the mountainous terrain. One day, trekking over the crags, a group of foreigners arrived in the village of Thaba Tseka, in the center of Lesotho. They carried with them 45 odd-looking boxes which they said could use the light of the sun to cook food. The boxes were a gift for the people of Thaba Tseka.

I could write an essay about why the people of Thaba Tseka did not adopt the solar box cookers brought to them by those well-meaning foreigners from the University of Cape Town. But I won't. First, such an essay has already been written. Second, I am no expert. I am avoiding writing this story in standard academese — in the passive voice, with lots of footnotes and three-syllable words — in order to avoid giving anyone the impression that I might know a lot about the subject of solar box cooker use in Lesotho.

You might justifiably wonder why, if I'm not all that knowledgeable about the subject, I am bothering to write this article (or, more to the point, why you are bothering to read it). Remember: I didn't say that I am ignorant, only that I'm not an expert. I did live in Lesotho for two years, from December of 1991 to December of 1993, during which time I taught high school math, physics and literature at a high school in Mafeteng District in southern Lesotho. I hope that, even though I'm no Mosotho, my first-hand experience in the country can provide some insight into the difficulties involved in disseminating solar box cookers in Lesotho.

One last disclaimer before I begin: in keeping with my get-you-thinking (as opposed to construct-an-ironclad-argument) approach to this paper, some of the distinctions and definitions I discuss may be fuzzy. For example, I am going

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to talk about three types of people in Lesotho: rural housewives, urban sophisticates, and wanna-be's. I claim neither that these three groups constitute an exhaustive description of Basotho nor even that they represent meaningful sociological groups. I discuss these three groups because, based upon my necessarily somewhat limited experience in Lesotho, these three *ad hoc* groups seem most relevant and useful for discussing the dissemination of solar box cookers. Eventually I hope to persuade you that, of the three groups of people in Lesotho whom I have mentioned — rural women, urban sophisticates, and the wanna-be's — the third group is most likely to adopt solar box cookers; however, even they probably will not do so because they tend to emulate the West, and we don't use solar box cookers.

Rural Women

We start where the people from the University of Cape Town started, in the mountains of Lesotho. I should explain that the term "in the mountains" is relative. Everywhere in Lesotho is in the mountains: Lesotho has the highest low-point of any country in the world. My school, Mt. Tabor High School, was located in the lowlands, even though its elevation was 1750 m (5750 ft.). For the purposes of this discussion, people who live in the mountains are those who live far from any main road, who live without vehicles or electricity or running water.

Without a doubt, rural women need solar box cookers more than anyone else in Lesotho. The mountains there are almost completely devoid of trees, so that the average woman spends two hours a day gathering wood. Solar box cookers could save such women those two hours each day. Even the women who cook on kerosene stoves could benefit from solar box cookers: especially in a rural environment, money for kerosene is rare indeed. And sometimes the shops in the mountains are out of kerosene for up to two months.

An obvious additional benefit of solar box cooker use would be the preservation of what few trees remain in Lesotho; unfortunately, such a goal does not make sense to many Basotho. I am sure that, if there were a competing need for trees — if, for example, the trees were needed as building material — then many Basotho would have an easier time accepting that solar box cookers were necessary in order to preserve the trees for later use. However, the goal of saving trees *for the trees' sake* is a foreign idea. A friend of mine, Megan McCarthy, who was teaching at a high school near mine, mentioned in class one day Lesotho's lack of trees. The students disagreed with

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her, and going to the window, they pointed out at the windswept plains: "Look, there's a tree over there," they said, "and another one over there. . . " For Megan's students, having four or five trees in sight was plenty. No more were necessary. Once when I expressed to a student my delight at having located a nest of an endangered bird, the bald ibis, on the mountain where we lived, I found myself having to explain the concept of an "endangered species" to him. When Tsepo understood that this particular species of bird might no longer exist in a few years, his first question was, "Are they useful?" If no one needs bald ibises for anything, Tsepo reasoned, why bother to preserve them?

This lack of an ecological perspective is a particularly large stumbling block for a group such as Solar Box Cookers International, which seeks to increase the use of solar box cookers worldwide. S.B.C.I. is fundamentally an environmental organization. One could, I suppose, argue that the foreigners who bring solar box cookers to Lesotho do so because they are concerned that the Basotho women are doing so much extra work gathering wood and spending so much extra money on kerosene. But realistically, the primary reason for outsiders to care about solar box cooker use in Lesotho is precisely because those outsiders have developed a global ecological perspective which includes Lesotho. Destruction of the local environment in Lesotho is also destruction of the global environment in which we all live. Unfortunately for the outsiders, crossing the mountains with their truckloads of ill-fated solar box cookers, concern for the environment is a post-industrial concern: in most cases, people do not begin to seriously worry about the environment until they have reached a certain stage of development. The Basotho are not going to start caring about saving trees until they can stop caring about getting the telephone poles erected leading to their homes.

The second stumbling block is more obvious than the rural Basotho's lack of global environmental concern: people anywhere, but particularly people in rural, traditional cultures, resist innovation. The intrepid folk from the University of Cape Town who so valiantly trucked their 45 solar box cookers to Thaba Tseka discovered the Basotho's unwillingness to change. In fact, that resistance to outside ideas is so strong that one man, Anthony Scott, told me that foreigners simply cannot bring solar energy to Lesotho's villages. Anthony was born in Lesotho and lives there now, running a general store in the village of Mpharane. He is a strong proponent of solar energy use in Lesotho, yet in the few hours in

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which I met with him, he repeatedly assured me that solar box cookers will not, cannot be disseminated in Lesotho by foreigners. The problem is particularly acute for people who come to Lesotho for a brief stint of a few months or a year or two; however, even for Anthony, who lives in Lesotho permanently, the distrust of foreign ideas is too strong. The need for solar box cookers must come from the Basotho, rather than from well-meaning outsiders.

In America or any other industrialized nation, such needs can be created through advertising. For obvious reasons, however, advertising cannot succeed in the mountains of Lesotho. The infrastructure and technology simply do not exist. You can't make television commercials for a place without televisions. No one in rural Lesotho gets magazines or newspapers. There are no billboards. In addition to their distrust of foreign ideas, the people in the mountains of Lesotho are not easily reachable by way of normal advertising techniques.

I may have given you the impression, two paragraphs ago, that Anthony Scott is completely pessimistic about the spread of solar box cookers in Lesotho. He isn't. However, before we start talking about what he is doing, let's review the show so far in the following table:

	Rural Women
Financial Need	Yes
Need for an Easier Cooking Method	Yes
Environmental Concern	No
Openness to New Ideas	No
Susceptibility to Advertising	No

I have mentioned five different criteria upon which to judge the likelihood that people will adopt solar box cookers. Women in the mountains of Lesotho might be convinced to use solar box cookers because they are cheaper than kerosene and easier than gathering wood. On the other hand, rural Basotho tend to lack the global perspective that makes tree preservation a priority. Furthermore, they are suspicious of innovation and not easily reachable through advertising.

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Urban Sophisticates

One way to change the three "No's" in the above table into "Yes's" is to change the target market. Anthony Scott, although he lives relatively far from the city, aims his current efforts at a relatively sophisticated urban crowd. He hopes to establish a school in Mpharane, his home, at which Basotho will teach other Basotho about solar energy. His plans, however, are not limited solely to the introduction of solar box cookers, and I am going to explain why I think his efforts are more likely to meet with success in advanced technologies such as photovoltaic cells.

Before that discussion, however, I'd like to introduce you to at least one urban sophisticate. In the previous section about rural women, I did not have a lot of primary experience upon which to draw. My school was not very far back in the mountains. On the other hand, I did make some friends in the capital, Maseru. Palesa Moitse is a 26-year-old Mosotho lawyer living in Maseru. The daughter of university professors, she grew up going to international schools, sometimes in Lesotho and sometimes in Swaziland. She got her law degree at the National University of Lesotho and, when I was in Lesotho, worked for an insurance firm in Maseru. Not only does Palesa's apartment have running water and electricity, it also has a television, a refrigerator and an electric oven.

Clearly, a person like Palesa does not need a solar box cooker. Yes, she is concerned about the environment. Yes, she is open to new ideas. Yes, she is susceptible to advertising. But a solar box cooker is simply inappropriate for her lifestyle. Although it might be a bit cheaper than her electric stove, the cost difference is negligible. Furthermore, she would rarely have the time nor a place in which to use a solar box cooker. By the time she gets home from work at 5:00 p.m., the sun is low in the sky. If anything, Palesa could use a microwave oven, not a solar box cooker. Solar box cookers are not technologically advanced enough for the urban sophisticates.

One solution — the solution which Anthony Scott plans to pursue — is to target the sophisticated end of the market with upscale versions of solar box cookers and then hope for a trickle-down. Anthony has developed a solar box cooker made of wood, sheet metal and glass which will withstand Lesotho's harsh climate. That model costs about R200 (US $60). However, he has plans underway to develop a R1000 (US $300) model which would do indoor cooking using C.P.C.'s (solar cells which would allow energy to be transmitted from an

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outdoor, sunlight-exposed location to the cooker indoors). The way to get an idea accepted, he claims, is to get the rich people to do it first. Since rich people don't want to buy standard solar box cookers, more advanced models must be made available. After they have started using solar energy, others will emulate them. The innovation will spread outward from the cities.

I have difficulty imagining exactly how that trickle-down will occur, but the difficulty may be in my imagination rather than in the theory itself. At first, the idea that Palesa Moitse's buying a C.P.C. oven in Maseru will lead eventually to the adoption of solar box cookers by women in Thaba Tseka seems absurd. However, if we allow that the trickle-down process from the urban sophisticates to rural women may take several generations, then I will grant that, perhaps, such a process might occur.

I only make that concession, however, because I have a more telling card to play: I don't believe that Palesa Moitse or people like her are going to buy even the most technologically advanced, C.P.C.-based solar cookers. After all, not much separates Palesa's day-to-day lifestyle from that of a middle-class American. For the same reasons that solar energy has failed to catch on in America, it will fail to catch on among the urban elite in Lesotho. The savings in money and the preservation of the environment are not strong enough arguments in favor of solar cookers to outweigh the inconvenience of even the most advanced models.

	Rural Women	Urban Sophisti-cates
Financial Need	Yes	No
Need for an Easier Cooking Method	Yes	No
Environmental Concern	No	Yes
Openness to New Ideas	No	Yes
Susceptibility to Advertising	No	Yes

The Wanna-Be's

It's time to own up, though: I don't imagine that anyone really expects the urban sophisticates of Lesotho to adopt solar box cookers. In fact, I've been beating on a straw man throughout most of the previous section of this paper.

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Anthony Scott does not plan to target the Palesa Moitse's of Lesotho. I have included the discussion of urban sophisticates in order to make clear that there are people in Lesotho for whom solar energy is inappropriate or, at least, very unlikely to catch on. The description of urban sophisticates also provides a foil for the next group of people whom I will discuss. This group, sandwiched between the rural people and the urban sophisticates, consists of the many people in Lesotho who want to be urban sophisticates but who have not achieved the required level of income and education. For lack of a better name, I will call this large group of people the "wanna-be's."

Virtually every one of the students and teachers with whom I worked in Lesotho was a wanna-be. For that matter, virtually everyone I know in America is a wanna-be: they want to be richer, live in a better neighborhood, drive a snazzier car. I am not making a judgement about those desires, only pointing out that Americans do not have a monopoly on such covetousness. In fact, the division between urban sophisticates and wanna-be's is rather artificial; a more accurate set of labels might be "the rich ones" and "the not-so-rich ones." Certainly the rich ones, like rich people anywhere, want to be richer. The teachers at Mt. Tabor High School are some of the not-so-rich ones. They often talked about the electronic equipment they had or wanted: Ntate Phenethe spoke of the television set he kept at his mother's house; Ntate Mqathazane carried his shortwave radio around with him everywhere; Ntate Kiwanuka bought my Minolta single-lens reflex camera even though it was far more complicated than he would ever need. Similarly, the universal goal among the students at Mt. Tabor High School is to have what they call a "bright future." I discussed the phrase "bright future" with my literature class one day. After a brainstorming session we had a list of twenty or so sub-goals which comprised what they considered to be a bright future: owning a nice car, having a house with ten rooms, eating meat as often as they wished, wearing expensive clothing and so on. However, after discussing the list with the class, we came to the conclusion that all of their goals could be summarized in one word: money.

Of the three groups of Basotho whom I have discussed, this third group — the type of people with whom I spent most of my time in Lesotho — is most likely to adopt solar box cookers. First, they are fairly open to new ideas. Certainly the notion of progress is not as strong among my students as it is among their counterparts in Machabeng, the international school in Maseru; however, almost

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all of my students unflinchingly considered development, that is, Westernization, in any form to be an improvement. In keeping with that belief, they were as open as any American teenager to influence by advertising. Admittedly, the advertising media does not inundate them nearly as completely as in the States, but what little advertising does reach them, in magazines and by radio, clearly affects them. I remember two form E (17- or 18-year-old) boys, Hlao Mothibi and Makhahlane Phoolo, perusing one of my copies of *Newsweek* magazine and pausing only to marvel at the automobile advertisements. And clearly the white models the girls had seen in product advertisements had affected their sense of beauty: over and over I had girls tell me how much they wished they had my long hair. One girl, Anicia Paanya, even wrote in an essay about how she wanted to go to South Africa to have her nose "removed" so that she could get a "nice, sharp, plastic one." Thus, not only are the wanna-be's relatively willing to accept outside ideas, they also are accessible by and vulnerable to standard advertising techniques.

However, as I've already mentioned, the primary factor which separates the wanna-be's from the urban sophisticates is money. For the purposes of this discussion, the wanna-be's are the ones for whom the cost of kerosene or gas is a real cost. Remember, the wanna-be's are the ones who want to get rich; they don't want to spend extra money on kerosene or gas if they can avoid it. For Palesa Moitse, her financial concerns centered around getting capital together to start a small business; for Anicia Paanya, before she can pay for her longed-for plastic surgery, she has to worry about paying for food, clothes and a place to live. She would be very happy to save the R20 ($6) per month that her family normally spends on kerosene.

The other relevant difference between urban sophisticates and wanna-be's is environmental awareness. The only vegetarian Mosotho I've ever met was a student from Machabeng High School in Maseru. To the typical Mosotho, vegetarianism borders on the absurd. I once tried to explain to 'Me 'Mampho, one of the teachers at Mt. Tabor High School, why my brother is a vegetarian. I patiently explained the difference in production between an acre of land grazed by cattle and an acre of land planted with crops. I assumed that the need to provide more food from a given quantity of land, especially in an over-grazed, quickly eroding country like Lesotho, would seem pressing. 'Me 'Mampho's response, on the contrary, was something like, "Why would anyone want to think

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about things like that?" As I mentioned earlier, concern for the environment comes only after people no longer have to be concerned about their basic needs.

In the (almost) final analysis, then, the group of people who aspire to wealth but who have not yet attained it seem the most appropriate target group for solar box cookers. These people are open to new ideas, are susceptible to advertising and, most importantly, they would be attracted to the savings possible through the use of solar box cookers.

	Rural Women	Urban Sophisticates	Wanna-be's
Financial Need	Yes	No	Yes
Need for an Easier Cooking Method	Yes	No	No
Environmental Concern	No	Yes	No
Openness to New Ideas	No	Yes	Yes
Susceptibility to Advertising	No	Yes	Yes

Looking at the above table, you will notice that I have so far ignored one of the "No's" in the wanna-be column. I talked about their lack of environmental concern, but what about the difficulties involved in the day-to-day use of solar box cookers? Those difficulties were the primary obstacle to the adoption of solar box cookers by the urban sophisticates. What about for the wanna-be's? Unfortunately, the drawbacks involved in using solar box cookers — having to use them outdoors being the main one — do not disappear unless people buy expensive models. That option, however, effectively destroys the savings in fuel costs, savings which made the solar box cookers attractive to the wanna-be's in the first place. The gist, then, is this: the difficulty in using solar box cookers is a major stumbling block in their adoption by wanna-be's. Admittedly, the difficulty is not as pronounced as for the urban sophisticates: Palesa Moitse has less time and less space in which to use a solar box cooker than 'Me 'Mampho does. Nonetheless, 'Me 'Mampho is going to weigh the primary advantage — savings — against the primary disadvantage — difficulty of use — before she buys a solar box cooker.

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In weighing these two options, 'Me 'Mampho will include, consciously or unconsciously, one other consideration, a consideration not listed in the table above. When deciding whether to buy a solar box cooker, many Basotho will ask themselves: what do white people do? I encountered a lot of racism in Lesotho, some against Boers, some against Indians, some against Chinese. But the most common form of racism among the Basotho was against themselves. 'Me 'Mampho, as well as several other people, told me that Basotho are lazy. Moliehi Malephane once tried to convince me to reduce a homework assignment. I told her that I'd had to do a similar assignment when I was in school. "You're different," she replied: you are white. White people, I was repeatedly told, are clever. They are beautiful: that's why Anicia Paanya wants a sharp nose. One student, Palesa Mokotjo, assured me that God loves white people more than blacks. Several students on separate occasions unabashedly told me that they wished they were white. Unfortunately, the lifestyle which most Basotho long for is not that of a wealthy Mosotho; it is the lifestyle, real or imagined, of a wealthy white person. Therefore, many Basotho will ask themselves before buying a solar box cooker, "Is this going to make me seem more advanced?" Will it, like Ntate Mqathazane's shortwave radio, put me closer to my Westernized goals, or will people call me a "khoho oa ntlo" (a home chicken; i.e., a country bumpkin) for having this piece of equipment around my house? Every several months, the students at Mt. Tabor High School watch a video, always an American one. Only when they see solar energy being used on the set of *Commando*, *American Ninja*, or *Rocky IV* will they really want to solar box cookers for themselves.

Conclusion

In the end, unfortunately, the outlook for solar box cooker use in Lesotho is bleak. Several projects have already targeted the people who need solar box cookers the most, the rural women. Those projects have failed for complex reasons involving the resistance of traditional cultures to invasion by foreign innovation. On the other hand, no one expects the wealthy members of Basotho society to adopt solar box cookers, any more than we expect solar box cookers to catch on among middle class Americans. That leaves the majority of Basotho, those people who aspire to wealth but who have not yet attained it. Such people are far more open to new ideas than are the people living in remote areas of the mountains. Furthermore, for many of the members of this wanna-be group, solar

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box cookers represent a real savings in fuel costs. However, those people are going to have to be convinced that the benefits of using solar box cookers outweigh their inconvenience. More importantly, the majority of Basotho will be willing to adopt only those innovations which are perceived as being sufficiently Western. The Basotho tend to model their development after industrialized nations such as the United States. It will be difficult indeed to convince them that our example is not one to be followed.

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