

POVERTY AND DISEASE  
TRANSMISSION: A BEHAVIORAL  
ECONOMICS APPROACH  
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# Behavioral Poverty Traps

Largely missing from conventional analyses of poverty traps are the psychological mechanisms through which the experience of poverty forms the beliefs, values and aspirations of the poor.

Pro-poor policies tend to focus on relaxing external constraints that may perpetuate poverty traps, such as lack of credit or insecure property rights, but internal constraints such as learned helplessness, pessimistic beliefs, an external locus of control, perception of risks (including health risks) are also important.

These internal constraints are endogenous because they adapt to the experience of chronic poverty and persistent marginalization. Over time, however, they could become an independent source of disadvantage for poor persons in their own right.

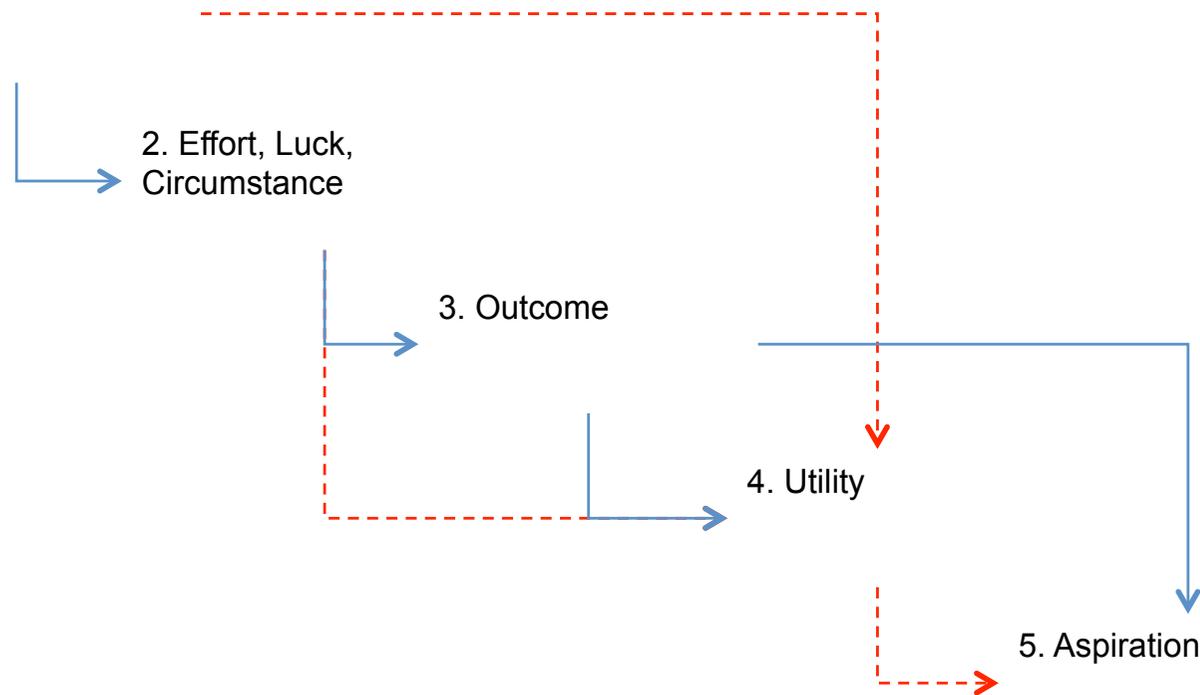
Fieldwork in Kolkata, India: The 'Dream Building' sessions pioneered by the Durbar Foundation to empower a marginalized, stigmatized community of sex workers in Kolkata provides evidence of the potential impact of interventions in raising aspirations.

References: "Decisions with Endogeneous Frames", (with P. Dalton), *Social Choice and Welfare* (2012) 38:585-600; "Poverty and Aspirations Failure", (with P. Dalton and A. Mani), forthcoming, *Economic Journal*; "Characterizing Behavioral Decisions", (with P. Dalton); "Sex Workers, Stigma and Self-Belief: Evidence from a Psychological Training Program in India" (with Smarajit Jana, Anandi Mani, Sandip Mitra, Sanchari Roy)..

# Aspirations Cycle: Dalton, Ghosal and Mani (2014)

- Blue (solid) arrows are positive (+) feedbacks; red (dashed) lines are negative (−) feedbacks (but also, two negatives make a positive).

1. Aspiration



## Poverty, the allocation of attention and mitigation of disease transmission (with Dr. Katie Hampson and Dr. Tiziana Lembo)

- Poverty and disease transmission: an income gradient in disease transmission?
- The experience of poverty and marginalisation impacts on the perceptions and salience of health risks and vulnerability to such risks in poor marginalised communities and in turn, leads to poor health outcomes and perpetuates health inequalities.
- Prevention of health risks in poor marginalized communities: for some diseases (eg. rabies), effective measures to prevent health risks (e.g. via participation in a vaccination campaign) are available at a low cost but community participation tends to be inadequate.
- Treatment, once a disease has been contracted, is often traumatic and requires paying for expensive medication (whose supply tends to be uncertain) as well as incurring considerable travel and other economic and psychological costs.

# An income gradient in disease transmission?

- A key insight from psychology is that the allocation of attention is inherently selective, as cognitive capacity at the individual level is a finite resource [Kahneman 1973].
- Poverty implies low levels of current consumption.
- A poor individual will allocate attention to activities that are related to protecting or even enhancing current income, as the additional payoff (i.e. the marginal utility) from an extra unit of consumption is high.
- The opportunity costs of paying attention to other tasks with less immediate and tangible benefits are greater. These other tasks include participating in disease prevention activities.

# Poverty and collective action for disease transmission

- Assume, initially, that there is a fixed net (expected) benefit to an individual from activities that mitigate disease transmission.
- Then, attention paid to such activities will be greater when the consumption level of an individual is higher, resulting in an income gradient in disease transmission.
- More generally, the (cognitive) opportunity cost of attention allocation will impact on the salience of a specific task and material constraints imposed by poverty on the one hand and an underlying collective action problem relating to the prevention of disease transmission on the other.

# LKAS Research Programme

- Fieldwork: A baseline survey followed by field experiments to evaluate the impact of specific interventions that aim to alter the salience of participation in village level vaccination campaigns. Eg. individuals in the treatment group will also be asked to recall local rabies-related incidents in the recent past (the distress for individuals and family members exposed to rabies) or individuals in the treatment group will be exposed to the experience of a person in a neighbouring village who has been exposed to a rabid dog bite. A record of who participated will be kept. Qualitative methods (e.g. interviews and focus groups) will be used to gain insights into the mechanisms through which the interventions potentially work.
- Theoretical modelling: In an initial model, a decision problem will be studied which involves the allocation of scarce attention between a large number of competing tasks. The model will formalise the idea that the decision maker will allocate attention to those tasks where the perceived expected gain from a unit of extra attention is the highest at a given point in time resulting in a selective allocation of attention. The benefit/cost ratios of different interventions will be quantified by calibrating key model parameters using the data generated by the fieldwork.

# Potential Impact

- Successful disease control and prevention programmes aimed at elimination of canine rabies, and policies on the control of malaria, important livestock diseases (e.g. foot-and-mouth disease), and other zoonoses (e.g. brucellosis, anthrax) could have a beneficial impact on poor, marginalized communities across Asia and Africa.
- Large-scale public health interventions often fail to reach operational and epidemiological targets, suffering from stereotypical challenges of top-down approaches. Rabies, which affects the most impoverished communities, typically marginalised by the health sector, exemplifies these challenges.
- A research agenda focused on the theoretical and empirical work relating to the perceptions and salience of health risks in poor marginalized communities and the role these factors play in perpetuating poor health outcomes and health inequalities could play a role in the design of interventions for a number diseases and across different settings.