Research Paper No. 2005/55

Out of School and (Probably) in Work

Child Labour and Capability Deprivation in India

D. Jayaraj[1] and S. Subramanian[2]

August 2005

Abstract

This paper explores the hypothesis that the phenomenon of child labour is explicable in terms of poverty that compels a household to keep its children out of school and put them to work in the cause of the household's survival. In exploring the link between child labour and poverty in the Indian context, the paper advances the view that the nature of the connection is more readily apprehended if both the variables under study are defined more expansively and inclusively than is customarily the case. Specifically, the suggestion is that it may be realistic to include those children who are conventionally categorized as 'non-workers not attending school' within the count of child labourers. It is also suggested that poverty is meaningfully measured in terms of a multi-dimensional approach to the problem, wherein the aim is to assess generalized capability failure—arising from want of access to elementary infrastructural facilities and essential amenities—with respect to a number of basic human functionings. The core of the paper's argument is presented by means of a simple analytical model of child labour and deprivation, and the issues emerging from it are studied in the Indian context with the support of both primary and secondary data.

Keywords: child labour, generalized deprivation, poverty, 'school-less-ness', survival axiom

JEL classification: J21, J80, I31

Copyright © UNU-WIDER 2005

Madras Institute of Development Studies, Chennai. [1] jayaraj@mids.ac.in [2] Subbu@mids.ac.in

This study has been prepared within the 2005 UNU-WIDER Sabbatical and Visiting Fellows programme, and is published in the project on New Directions in Development Economics.

UNU-WIDER acknowledges the financial contributions to the research programme by the governments of Denmark (Royal Ministry of Foreign Affairs), Finland (Ministry for Foreign Affairs), Norway (Royal Ministry of Foreign Affairs), Sweden (Swedish International Development Cooperation Agency—Sida) and the United Kingdom (Department for International Development).

ISSN 1810-2611 ISBN 92-9190-741-3 (internet version)

Acknowledgements

The authors are greatly indebted to C. Antonyraj for generously giving them access to the primary data collected in the course of his field surveys. R. Dharumaperumal and A. Arivazhagan helped considerably with the maps and the graphics, for which our thanks.

The World Institute for Development Economics Research (WIDER) was established by the United Nations University (UNU) as its first research and training centre and started work in Helsinki, Finland in 1985. The Institute undertakes applied research and policy analysis on structural changes affecting the developing and transitional economies, provides a forum for the advocacy of policies leading to robust, equitable and environmentally sustainable growth, and promotes capacity strengthening and training in the field of economic and social policy making. Work is carried out by staff researchers and visiting scholars in Helsinki and through networks of collaborating scholars and institutions around the world.

www.wider.unu.edu *publications@wider.unu.edu*

UNU World Institute for Development Economics Research (UNU-WIDER)
Katajanokanlaituri 6 B, 00160 Helsinki, Finland

Camera-ready typescript prepared by Adam Swallow at UNU-WIDER

The views expressed in this publication are those of the author(s). Publication does not imply endorsement by the Institute or the United Nations University, nor by the programme/project sponsors, of any of the views expressed.

1 Introduction

It is well established that literacy plays a central role in promoting well-being in a number of spheres of human functioning. It is generally the case that the survival chances of infants, the expectation of life at birth, occupational mobility, and the age at marriage are all increasing functions, and fertility rates and maternal mortality rates are declining functions, of educational attainment. The phenomenon of child labour is perhaps more intimately and directly linked to denial of access to literacy than any other form of deprivation. Indeed, in some ways, child labour is almost simply the other side of the coin of 'school-less-ness', and what we attempt to do in this paper is to relate one particular form of deprivation to generalized capability failure on a number of other fronts of elementary human functioning (see also, in this connection, Jayaraj and Subramanian 2000, and Venkatanarayana 2005).

The objective stated above is simple enough, but its exploration requires a certain reorientation in habitual modes of thought relating to the issues under discussion. Specifically, and first, we adopt in this paper a more expansive definition of child labour than is customarily the case. This is true in two senses. For one, we count work performed in domestic chores (over and above the call of 'routine' training in self-reliance) as 'child labour', which extends considerably beyond the notion that for work to qualify as child labour it must be expended either for a wage or in the production of a commodity or service destined for the market. For two, we count all children who are not in school as child labourers: this does not allow room for truancy, 'idleness' and other non-work related reasons for being out of school. In both senses, our use of the term 'child labour' is distinctly liberal in relation to its conventional usage, and we attempt a qualified defence of our definitional choice at a later stage.

Second, we also adopt a more expanded definition of 'deprivation' or 'capability failure' than is often the case. In particular, there is a tradition of thought in which poverty is almost exclusively interpreted as income shortfall from some uniquely specified 'income poverty line', whereas we interpret the notion—in an admittedly elementary way—in a multi-dimensional sense. This issue, too, is discussed at greater length later in the paper.

Third and finally, our reading of the underlying causative impulse for the phenomenon of child labour is linked to the view, considerably espoused by Kaushik Basu (1999, 2003) but not necessarily shared by many, that households resort to putting children to work for reasons of survival-actuated need rather than as a 'volitional' option exercised for gain, or for reasons otherwise related to parental insensitivity, exploitation, 'benightedness', or unthinking irrationality. Such a view has implications—as we shall see later—for reasonable directions which anti-child-labour policies and stratagems could take.

The gist of the argument we construct in this paper, by employing the above ingredients of an analytical framework, can be communicated by means of a simple allusive example. Consider the case of two households, j and k, which dwell in villages A and B respectively. We shall assume that a unique income poverty line of Rs.20 per household is specified by a central planning agency on the basis of some 'average' requirement of a standardized calorific norm of food consumption. Each household is assumed to

comprise two adults and one child. Village A will be presumed to have a primary healthcare facility (offering free treatment and medicines) while the household in village B needs to travel 10 km which, let us say, costs Rs.5, in order to access the nearest healthcare facility located in a neighbouring village. If household j is exposed to an incidence of morbidity, the cost of treatment will be zero; in a similar situation, the cost to household k would be Rs.5 (the cost of travelling to the healthcare facility in the neighbouring village). Suppose further that each household has an endowed non-labour income of Rs.5, that both adults in each household are employed at a wage of Rs.10 each, and that therefore the total income of each of the two households is Rs.25. Setting aside the capability to live in good health, we shall assume that a more careful accounting of needs, going beyond food requirements, will yield Rs.25 as an income just sufficient for a household to achieve some minimally satisfactory level of functioning in respect of a set of other basic capabilities, access to which is available in identical measure and at identical costs in both villages A and B. Indeed, this income suffices to meet the requirement of healthcare as well, if the reference household is household j living in village A, since the household—as we have seen—has ready access to free treatment at its own primary health centre. When it comes to household k in village B, however, its ability to achieve a decent minimum level of functionings would call for an additional income of Rs.5, which is the cost of transport entailed, in the event of illness, in seeking medical assistance. Under these circumstances, household k may find itself compelled to withdraw its child from school so as to collect firewood, which could entail a saving of Rs.5 on fuel purchased from the market. This example suggests the following considerations.

First, although the child in household k is not working for a wage or in the creation of output exchanged for a price in the market, it would be difficult to deny that she is engaged in work—whence the case for a liberal interpretation of child labour. Second, a multi-dimensional, capability-based approach to deprivation would suggest that household k, but not j, is in poverty, whereas a uni-dimensional, singular, income-based poverty line approach to deprivation would suggest that neither household j nor k is in poverty: yet, one of the households employs child labour and the other does not—whence the case for an expansive interpretation of deprivation which enables one to perceive the link between child labour and generalized capability failure. Third, the example we have employed makes clear that child labour is a reaction to the need for household survival and not a product of parental cruelty: a policy response of banning child labour would be a matter of treating the symptoms rather than the underlying deprivation-related cause of the social pathology of child labour.

The rest of this paper will be devoted to a conceptual and empirical elucidation of the illustrative account furnished above, with reference to the Indian rural context. Section 2 presents a simple, formal, analytical model of child labour and deprivation, which serves as a motivation for the subsequent data-based exercises that follow. Section 3 argues for a construction of child labour which errs on the side of liberalism, and looks at district-wise orders of magnitude of the phenomenon under its 'liberal' interpretation. Section 4 considers district-wise orders of magnitude of a generalized headcount index of deprivation which is a summary of capability failures, with respect to a small set of basic functionings, occasioned by the non-availability of infrastructural facilities. Section 5 examines the spatial distribution of both child labour and generalized deprivation, and advances the view of a link from the latter to the former. Section 6 concludes.

2 A simple model of child labour and deprivation

In order to fix concepts, and to elucidate the notion that the incidence of child labour could be an increasing function of generalized deprivation, we shall here resort to a particularly stark and simple model of the problem. The basic idea is very elementary. Following Basu and Van (1998), we assume that a household's sole motive for the employment of child labour is to ensure the survival of the household: this premise (which, at a later stage, is formalized in terms of a 'survival axiom') is the driving force behind the model presented here. By 'child labour' we mean labour hired out for a wage, employed in the production of a marketable output, as well as labour expended on domestic chores or household tasks. Households are presumed to be endowed with non-negative quantities of non-labour income; and additional income can be produced through the expenditure of some combination of adult and child labour. Each household is presumed to have the objective of achieving a 'subsistence' level of income, which could be thought of as a sort of 'poverty line' in the dimension of income.

At a more basic level, for each household one could postulate a K-vector $\mathbf{f} = (f_1,\ldots,f_K)$, where f_i $(i = 1,\ldots,K)$ is a normative, 'minimally acceptable' level of achievement for the ith of K functionings, which are regarded as being essential for human well-being. **f** can then be interpreted to signify those levels of achievement with respect to a set of specified functionings that are required for the 'survival' of the household. The elements of **f** could relate to achievements in the dimensions of nutrition, clothing, shelter, knowledge, health, and the like. Corresponding to the vector **f**, there is a conformable vector $\mathbf{c} = (c_1,\ldots,c_K)$ of costs associated with the realization of the corresponding functioning-specific achievement levels listed in **f**. For every i, the cost c_i of attaining f_i can be realistically assumed to be a declining function of the *availability of infrastructural facilities*, which will be captured in some composite index I, so that we can write the vector **c** as $\mathbf{c} = (c_1(I),\ldots,c_K(I))$, with $c_i'(I) < 0$ and $c_i''(I) > 0$ for all $i = 1,\ldots,K$. For example, ready access to potable water will obviate the necessity of fetching it over large distances; ready access to cooking fuel will obviate the necessity of scouring for firewood or collecting dung; the availability of transport and communication facilities will reduce the costs and time associated with lengthy travel; easy access to a public health centre and to a school will reduce the costs of morbidity and education respectively; and so on. Given **f** and **c**, it is easy to see that the *income* z necessary for a household to achieve 'survival' is given by $z(I) = \sum_{i=1}^{K} c_i(I)$ with $z'(I) < 0$, and $z''(I) > 0$. Effectively, we are saying that variable income resources may be required in order to attain certain given levels of achievement in the space of functionings—the source of variability residing in the extent of generalized deprivation which obtains, as reflected in the level of infrastructural facilities I that is available. A household aiming to achieve survival might be compelled to employ its children in labour if the level of generalized deprivation (as reflected in the paucity of infrastructural facilities) is so high as to prevent the household, given its endowment of non-labour income, from achieving **f** even if it utilizes all of the adult labour at its disposal for the creation of additional income. The rest of the model is an elaboration of this proposition and of some of the implications following from it.

There are n households, designated by the running index $j = 1,\ldots,n$. The set of all households is N. Each household has an identical endowment of adult labour, T^{A*}, and of child labour, T^{C*}. Household j's endowment of non-labour income is $x_j^e \geq 0$. Any additional income x_j which the household produces requires the inputting of family (i.e.

some combination of adult and child) labour. The production function, assumed identical for all households, is an increasing and strictly concave function of the amount of labour inputted, and is given by $x = x(T^A+T^C)$, with $x(0) = 0$. The total income of household j is given by $y_j = x_j^e + x(T^A_j+T^C_j)$, where T^A_j (respectively, T^C_j) is the amount of adult (respectively, child) labour inputted by household j. z(I), to recall, is the amount of income which a household needs in order to survive, given that I is the level of infrastructural facility available. We let S(I) stand for the set of all households which, given that the level of infrastructural facility available is I, cannot, even if they input all of their endowment of adult labour, achieve a level of income greater than that required for survival, namely, for all I, $S(I) \equiv \{j \in N \mid x_j^e + x(T^{A*}) \leq z(I)\}$. We shall designate by z_0 the quantity z(0), namely, the subsistence level of income required when there are no infrastructural facilities available. To keep things simple, but without losing anything of the essence, we shall assume that when a household has neither any endowed income nor infrastructural facility to access, the total income that can be produced by the family by inputting *all* of its endowed labour will just suffice to achieve the (relevant) level of subsistence income, being $z_0 = x(T^{A*}+T^{C*})$. For all I, and for all $j \in N$, we shall let $s_j(I) \equiv z(I) - (x_j^e + x(T^{A*}))$ stand for *household j's income shortfall*: clearly $s_j(I)$ is non-negative for all $j \in S(I)$, and negative for all $j \in N \backslash S(I)$.

Next, for every household j belonging to the set S, define a critical level of infrastructural facility, I^*_j, as follows:

$$I^*_j \equiv \max\{z^{-1}(x_j^e + x(T^{A*})),0\}$$

where z^{-1} is the inverse function of z. I^*_j, that is, is the smallest (non-negative) level of infrastructural facility required by household j such that, given its non-labour income of x_j^e, the total income achieved by j by inputting only and all of its adult labour, namely the income $(x_j^e + x(T^{A*}))$ just suffices to enable it to survive. We shall designate by I* the value of I^*_j for a household j without any endowment of non-labour income.

Finally, for any level of infrastructural availability I, and for all $j \in S(I)$, define the distinguished level of endowed non-labour income $x_j^{e*}(I)$ as that level of non-labour income such that the total income available to the household by inputting only and all of its endowment of adult labour just suffices to enable it to survive, namely, $x_j^{e*}(I)$ is derived from:

$$z(I) = x_j^{e*}(I) + x(T^{A*}) \quad \text{whence}$$

$$(1)\ x_j^{e*}(I) = z(I) - x(T^{A*}).$$

We now postulate three crucial axioms of household behaviour. The first axiom, called the *survival axiom*, states that the objective of households which fail to achieve subsistence with their levels of endowed income and adult labour is a modest one—that of realizing a subsistence level of income. The second axiom, called the *priority of adult labour axiom*, states that no adult labour will be left unutilized by a household whose income does not exceed the subsistence level. The third axiom, called the *monotonicity of child labour in income-shortfall axiom*, states that the extent of child labour employed by a household is a non-decreasing function of its income shortfall. The axioms, we believe, require no elaboration, and are stated precisely below.

Axiom S (Survival). The objective of every household $j \in S(I)$ is to set $y_j = z(I)$.

Axiom P (Priority of Adult Labour). For all $j \in S(I)$, $T^A_j = T^{A*}$.

Axiom M (Monotonicity of Child Labour in Income Shortfall). For all I, and all $j,k \in N$: $s_j(I) > s_k(I)$, $T^C_j \geq T^C_k$.

The three axioms together lead to the characterization of a child labour supply function which is specified in the Proposition below: the proof is omitted since it can be deduced by inspection.

Proposition. The only child labour supply function which satisfies Axioms S, P and M is given by:

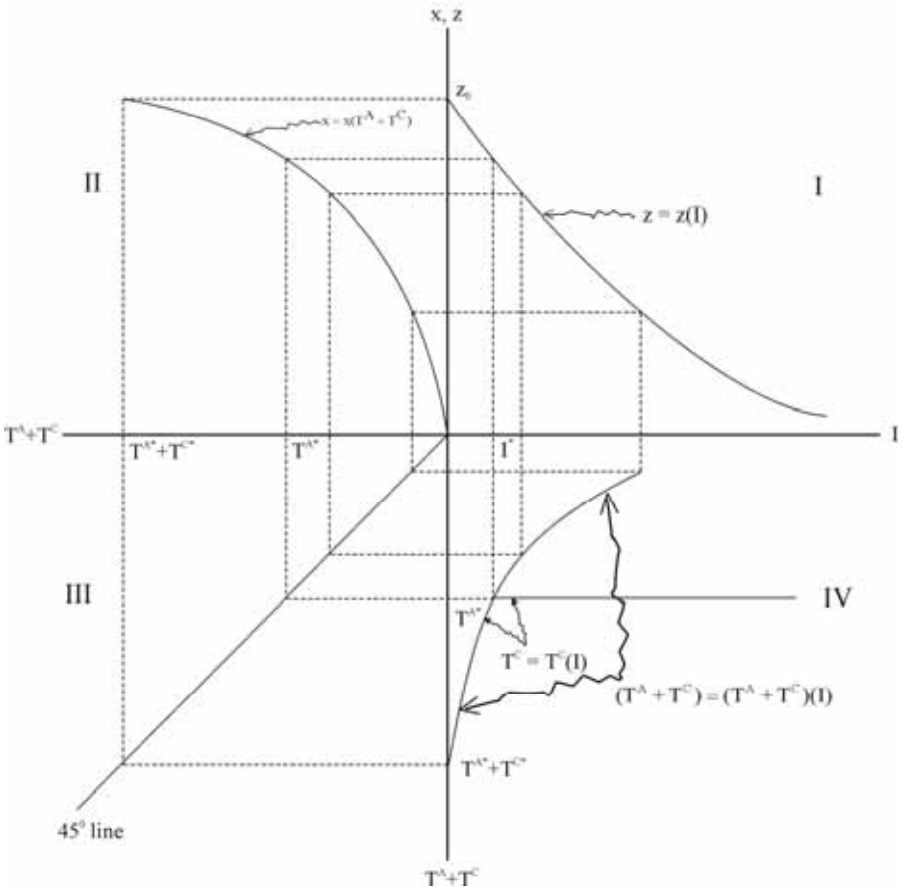
$T^C_j(I) = x^{-1}(z(I) - x^e_j) - T^{A*}$ for all $j \in S(I)$, where x^{-1} is the inverse function of x;

$= 0$ for all $j \in N \backslash S(I)$.

Proof. Straightforward. □

The simple four-quadrant diagram featured in Figure 1 should help to make the derivation of the child labour supply function more transparent. The diagram has been drawn for a household without any endowment of non-labour income. In the first

Figure 1: Deriving a Child-Labour Supply Function for a Household Without any Endowed Non-Labour Income



quadrant, we plot the subsistence requirement function z = z(I); in the second quadrant, we plot the income production function $x = x(T^A+T^C)$; the third quadrant simply has the 45^o-line to enable projection of the (T^A+T^C) quantities on to the fourth quadrant; and in the fourth quadrant, we derive the household's child labour supply as a function of I. The diagram is self-explanatory.

In Figure 2, the mirror-image of the relevant portion of the up-ended fourth quadrant of Figure 1 features the child labour supply function of a household (call it household 1) without any endowment of non-labour income. Also featured is the child labour supply function of a household (call it household 2) with a strictly positive endowment of non-labour income ($x_2^e > 0$): the supply function for household 2 will, clearly, just be a downward displacement of that for household 1. Similar supply functions for every household belonging to the set S(I) can be drawn; and a vertical summation of the household-specific supply functions will yield the aggregate child labour supply function.

Figure 2: Two Typical Household Child Labour Supply Functions

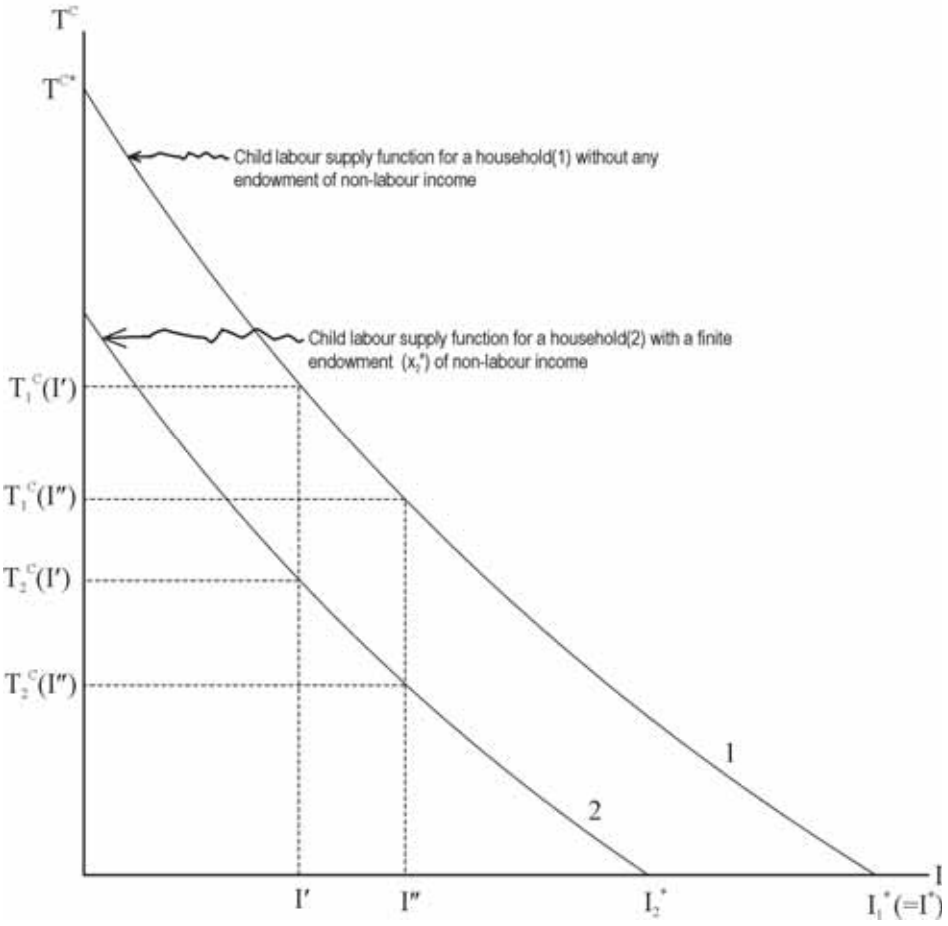


Figure 2 enables us to consider a set of fairly straightforward implications of the model of child labour and generalized deprivation just outlined.

1 Suppose I′ to be the level of infrastructural facility that is available. The child labour supplies of households 1 and 2 are given, respectively, by $T^C_1(I')$ and $T^C_2(I')$ (see Figure 2). Note that these are the levels of child labour required to ensure that each of households 1 and 2 just achieves the subsistence level of income z(I′). Suppose now that there is an outright ban on child labour. What would happen? Household 1's income will drop to $x(T^{A*})$ and that of household 2 would drop to $(x_2^e + x(T^{A*}))$, both of which are less than z(I′) since, by definition, $z(I^*_2) = (x_2^e + x(T^{A*}))$, $I^*_2 > I'$, and z is monotonically declining in I. That is to say, both households will be pushed to sub-subsistence levels of income—which is hardly a desirable outcome. This, precisely, is the point made by Basu and Van (1998) regarding the unwelcome consequence of a drastic recommendation—however well-motivated by moral considerations—in favour of a blanket ban on child labour without any other supportive measures advanced on behalf of the affected households.

2 If eliminating child labour through the route of an outright ban is undesirable for the reason just discussed, what other option is available? A serious engagement with the problem, assuming the truth of Axiom S, could dictate a solution like the following one. Recall from (1) that the level of endowed non-labour income which each of households 1 and 2 would need for survival, given that the level of infrastructural availability is I′, is given by:

$$x_1^{e*}(I') = x_2^{e*}(I') = z(I') - x(T^{A*}).$$

A 'survival' subsidy schedule $\{s_j^*\}_{j\in\{1,2\}}$ for the two households would now be given by: $s_1^* = x_1^{e*}(I') - x_1^e = z(I') - x(T^{A*})$ (since $x_1^e = 0$ *ex hypothesi*); and $s_2^* = x_2^{e*}(I') - x_2^e = z(I') - x(T^{A*}) - x_2^e$. With the subsidy schedule $\{s_1^*, s_2^*\}$, child labour will be eliminated: there would be no need for a ban.

3 However, a difficulty with the above solution is that in order to implement the subsidy schedule $\{s_1^*, s_2^*\}$, the planner would require knowledge of the two households' levels of endowed non-labour income: a problem of targeting. Additionally, the subsidies might be required to be repeatedly administered.

4 A more lasting and 'once-and-for-all' solution would be to increase the level of infrastructural facility available by a 'sufficiently large' quantum: the idea is to reduce generalized deprivation, and through this route reduce the amount of income required in order to achieve a set of minimally acceptable levels of functioning. Specifically, and assuming only that the planner has knowledge of the distribution of endowed incomes (without knowledge of who has what income), it would suffice to increase the level of infrastructural facility from I′ to $\max\{I^*_j\}_{j\in S(I)}$ (which, in the context of Figure 2, is simply I^*_1 (≡ I*)). Indeed, even if the distribution of the x_j^e were not known, child labour can be eliminated by raising the level of infrastructural availability to I* which, to recall, is that level of I for which a household with zero endowed income can achieve survival without resorting to the employment of child labour. Hence the importance of non-income means of alleviating deprivation and inhibiting the incidence of child labour.

5 Solutions of the type outlined in paragraphs 2 and 4 above are, of course, ones which entail costs, and call for financing from the state's budget or through specific redistributive taxation. A properly 'ethical' stance toward child labour should therefore go beyond calls for an outright ban, and embrace a preparedness for bearing the costs of a more humane approach to eliminating the exigencies which give rise to the phenomenon of child labour in the first place. By analogy, a costly cure for a disease is as little reason for killing off the patient as a costly cure for child labour is a reason for banning it and thereby pushing the victim below subsistence levels of income.

6 Finally, and returning to Figure 2, notice that if the level of infrastructural facility is raised from I′ to I″, then household 1's supply of child labour will drop from $T^C_1(I')$ to $T^C_1(I'')$, while that of household 2 will drop from $T^C_2(I')$ to $T^C_2(I'')$. In short, the total incidence of child labour associated with the I′ regime will be greater than that associated with the I″ regime. Thus, if deprivation is assessed in the space of infrastructural facility, Figure 1 points to the expected positive relationship between child labour and deprivation. However, such a relationship does not necessarily hold if deprivation is measured only in the space of incomes, and with reference to the customary postulation of a *unique* income poverty line, z. In particular, suppose z is pitched in such a way that $z(I'') < z < z(I')$. Then it is conceivable that the proportion of households deemed to be in 'poverty' with respect to a poverty line of z is the same in both regimes I′ and I″, because if the 'true' poverty lines in the two regimes are z(I′) and z(I″) respectively, then one could end up underestimating the incidence of poverty in regime I′ and overestimating it in regime I″ with respect to the common standard z. Child labour and the headcount ratio of poverty may not yield a positive correlation; and the preceding discussion is suggestive of why empirical exercises do not always yield the expected relationship between the incidence of child labour and the incidence of income poverty.

The simple model sketched out in this section has been motivated by a modest ambition—that of providing an analytical basis for the possible truth of the following propositions: that child labour is frequently a consequence of compulsion arising from poverty rather than a consequence of exercising a preferential choice in the matter; that outright bans on child labour are often of the type of solutions to morbidity which dispose of the patient along with the illness; that more humane and economically rational methods of eliminating child labour might call for programmes of income-subsidisation or investments in infrastructural improvements; and that there are distinct advantages to comprehending the notions of both deprivation and child labour by expanding their meanings beyond the conventionally narrow definitions to which they are subjected. These theoretical considerations would, clearly, benefit from empirical investigation and substantiation. The next three sections are devoted to such an exercise.

3 Towards an expanded definition of child labour

Identification

Official data-generating agencies in India, such as the Census and the National Sample Survey Organization (NSSO) resort to a somewhat conservative criterion for identifying child labour. Specifically, a child is counted as a 'worker' only if the labour s/he engages in is remunerated by a wage or enters into the production of goods or services of which at least some part is marketed. The identifying criterion here is therefore linked to the notion of a wage/price return to labour. An alternative criterion of identification relates to the *nature* of work engaged in by a child, with the description of 'child labour' being restricted to children who perform 'severe' or 'onerous' forms of work. Under these approaches to identification, substantial numbers of children could find themselves categorized as 'non-workers not attending school' (NWNAS): this is something of a definitional limbo whose denizens have been referred to by Chaudhri (1997a, 1997b) as 'nowhere children'.

Among the set of 'nowhere children' are those engaged in domestic drudgery. The fact that the work performed by these children is unpaid work does not seem to be a good reason for failing to count it as work. The fact that children can, and do, engage in harsher forms of labour than what is entailed in domestic chores is a reason for counting the latter form of work as relatively less onerous work, but not one for certifying it as non-work. These are claims against a 'restrictive' approach to identification. At the same time, claims in favour of a 'liberal' approach could also be overstated, as has been observed by Lieten (2004) and by Lieten, Srivastava and Thorat (2004):

> Child labour in this [liberal] approach includes the category of intolerable child labour (working most of the day in dismal circumstances), child labour for a limited period in tolerable conditions, child labour as part of a process of socialization, and the numerous nowhere children, i.e. children who are not going to school but on the other hand are not active as 'workers' except possibly for some services in the household. Lieten, Srivastava and Thorat (2004: 19)

The problem for identification is that those categorized as NWNAS include some children who could be legitimately counted as workers, and also some who could be legitimately counted as non-workers. A restrictive approach to identification would underestimate the size of the set of child labourers, while a liberal approach would overestimate this size. If information were available on the precise time- and effort-disposition of NWNAS children, then one could unscramble the categories of workers and non-workers in this set. It is precisely because such information is in general not available at the macro level that one is forced to choose between the 'restrictive' and the 'liberal' approaches to identification.

Confronted with a binary choice, our own inclination would be to favour the 'liberal' approach. This is so for at least four reasons. The first is related to the basic value judgment that of the two errors of identification reflected in 'including those who do not qualify' and 'excluding those who do qualify'; the latter error is the graver. In this view, if one has to err, it is better to err on the side of liberalism.

Second, 'school-less-ness', whether or not it is accompanied by child labour, is very likely a reflection of capability failure and deprivation. In such a circumstance, school-less-ness is more likely to be accompanied by work than by idleness. If school is unaffordable for a child, then there is a distinct probability that the underlying condition of poverty which keeps the child at home would also be a cause for the child to work in the interest of the household's survival. Table 1 indicates that the incidence of generalized deprivation in India—as reflected in the want of access to proximately located sources of drinking water, to electricity for lighting, and to a relatively clean and efficient fuel for cooking—is greater in the rural than in the urban areas, and likewise greater for the under-privileged Scheduled Castes and Tribes (SCST) than for better-placed caste groups. The proportion of NWNAS children is also larger for these relatively disadvantaged (rural and SCST) population groups. It would be surprising if these facts were unrelated to the possibility that children out of school are also contributing to their households' survival by fetching water, gathering firewood and helping with the cooking.

Table 1 Access to basic amenities by households classified by nature of residence and caste: India 2001

Classification of households	Number of households	Number of households for which drinking water source is located away from the house	Number of households which use electricity for lighting	Number of households which use liquefied petroleum gas for cooking	Number of households which depend on firewood or cow dung cake or crop residue as fuel for cooking	Number of households which have access to a tap as source of drinking water
All areas	191963935	32048396	107209054	33596798	121973387	70448827
		(16.70)	(55.85)	(17.50)	(63.54)	(36.70)
Rural	138271559	27012080	60180685	7845161	124444759	33583755
		(19.54)	(43.52)	(5.67)	(90.00)	(24.29)
Urban	53692376	5036316	47028369	25751637	14411628	36865072
		(9.38)	(87.59)	(47.96)	(26.84)	(68.66)
SCST All areas	53965081	12128690	22495508	3821034	45769139	15150576
		(22.48)	(41.69)	(7.08)	(84.81)	(28.08)
SCST Rural	43827993	10575964	14632074	878750	41612737	8766352
		(24.13)	(33.39)	(2.01)	(94.95)	(20.00)
SCST Urban	10137088	1552726	7863434	2942284	4156402	6384224
		(15.32)	(77.57)	(29.02)	(41.00)	(62.98)

Source: Census of India 2001 (2003a, 2003b, 2003c).

Third, the fact that different forms of child labour, characterized by different orders of severity, are undifferentiated should not really matter for the *identification* exercise. There is here an analogy with the problems of measuring poverty, and under-nourishment. In the debate on identifying under-nourishment through the specification of a cut-off level of calorific adequacy, we find, for instance, an expression of the following sentiment (Seckler 1982: 135): 'Gross overestimations of the incidence of malnutrition in the world have simply provided aid and comfort to the advocates of Triage, Food as a Weapon, and other forms of barbarism.' The concern here is that by pitching the norm of nutritional adequacy high, a headcount-minimizing pattern of food allocation could leave the really badly undernourished out of the ambit of assistance. In a similar way, a liberal approach to identifying child labour could, in a headcount-minimizing strategy, cause remedial measures to be confined to the relatively 'easy' or less severe cases of child labour. While the underlying concern is a legitimate one, there is also a case for differentiating the identification and aggregation exercises, as has been pointed out by Dasgupta and Ray (1990). That is to say, a 'transfer-preferring' poverty index, unlike the headcount index, would accord priority to the worst off of the poor or undernourished, and the debate, properly speaking, should be centered on the aggregation problem (choice of index) rather than on the identification problem (choice of poverty line). Similarly, in the context of child labour, the issue of prioritization of remedial measures according to the severity of the form of child labour should be divorced from the identification question. An aggregate measure of child labour would, for instance, certainly benefit from a differentially weighted aggregation of labour-types of different degrees of severity. But this is a problem in aggregation, not identification.

Fourth, the liberal approach to identification would merit support if there were evidence to suggest that the composition of NWNAS children is more heavily weighted in favour of 'workers' than of 'idlers'. Lieten (2004: 53) observes that the notion of nowhere children 'should have marked the start of empirical research as to what these children were really doing, or whether they were just "deprived children".' Unfortunately, there has not been a great deal of work done on ascertaining the activity status of NWNAS children. An exception is to be found in the unpublished Ph.D dissertation of Antonyraj (2003), who follows some very valuable leads provided by Rodgers and Standing (1981). His work, though based on an extremely small sample, is nevertheless suggestive; and when combined with a measure of practical judgment on the matter, disposes one to the liberal rather than restrictive approach to identification. The salient features of Antonyraj's survey are reviewed in what follows.

Activity status of 'NWNAS' children: results of a field survey in Tamil Nadu

Antonyraj's (2003) survey was done in two villages, Achamangalam and Kadirampatti, located in Tirupattur taluk of Vellore district in the southern Indian state of Tamil Nadu. The survey was conducted in two stages in 2001. In the first stage, a census house-listing schedule, seeking household-level information on demographic characteristics and the labour market participation of all (adult and child) members of each household, was canvassed in both villages. The respondent—who was generally the head of the household—was asked to classify each child in the household as student, worker, or 'idle' (i.e. NWNAS). The classification was based on the respondent's perception of how the child had spent her/his time over the major part of the preceding year. Table 2 provides information, for each and both of the villages, on the classification (as reported) of children into worker, student, and NWNAS categories.

A ‘restrictive’ definition of child labour would count only those designated as ‘workers’ in Table 2, while a ‘liberal’ definition would count both ‘workers’ and children classified as ‘NWNAS’. Taking both villages together, it can be seen that the proportion of NWNAS children exceeds the proportion of ‘workers’ for both boys and girls. The male-female differential (6.5 per cent for boys and 6.2 per cent for girls) is negligible in the ‘worker’ category, while in the NWNAS category, the proportion for girls (17.8 per cent) is rather higher than for boys (14.4 per cent). The restrictive definition of child labour (6.2 per cent for girls and 6.5 per cent for boys) reverses the ranking by gender obtained under the liberal definition (24.0 per cent for girls and 20.9 per cent for boys).

Table 2 The distribution of children (5-14 years) classified by their main activity in the villages of Achamangalam and Kadirampatti, 2001

Total children		Studying		Working		NWNAS	
Male	Female	Male	Female	Male	Female	Male	Female
Achamangalam village							
476	406	371	303	34	28	71	75
(100)	(100)	(77.9)	(74.6)	(7.2)	(6.9)	(14.9)	(18.5)
Kadirampatti village							
321	326	259	254	18	17	44	55
(100)	(100)	(80.7)	(77.9)	(5.6)	(5.2)	(13.7)	(16.9)
Both villages							
797	732	630	557	52	45	115	130
(100)	(100)	(79.1)	(76.1)	(6.5)	(6.2)	(14.4)	(17.8)

Source: Primary data from Antonyraj’s Census schedule canvassed for his survey of 2001.

Note: Figures in parenthesis are per cent of total children 5-14 years of relevant gender.

Both the restrictive and the liberal work participation rates are higher in Achamangalam than in Kadirampatti, for both sexes. Kadirampatti’s superior record probably has to do with the fact that agriculture is relatively more viable in this village. In Achamangalam, agriculture has been adversely affected by the construction of a reservoir on the stream supplying water to the village’s tanks, and household industries (*beedi* and incense-sticks) have emerged as low-earning alternative sources of employment. Also, agricultural labour is better organized in Kadirampatti, and attendant changes in the wage payment system have resulted in higher earnings for agricultural labourers in the village.

Apart from earnings/income, access to infrastructural facilities—in particular, schools and potable water—could be an important determinant of the size of the NWNAS category. Effective access to a facility by a household in a revenue village depends both

on the availability of the facility within the village and the distance of the household from the facility. Achamangalam's 844 households are distributed across 12 clusters in two hamlets. The main hamlet, with 251 households, has a bus stop and a middle school. The 593 households living in the other 11 clusters have to access these facilities located in the main hamlet, and this is not easy. For instance, a large number of children have to walk a distance ranging from 2 km to 4 km to get to school, while a majority of the population has to walk a distance of 1–3 km to reach the bus stop. All clusters do not have drinking water taps—making for poor access to basic amenities in Achamangalam village. Kadirampatti presents a better picture in this respect. Its 580 households are distributed in two hamlets each of which has a primary school, and also a bus route through it. Children from this village have to cover a distance of 2–3 km in order to get to a relatively higher-quality school in a nearby semi-urban centre, whereas children in Achamangalam have to walk 2–4 km even to reach the school within the village. Most households in Kadirampatti have access to a tap installed fairly close to their residence. The difference in effective access to basic amenities in the two villages could explain the difference in the respective sizes of the NWNAS category. This could also have a bearing on the activity patterns of the NWNAS category in the two villages, to which we now turn.

The second stage of the village surveys entailed collection of data on the activities of a sample of NWNAS children in the two villages. To this end, 29 households—16 in Achamangalam and 13 in Kadirampatti—were selected, each with at least one NWNAS child, and accounting for 30 NWNAS children in all. Data on the activities of these children and their parents were collected for 30 days in the months of February and March 2001. No questionnaire was used for the survey. A diary was maintained by each household, and the activities engaged in, and the times spent on each of these, by each member of the household, were recorded in accordance with each member's reporting. For each day the activities were recorded over a 12-hour period, from 6 am to 6 pm.

An aggregated version of Antonyraj's (2003) activity analysis can be obtained by grouping the activities into five categories:

i) *Self-employment activities*—which include activities such as working on one's own farm, conducting one's own business, tailoring at home, and so on;

ii) *Wage-employment activities*—which include activities such as construction work, road building, making incense sticks, agricultural labour, and so on, in exchange for a wage;

iii) *Domestic tasks*—which include washing, cleaning, cooking, child-care, fetching drinking water, shopping, making purchases at the fair-price shop, going to the rice mill, splitting wood, and so on;

iv) *Non-domestic, non-wage activities*—which include cattle-rearing, gathering of fuel, fodder and forest produce, guarding the field from birds and animals, kitchen gardening, marketing and post-harvest processing, making payments at or transacting with the electricity board and other government offices, working without payment on the family farm or other family enterprise, and so on;

v) *Other activities*—activities which are in the nature of socialization such as hospital visiting, calling on friends and relatives, attending marriages and funerals, work related to celebration of village festivals, attending village meetings, playing, and so on.

The first two categories of activity would be construed as 'work' under the restrictive approach to identification adopted by data-generating agencies. Failing to include activities in the fifth category under the description of 'work' is reasonable, but a similar failure is definitely debatable when it comes to activities in the third and fourth categories, which, after all, require the expenditure of effort in the cause of creating household income. Table 3 presents data on the activity pattern (average hours per day spent on each category of activities) by each of the 30 children constituting the survey sample.

Table 3 Data on the average number of hours spent on different groups of activities

Sex of the children	Number of children	(i) Self-employment	(ii) Wage employment	(iii) Domestic activities	(iv) Non-domestic non-wage	(v) Other activities
Achamangalam village						
Girls	9	0.11	1.48	3.92	1.08	5.41
Boys	8	0.52	4.76	0.61	1.12	4.99
All	17	0.30	3.04	2.35	1.10	5.21
Kadirampatti village						
Girls	4	0.00	3.72	2.88	1.48	3.93
Boys	9	0.24	5.58	0.60	1.12	4.47
All	13	0.17	4.99	1.32	1.23	4.29
Both villages						
Girls	13	0.08	2.17	3.60	1.21	4.95
Boys	17	0.38	5.19	0.60	1.12	4.72
All	30	0.25	3.88	1.91	1.15	4.82

Source: Based on numbers provided by Antonyraj (2003: table 8.5).

The numbers in Table 3 suggest the following. First, girls in Achamangalam spent on average about an hour more than girls in Kadirampatti on domestic activities such as fetching drinking water, washing clothes, and cleaning utensils. This is not surprising, considering that effective access to basic amenities, including water from a tap, is more restricted in Achamangalam than in Kadirampatti: the brunt of the burden arising from such restricted access seems to have been borne by girls—there is little difference in the time spent by boys on domestic activities in the two villages (0.60 hours in Achamangalam and 0.61 hours in Kadirampatti). Second, in both villages, boys spent more time than girls on wage employment, and the time thus spent, for both sexes, is higher in Kadirampatti than in Achamangalam. As we have seen earlier, a few household industries in Achamangalam have emerged as a source of livelihood, but agriculture, which remains the mainstay, has been performing relatively poorly, so that those seeking employment in this sector are less successful than their Kadirampatti counterparts in securing it on a regular basis. Third, both boys and girls can be seen to have spent a little more than an hour every day on activities such as cattle rearing, fuel and fodder collection, kitchen gardening, and the like, which contribute to the creation of products and services utilized in household consumption. This suggests that activities such as domestic chores, and non-domestic and non-wage tasks, performed in the cause of household subsistence, are not negligible. In particular, and taking both villages together, the time spent on activities in the third and fourth categories, as a proportion of the total time spent on activities in all the first four categories, works out to 68 per cent

for girls, about 24 per cent for boys, and 43 per cent for all children. It would appear from these figures that NWNAS children are—on the whole—neither idle nor merely rendering 'some services'.

The sample survey data allow us to consider alternative approaches to the identification of child labour in a graduated sequence of 'liberalism'. The least liberal approaches are the ones adopted by the official data-generating agencies. The spirit of such a 'restrictive' approach can be captured by counting as 'work' only those activities which fall in the first two categories—self- and wage-employment activities. A less restrictive approach would include activities in the third category of 'domestic tasks'. An even less restrictive approach would expand the domain of 'work' to include activities in the fourth category of 'non-wage, non-domestic' tasks. A completely liberal approach would admit, additionally, the fifth category of 'other activities'. A child who has spent at least six hours a day—and this is a fairly stringent requirement—on those categories of activity considered relevant for counting as 'work' could be considered a 'worker'. Thus,

- a child who has spent at least six hours a day on activities falling in the first two categories will be called a worker according to the *restrictive definition*;
- a child who has spent at least six hours a day on activities falling in the first three categories will be called a worker according to the *weak restrictive definition*;
- a child who has spent at least six hours a day on activities falling in the first four categories will be called a worker according to the *weak liberal definition*;
- and a child who has spent at least six hours a day on activities falling in the first five categories will be called a worker according to the *liberal definition*.

If the count of workers under the weak liberal definition is not too far from the count under the liberal definition, then the liberal definition may not be too inaccurate an approximation of the weak liberal definition. To examine this, the sample survey data can be used to ascertain what proportion of NWNAS children would qualify to count as workers under each of the definitions considered. Table 4 provides the relevant data.

The work participation rate (or proportion of the population in work) of NWNAS children for the two villages together, under of each of the five approaches to identification considered, is available in the last row of Table 4. It can be seen that nearly a quarter of the NWNAS children (and two-fifths of NWNAS boys) would qualify to be counted as workers even under the restrictive definition. The count climbs up to almost a half under the weakly restrictive definition, and to around 87 per cent under the weak liberal (and in our view acceptable) definition. Indeed, if the time criterion of eligibility for 'worker' status were reduced from six to four hours, then it turns out that the work participation rate of NWNAS children under the weak liberal definition is as high as 96.7 per cent.

Table 4 Number of 'workers' among NWNAS children and their work participation rates in the survey villages

Sex of the children	Number of children	Workers by restrictive definition (i-ii)	Workers by weak restrictive definition (i-iii)	Workers by weak liberal definition (i-iv)	Workers by liberal definition (i-v)
			Achamangalam village		
Girls	9	0	0	7	9
		(0.0)	(0.0)	(77.8)	(100)
Boys	8	2	6	7	8
		(25.0)	(75.0)	(87.5)	(100)
All	17	2	6	14	17
		(11.8)	(35.3)	(83.4)	(100)
			Kadirampatti village		
Girls	4	0	1	4	4
		(0.0)	(25.0)	(100)	(100)
Boys	9	5	7	8	9
		(55.6)	(77.8)	(88.9)	(100)
All	13	5	6	14	17
		(38.5)	(61.5)	(92.3)	(100)
			Both villages		
Girls	13	0	1	11	13
		(0.0)	(7.7)	(84.6)	(100)
Boys	17	7	13	15	17
		(41.2)	(76.5)	(88.2)	(100)
All	30	7	14	26	30
		(23.3)	(46.7)	(86.7)	(100)

Source: See Table 3

It is pertinent to ask how these children came to be classified as NWNAS in the first instance. One can think of three plausible reasons. First, it is possible that the respondent was unable to recollect precisely what the children were doing over a major part of the year (what one might call a 'failure of recall'); second, it is possible that though the children were engaged in productive work, the income they received was too meagre to permit recognition of the fact that they were indeed employed (what one might call a 'failure of perception'); and third, it is possible that the respondent, who was often the head of the household, did not wish to concede the role of a breadwinner to his children (what one might call a 'failure of acknowledgment'). The three failures together add up to what one might call, simply, a 'response failure'. What is striking about the numbers in Table 4 is that the response failure could be of a significantly large order, and is not improbably a feature of the results reported in large-scale surveys like the Population Census surveys or the sample surveys conducted by the NSSO. And if this is so, then the case in favour of a liberal approach to identification gains in strength.

This is corroborated by some evidence available at the macro level. Hirway (1999) has analyzed the data available in the *Preliminary Time Use Survey of India* conducted by the Central Statistical Organization (CSO) in six states (Madhya Pradesh, Gujarat, Meghalaya, Tamil Nadu, Haryana and Orissa). The analysis suggests that 33.1 per cent of children in the age group 6–14 participate in the System of National Accounts Activities which include primary production activities like crop farming, animal husbandry, fishing, forestry, processing and storage, and mining and quarrying; secondary sector activities like construction and manufacturing; and activities like trade, business and services (on this see also Narasimhan and Pandey 1999). On average, a child spends 2.02 hours per day on these activities. It is our guess that if the average were to be calculated for participating children (rather than for all children) in the 6–14 age-group, then the daily average would be closer to the estimate of 4.13 hours in self- and wage-employment activities yielded by Antonyraj's village surveys. Further, Hirway's work suggests that the proportion of children in the age-group 6–14 reported to be not attending school is around 33 per cent—which is also the proportion of children in this age group participating in the System of National Accounts activities; further, 22.1 per cent of children in the age-group 6–9 participate in productive activities. All of this suggests that children in India begin to contribute to family income at an early age, and also that liberal estimates of child labour in the country may not be wide off the mark. If this is a biased judgment, at least the bias is out in the open!

Aggregation

The extent of child labour will be taken to be represented by a simple headcount ratio: the ratio of the number of workers, as yielded by the liberal approach to identification, in the age-group 5-14, to the number of children in this age group. In turn, the number of workers under the liberal definition is simply the number of children (in the 5-14 age group) not attending school. Admittedly, this is a crude aggregate index. A slightly more refined approach to aggregation, hinted at earlier, may be along the following lines. Let H_R be the headcount ratio of work participation under the restrictive approach to identification, and H_L the headcount ratio under the liberal approach. If one believes that work counted under the restrictive approach is at least as onerous as work counted under the liberal approach, then one could have a weighted aggregate index of the extent of child labour given by $H(\alpha) = (1/\alpha)[\alpha H_R + (1 - \alpha)(H_L - H_R)]$, with $1 \geq \alpha \geq ½$. If NWNAS children are regarded as non-workers, then we should set $\alpha = 1$, in which case the aggregate index would be given by $H(1) = H_R$: only the restrictive count would prevail. In line with the earlier discussion, we are disinclined to accept this judgment. Arguably, setting $\alpha = ½$, as we have done, veers too far on the side of the liberal count. On the basis of aggregate data, however, we are too little informed to be able to quantify a value of $\alpha > ½$ which we can be confident is any less arbitrary than setting α at one-half. Effectively, then, the choice is narrowed down to the binary one of $\alpha = 1$ and $\alpha = ½$; and since we reject the former, we are constrained to accept the latter.

The spatial distribution of child labour in rural India

Employing data from the *Population Census of India 1991*, we have computed the 'liberal' headcount ratio H_L of child labour for the rural areas of every district of the fifteen major states of the Indian Union, and also aggregated the district-level data to obtain a state-wise picture. For (the rural areas of) the country as a whole, the value of

H_L is 54.90 per cent: over a half of the children in the 5-14 age group in rural India are out of school, and a large proportion of them are probably in work too. This is a reflection of grave deprivation among the children of the country. The high average level of deprivation is also accompanied by considerable dispersion: H_L varies from a low of 9.8 per cent in Ernakulam district of Kerala in the south to a high of 84.6 per cent in Kishanganj district of Bihar in the north, and the coefficient of variation in the inter-district distribution of the H_L is 28.8 per cent.

A pronounced 'north-south' divide in well-being achievements is a widely recognized feature of India's social sector development. We discern a similar dichotomization in the case of child labour, as becomes apparent from a comparison of child labour ratios in the states which are north of the Vindhyas (the mountain range cutting across central India) with those in the states which are south of the Vindhyas. More specifically, we consider the differential distribution of districts by prevalence of child labour in the north and the south. To this end, we classify the districts into five groups according to the prevalence of child labour—'very low (VL)', 'low (L)', 'medium (M)', 'high (H)' and 'very high (VH)'. The VL districts are those with H_L ratios in the interval [0.0980, 0.2476], and the remaining groups are described by H_L ratios in the intervals (0.2476, 0.3971], (0.3971, 0.5466], (0.5466, 0.6961], and (0.6961, 0.8460]. The size-classification reflects an equal five-way division of the difference between the maximum ($*H_L$ = 0.8460) and minimum ($*H_L$ = 0.0908) values in the inter-district distribution of the H_L: so, if UL_k is the upper limit of the kth size-class interval (with the classes arranged in descending order), then $UL_1 = *H_L + (*H_L - *H_L)/5$, while $UL_k = UL_{k-1} + (*H_L - *H_L)/5$ for k = 2,3,4,5. Table 5 furnishes information on the number and proportion of districts in each group, separately for states south of the Vindhyas (the upper panel) and for states north of the Vindhyas (the lower panel).

Table 5 presents a clear picture of north-south polarization. The H and VH categories of districts account for nearly 64 per cent of all districts in the north, and for only 20 per cent of all districts in the south. In the southern state of Kerala, every district belongs to the VL category. On aggregate over half of all districts in the country are accounted for by the H category, while in the northern state of Bihar, every district belongs to either the H or the VH category. In 197 out of a total of 381 districts, the value of H_L is in excess of 69 per cent. By contrast, just around 22 per cent of all districts are accounted for by the L and VL categories.

A grosser picture is available through a two-way classification of the districts into 'large H_L'and 'small H_L' districts—the former being the set of districts with H_L values in excess of 50 per cent (which is close to the national average), and the latter being the set of districts with H_L values in deficit of the specified cutoff level. Map 1, which depicts the distribution of the 'large H_L'and 'small H_L' districts across the country, is a useful visual aid to an appreciation of the north-south divide.

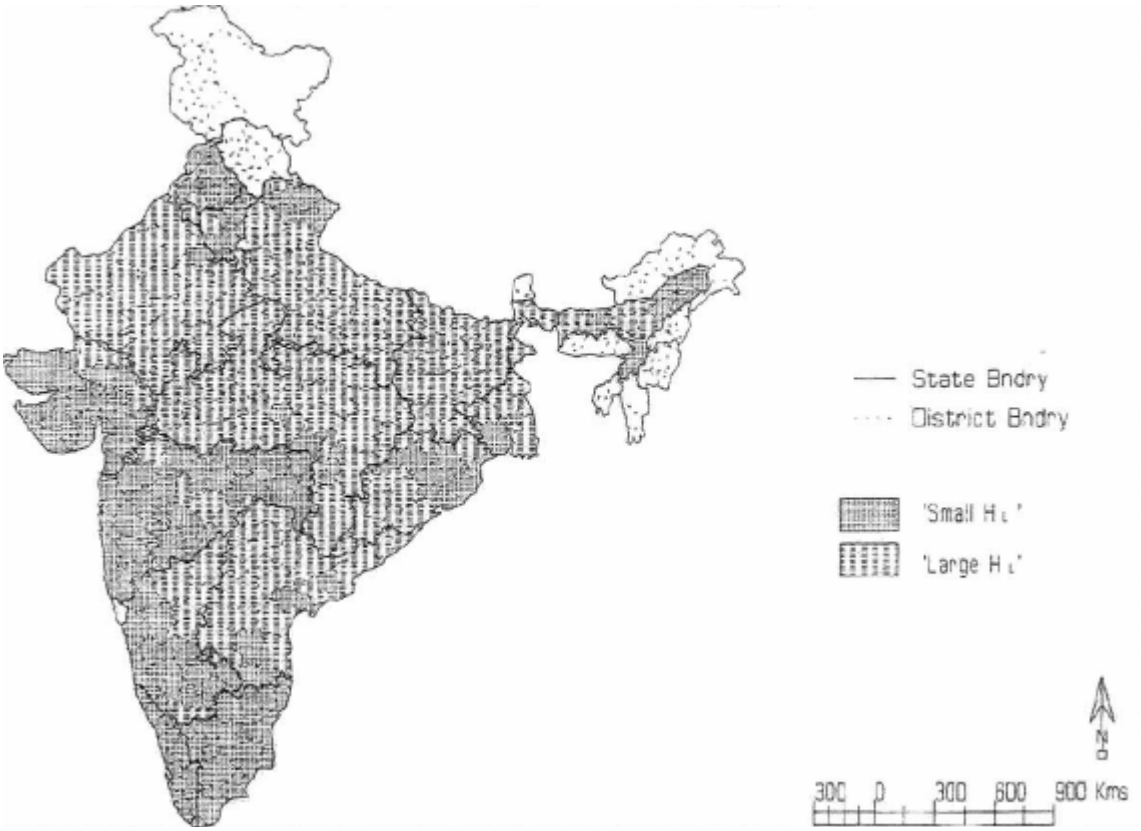
Table 5 State-wise distribution of districts classified by the level of 'liberal' work participation rates

State	Levels of child labour use					Total
	Very low	Low	Medium	High	Very high	
States south of the Vindhyas						
Andhra Pradesh	0	0	6	15	1	22
	(0.00)	(0.00)	(27.27)	(68.18)	(4.55)	(100.00)
Karnataka	0	5	11	3	1	20
	(0.00)	(25.00)	(55.00)	(15.00)	(5.00)	(100.00)
Kerala	14	0	0	0	0	14
	(100.00)	(0.00)	(0.00)	(0.00)	(0.00)	(100.00)
Maharastra	1	15	12	1	0	29
	(3.45)	(51.72)	(41.38)	(3.45)	(0.00)	(100.00)
Tamil Nadu	2	17	1	0	0	20
	(10.00)	(85.00)	(5.00)	(0.00)	(0.00)	(100.00)
Sub-total	17	37	30	19	2	105
	(16.19)	(35.24)	(28.57)	(18.10)	(1.90)	(100.00)
States north of the Vindhyas						
Assam	0	0	12	11	0	23
	(0.00)	(0.00)	(52.17)	(47.83)	(0.00)	(100.00)
Bihar	0	0	0	26	16	42
	(0.00)	(0.00)	(0.00)	(61.90)	(38.10)	(100.00)
Gujarat	0	10	8	1	0	19
	(0.00)	(52.63)	(42.11)	(5.26)	(0.00)	(100.00)
Haryana	0	8	8	0	0	16
	(0.00)	(50.00)	(50.00)	(0.00)	(0.00)	(100.00)
Madhya Pradesh	0	0	16	25	4	45
	(0.00)	(0.00)	(35.56)	(55.56)	(8.88)	(100.00)
Orissa	0	2	7	3	1	13
	(0.00)	(15.38)	(53.85)	(23.08)	(7.69)	(100.00)
Punjab	0	7	5	0	0	12
	(0.00)	(58.33)	(41.67)	(0.00)	(0.00)	(100.00)
Rajasthan	0	0	1	17	9	27
	(0.00)	(0.00)	(3.71)	(62.96)	(33.33)	(100.00)
Uttar Pradesh	0	3	7	36	17	63
	(0.00)	(4.76)	(11.11)	(57.14)	(26.99)	(100.00)
West Bengal	0	0	6	7	3	16
	(0.00)	(0.00)	(37.50)	(43.75)	(18.75)	(100.00)
Sub-total	0	30	70	126	50	276
	(0.00)	(10.87)	(25.36)	(45.65)	(18.12)	(100.00)
Total	17	67	100	145	52	381
	(4.46)	(17.59)	(26.25)	(38.06)	(13.65)	(100.00)

Source: Census of India 1991, BSeries (Tables B-1(S) and B-10(S)) available on diskette.

Note: Figures in parenthesis relate to percentage of row totals.

Map 1 Classification of districts by levels of work participation rate of children



If our hypothesis of a link between child labour and generalized deprivation is well-founded, then we should expect the spatial distribution of the latter to mimic that of the former. Accordingly, we turn to a consideration of generalized deprivation in the next section.

4 Towards an expanded definition of deprivation

On the adequacy of conventional approaches

It is reasonable to expect that the incidence of child labour should be positively correlated with the incidence of poverty. Testing the validity of this hypothesis would presumably require a prior measure of clarity regarding how best to assess both the extent of child labour and the extent of poverty. Customarily, child labour has tended to be measured in terms of the 'restrictive' headcount ratio H_R of work participation, while poverty has tended to be measured in terms of a headcount ratio of the population with income less than a specified poverty line. The literature on child labour and poverty in India reflects a number of efforts at seeking the empirical relationship between the two phenomena (see, among others, Jayaraj 1995, Chandrasekhar 1997, Ray 2000, Dev 2001, Paul and Paul 2001, and Antonyraj 2003). On the whole, it would be fair to suggest that the presumed positive relationship between the two variables under review has, at the empirical level, been only weakly corroborated. A cross section, state-level analysis for India in the early 1990s brings this out quite clearly.

Table 6 presents state-wise, census-based information on the incidence of child labour for 1991 under both the restrictive and the liberal approaches to identification, and also state-wise statistics on a consumption expenditure-related headcount ratio of poverty for 1993-94, estimated by Sundaram and Tendulkar (2003) from NSSO data on the distribution of consumption expenditure. (The poverty line employed, in line with a

Table 6 State-wise estimates of child labour and consumption expenditure poverty for rural India in the early 1990s

Name of state	Headcount ratio of child labour						Headcount ratio of consumption expenditure poverty		
	Restrictive all areas	Liberal all areas	Restrictive rural area	Liberal rural area	Restrictive urban area	Liberal urban area	All areas	Rural areas	Urban areas
Andhra Pradesh	0.0998	0.5148	0.1248	0.5789	0.0309	0.3382	0.3081	0.2860	0.3680
Assam	0.0546	0.5139	0.0572	0.5347	0.0289	0.3108	0.5237	0.5785	0.1036
Bihar	0.0399	0.6468	0.0435	0.6827	0.0157	0.4005	0.6316	0.6573	0.4630
Gujarat	0.0526	0.3787	0.0707	0.4230	0.0166	0.2908	0.2993	0.3020	0.2944
Haryana	0.0254	0.3894	0.0297	0.4253	0.0114	0.2698	0.2524	0.3005	0.1141
Karnataka	0.0881	0.4272	0.1102	0.4829	0.0350	0.2935	0.3663	0.3827	0.3309
Kerala	0.0058	0.1351	0.0061	0.1407	0.0050	0.1183	0.3247	0.3409	0.2790
Madhya Pradesh	0.0808	0.5322	0.0990	0.5931	0.0178	0.3215	0.3901	0.3665	0.4662
Maharastra	0.0573	0.3407	0.0813	0.3941	0.0155	0.2480	0.4400	0.5106	0.3329
Orissa	0.0587	0.4732	0.0646	0.4959	0.0192	0.3204	0.5665	0.5957	0.3849
Punjab	0.0304	0.3673	0.0364	0.3951	0.0159	0.3005	0.1369	0.1168	0.0697
Rajasthan	0.0646	0.6000	0.0776	0.6540	0.0168	0.3816	0.2764	0.2625	0.3230
Tamilnadu	0.0483	0.2932	0.0593	0.3234	0.0259	0.2317	0.3816	0.3787	0.3867
Uttar Pradesh	0.0381	0.6219	0.0417	0.6540	0.0231	0.4894	0.3827	0.3914	0.3484
West Bengal	0.0416	0.5306	0.0486	0.5779	0.0187	0.3752	0.4454	0.5357	0.2141
India	0.0544	0.4978	0.0647	0.5490	0.0207	0.3309	0.4046	0.4301	0.3305
Estimated correlation co-efficients between the incidence of income poverty and incidence of child labour	0.1001*	0.3853*	-0.0464*	0.2890*	0.1297*	0.1960*	x	x	x

Notes: India as constituted by the 15 major states included for the analysis.
* signifies *not* statistically significant at the 1 per cent level.

Sources: Incidence of child labour based on computations from data in Census of India 1991: BSeries (available on diskette); incidence of poverty: Sundaram and Tendulkar (2003).

procedure advanced by the Indian Planning Commission, is in terms of a calorific norm-related level of monthly per capita expenditure.) Table 6 also furnishes estimated coefficients of correlation between the incidence of child labour and the incidence of consumption expenditure poverty. It can be seen from the Table that (a) none of the estimated correlation coefficients is statistically significant; (b) that even the sign of the coefficient of correlation between child labour and poverty conforms *uniformly* with expectation only when the former is measured according to its liberal interpretation; and (c) the value of the correlation coefficient is systematically higher when the liberal definition of child labour is employed.

It is likely that the reason for the poor empirical link between child labour and poverty is that both variables deserve to be 'properly' measured for the link to show up. As far as child labour is concerned, in Section 3, we argued a case for the liberal interpretation over the restrictive one. When it comes to poverty, the case against an exclusive reliance on poverty measured with respect to a uniquely specified income poverty line has been persuasively argued by Sen (1983). The view that poverty is best viewed as a multi-dimensional capability failure has been advanced in Anand and Sen (1997), and explored in a number of more recent contributions to the poverty measurement literature (Mukherjee 2001, Tsui 2002, Atkinson 2003, Bourguignon and Chakravarty 2003, Dutta, Pattanaik and Xu 2003). This also is the view incorporated in the analytical model presented in Section 2 of this paper. In what follows, we discuss the possibility of constructing an elementary measure of generalized capability deprivation.

On a simple multi-dimensional headcount index of capability deprivation

As sketched out in the formal model of Section 2, one would imagine that the necessity of keeping children from school and/or putting them to work either for a wage or in domestic tasks would be a declining function of the availability of infrastructural facilities which promote the attainment of certain basic capabilities. Important among such capabilities would be those of access to knowledge, access to potable water, mobility, being in good health, access to fuel energy for cooking, and access to electricity for lighting. Deprivation on these fronts could not only render the option of school for the child an unaffordable luxury, but also necessitate labour on her or his part to enable the household to survive. Even assuming that there will always exist some level of income at which the basic capabilities under discussion are attainable, one must expect there to be considerable spatial variation, at any given time, in the level of income sufficiency: poverty is therefore unlikely to be reasonably captured by identifying the poor as those falling below some uniquely specified income poverty line. Nor is it particularly feasible to estimate the widely variable income requirements for achieving a given set of functionings across a vastly dispersed and heterogeneous population. In many ways, consequently, it is both conceptually and practically meaningful to assess deprivation directly in terms of failure of access to a specified set of basic human capabilities. This is the approach to the measurement of deprivation we adopt here.

More specifically, we take what Atkinson (2003) calls a 'counting' approach to the problem. In the present context, and for our purposes, this requires us to count the number of people who experience a failure of access with respect to each capability attribute, to aggregate these numbers across all attributes, and to express the resulting sum as a proportion of the aggregate that would emerge if every person experienced a

failure of access with respect to every attribute. Let us say that the proportion of the population deprived with respect to capability j is h_j, and that there are K such capabilities under consideration. Then our aggregate headcount index of generalized deprivation, or capability failure, is given by

$$D = (1/K)\sum_{j=1}^{K} h_j.$$

Our choice of capability attributes is dictated by a mixture of the intrinsic plausibility of the candidates and practical considerations of data availability, and the capabilities we consider are access to knowledge, access to potable water, mobility, being in good health, access to fuel energy for cooking, and access to electricity for lighting. Our data source for the construction of the index D is constituted by various publications of India's Census of 1991 (see the Appendix for a brief description of the data). In constructing the measure D, for every rural district of India's fifteen major states, we have proceeded as follows. First, we have taken access to knowledge to be determined by whether a village has a middle or a high/higher secondary school. For any given district, h_S is the proportion of the district's population living in those villages of the district which do not have either a middle or a high/higher secondary school. Second, access to potable water is taken to be determined by whether a village has access to tap water for drinking. h_W is the proportion of the district's population living in villages without access to tap water. Third, mobility is taken to be determined by two features of a village: whether it is served by a bus stop or a railway station, and whether it is connected to the world outside by means of a 'pucca' (metalled) road. h^1_M is the proportion of a district's population living in villages without either a bus stop or a railway station, and h^2_M the proportion living in villages not connected to the outside world by a 'pucca' road. Fourth, access to healthcare is taken to be determined by the presence of any kind of health facility in a village. h_H is the proportion of a district's population living in villages which do not have any kind of health facility (including the services of a community health worker). Fifth, access to energy for fuel is taken to be determined by two features of a village: whether it has any area under forests (from which firewood can be relatively easily accessed), and whether its inhabitants have to depend on labour-intensive sources of fuel such as dung cake, firewood, and coal/lignite as the principal sources of energy. h^1_F is the proportion of a district's population living in villages devoid of forest cover. Population Census data are available on the proportion of *households* in each village that employ various labour-intensive sources of fuel. If we assume (in the absence of data to the contrary) that all households are of the same size—call this assumption A—then h^2_F is the proportion of a district's households (and therefore, by virtue of assumption A, the proportion of its population) without easy access to non-labour-intensive fuel sources. Finally, data are available on the number of households in each village without access to electricity. Invoking assumption A again, h_E is the proportion of a district's households, and therefore population, without access to electricity. The composite headcount ratio of generalized deprivation D is an equally weighted sum of the eight headcount ratios h_S, h_W, h^1_M, h^2_M, h_H, h^1_F, h^2_F and h_E which we have just defined:

$$D = (1/8)[h_S + h_W + h^1_M + h^2_M + h_H + h^1_F + h^2_F + h_E].$$

As stated earlier, the value of D has been computed for each district in each of the fifteen major states of the Indian Union, covering 381 districts in all. We consider next the orders of magnitude of generalized deprivation that obtain in rural India for the year 1991.

The spatial distribution of generalized capability deprivation in rural India

At the all-India rural level, an aggregation of district-wise values of the index D yields an overall D-value of nearly 63 per cent. This figure, by any reckoning, is a reflection of serious generalized capability failure. In particular, the failure which is suggested here is something of a contrast to the relatively encouraging view of deprivation that is afforded by official over-time estimates of consumption expenditure-related poverty, and which have been widely accepted as signalling India's increasingly promising performance on the poverty front. While this issue deserves independent and careful attention, it must suffice here to note that the interests of realism are better served by reliance on a multi-dimensional index of generalized capability deprivation than by reliance on the customary practice of reckoning poverty exclusively as income shortfall. Such a re-orientation in perspective would be a cause for less euphoria over, and greater serious engagement with, the problem of deprivation.

The high order of deprivation reflected by D is also accompanied by considerable disparity in its spatial distribution. At the polar extremes, D ranges in value from 0.203 in Nilgiris district of Tamil Nadu to 0.890 in Karbi Anglong district of Assam, and the coefficient of variation in the district-wise distribution of the D-values is high, at nearly 23 per cent. Grouped data would permit a summary examination of the distribution of generalized deprivation. Precisely along the lines adopted to study the distribution of child labour, we resort here to a five-fold classification of districts according to the extent of generalized deprivation displayed by them. The districts are grouped into the categories of 'very low (VL)', 'low (L)', 'medium (M)', 'high (H)', and 'very high (VH)' deprivation, according to the size-class interval of D-values in which they fall. These intervals, derived analogously with the procedure we have outlined in the context of child labour, are respectively [0.203, 0.3401], (0.3401, 0.4776], (0.4776, 0.6150], (0.6150, 0.7525], and (0.7525, 0.890]. Table 7 presents summary information on the distribution of districts and population by levels of deprivation. The distributional picture presented in Table 7 is not encouraging. The modal deprivation category is the 'high' one, and while the left tail of the distribution is very short, its right tail is very long.

Table 7 Distribution of districts and rural population by level of deprivation

Deprivation category	Number of districts	Per cent share of category-specific districts in all districts	Per cent share of category-specific rural population in total rural population
Very low	11	2.89	2.10
Low	62	16.27	15.18
Medium	91	23.89	22.77
High	138	36.23	38.28
Very high	79	20.73	21.68
Total	381	100	100

Source: Based on data in Census of India 1991: *Occasional Paper No. 5 of 1994, Housing and Amenities: A Data Base on Housing and Amenities for Districts, Cities and Towns*, Demography, Training and Data Dissemination Division, Office of the Registrar General & Census Commissioner, India, and Census of India 1991: *Village Directory*, available on diskette.

Table 8 State-wise distribution of districts classified by the level of generalized deprivation

States	Levels of deprivation					Total
	Very low	Low	Medium	High	Very high	
			States south of the Vindhyas			
Andhra Pradesh	0	3	14	5	0	22
	(0.00)	(13.64)	(63.64)	(22.72)	(0.00)	(100.00)
Karnataka	0	5	13	2	0	20
	(0.00)	(25.00)	(65.00)	(10.00)	(0.00)	(100.00)
Kerala	8	6	0	0	0	14
	(57.14)	(42.86)	(0.00)	(0.00)	(0.00)	(100.00)
Maharastra	0	10	17	2	0	29
	(0.0)	(34.48)	(58.62)	(6.90)	(0.00)	(100.00)
Tamil Nadu	1	6	13	0	0	20
	(5.00)	(30.00)	(65.00)	(0.00)	(0.00)	(100.00)
Sub-total	9	30	57	9	0	105
	(8.57)	(28.57)	(54.29)	(8.59)	(0.00)	(100.00)
			States north of the Vindhyas			
Assam	0	0	0	8	15	23
	(0.00)	(0.00)	(0.00)	(34.78)	(65.22)	(100.00)
Bihar	0	0	0	16	26	42
	(0.00)	(0.00)	(0.00)	(38.10)	(61.90)	(100.00)
Gujarat	1	14	4	0	0	19
	(5.26)	(73.69)	(21.05)	(0.00)	(0.00)	(100.00)
Haryana	0	15	1	0	0	16
	(0.00)	(93.75)	(6.25)	(0.00)	(0.00)	(100.00)
Madhya Pradesh	0	0	0	28	17	45
	(0.00)	(0.00)	(0.00)	(62.22)	(37.78)	(100.00)
Orissa	0	0	0	9	4	13
	(0.00)	(0.00)	(0.00)	(69.23)	(30.77)	(100.00)
Punjab	0	3	9	0	0	12
	(0.00)	(25.00)	(75.00)	(0.00)	(0.00)	(100.00)
Rajasthan	0	0	8	18	1	27
	(0.00)	(0.00)	(29.63)	(66.67)	(3.70)	(100.00)
Uttar Pradesh	1	0	12	41	9	63
	(1.59)	(0.00)	(19.05)	(65.08)	(14.28)	(100.00)
West Bengal	0	0	0	9	7	16
	(0.00)	(0.00)	(0.00)	(56.25)	(43.75)	(100.00)
Sub-total	2	32	34	129	79	276
	(0.73)	(11.59)	(12.32)	(46.74)	(28.62)	(100.00)
Total	11	62	91	138	79	381
	(2.89)	(16.27)	(23.88)	(36.22)	(20.74)	(100.00)

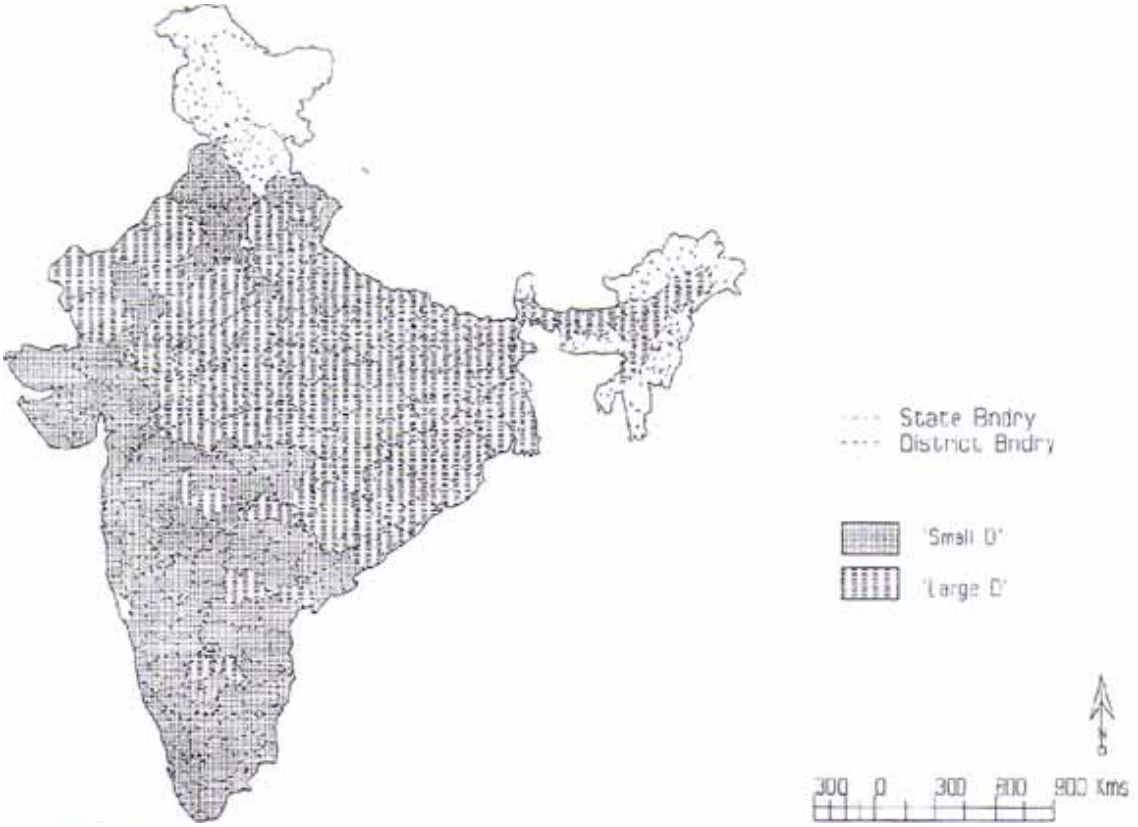
Source: See Table 1.

As in the case of child labour, it is instructive to look at the spatial distribution of generalized deprivation in terms of a north-south divide. Table 8 provides the relevant

information. We find that the geography of deprivation is not much different from the geography of child labour: while less than 9 per cent of all districts in states south of the Vindhyas are in the H or VH category of deprivation, this figure is in excess of 75 per cent for all districts in states north of the Vindhyas. Conversely, while 37 per cent of districts in the southern states fall in the L or VL categories, the corresponding figure for the northern states, at 12 per cent, is less than one-third the 'southern' figure. A disaggregated picture (available on request) suggests that of the 11 districts in the VL category, as many as 8 belong to the southern state of Kerala alone, while of the 79 districts in the VH category, not a single one belongs to a southern state. Clearly, the southern states are vastly better served in the matter of access to basic amenities than are their northern counterparts. This is despite the presence of some exceptions to the rule, constituted by the northern states of Haryana, Punjab and Gujarat. Indeed, Haryana—with about 94 per cent of its districts being concentrated in the L category of deprivation—is second only to Kerala in this respect. But the average northern performance is severely compromised by the levels of deprivation obtaining in Assam, Bihar, Madhya Pradesh, Orissa and West Bengal, which are the worst-performing states and 90 per cent of whose districts fall in the H and VH categories of deprivation.

A map based on a binary classification of deprivation levels confirms the above picture. Taking the national average level of D of (roughly) 60 per cent as a cut-off level, districts are classified into those with above-cutoff levels of D (the 'large-D' districts), and those with below-cutoff levels (the 'small-D') districts. Map 2 presents this dichotomized picture of distribution, and is a simple visual aid to a perception of the north-south divide.

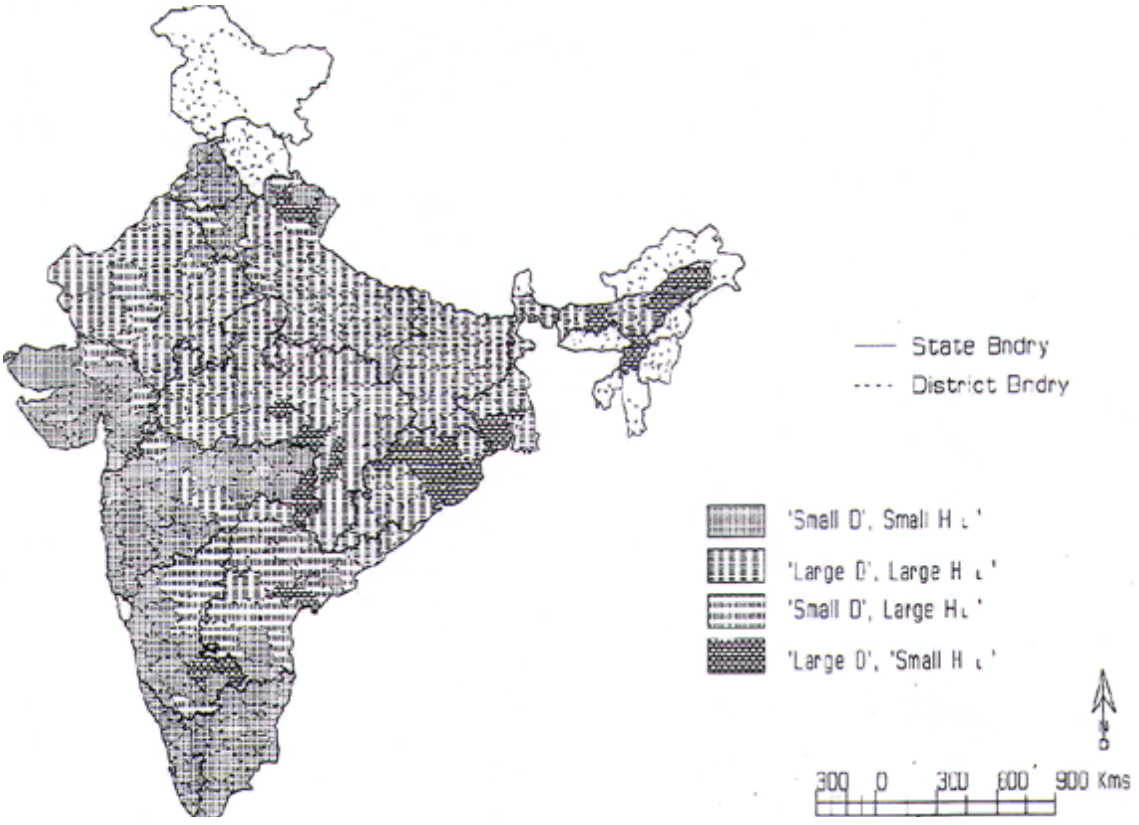
Map 2 Classification of districts by levels of deprivation



5 Child labour and capability deprivation: putting the picture together

The underlying thesis of this paper, as elucidated in the simple model of Section 2, is that child labour might be expected to be an increasing function of capability deprivation. An elementary visual verification of the proposition can be obtained, in the Indian context, from a superimposition of Map 2 on Map 1. The exercise would reveal that there is a considerable area of intersection between the 'large H_L' and 'large D' districts, just as there is a considerable area of intersection between the 'small H_L' and 'small D' districts (see Map 3). Indeed, the districts can be classified into four exhaustive and exclusive categories of (large, large), (small, small), (large, small) and (small, large), where the first element in each category stands for the magnitude of the child labour variable (H_L) and the second element for the magnitude of the generalized deprivation variable (D). A measure of 'concordance' between the incidence of child labour and that of deprivation is reflected in the proportion of all districts accounted for by the (large, large) and (small, small) districts taken together. This proportion, at nearly 82 per cent, turns out to be very sizeable. Additionally—and more familiarly—the Pearson coefficient of correlation affords a simple measure of the degree of association between the variables H_L and D under consideration. The estimated correlation coefficient, at 0.707, is very high (given that the number of observations is 381), and is significant at the 1 per cent confidence level. The message is a simple one: child labour flourishes in regions characterized by a high order of generalized capability failure.

Map 3 Joint classification of districts by levels of child work participation and deprivation



6 Concluding observations

In this paper, we have relied on a mix of analytical reasoning, micro-level findings, and macro-level data in order to elucidate a simple relationship between the phenomena of child labour and generalized capability deprivation. In the process, we have advanced the case for adopting a more expansive and inclusive approach to reckoning both child labour and deprivation than is customarily the case. The outcome of such an exercise in the Indian context suggests that (a) the prevalence of child labour is larger than conventionally allowed; (b) the level of deprivation that obtains is also larger than conventionally allowed; and (c) there is a much stronger association between the phenomena under review than conventionally uncovered.

The paper also points out that spatial inequality—in terms of a deep north-south divide—in the distribution of both child labour and deprivation are pronounced. This is similarly true for a partitioning of the population by sector of origin (rural/urban) and by caste (Scheduled Castes and Tribes/the rest). High average levels of child labour and poverty are rendered the more intolerable by their being accompanied by high orders of inequality in their distribution, for the relatively badly-off sections of the population, in such a situation, would also be doing absolutely very badly.

Whether we speak of child labour or fertility or mortality rates, there is a strong case in favour of addressing these problems by attending to the provision of basic infrastructural facilities. Pleasingly declining temporal trends in income-poverty (founded, additionally, on conceptually dubious methods of specifying the poverty line) have succeeded in concealing the truth of the gravely acute level of generalized capability deprivation that obtains (especially) in the rural areas of India. Anti-child labour policy is not sensibly served by calls for blanket bans on the phenomenon which do not address its underlying causes. A more rational, and sensitive, approach to the problem would reside in efforts aimed at relieving the punitive want of access to basic amenities which, in many villages, keeps children out of school and pitchforks them into work.

A prioritized plan for the creation, and supplementation, of infrastructural facilities in the rural areas of the country is urgently called for. It surely bears consideration if the costs of such a project can be partially financed by drawing on India's cumulated foreign exchange reserves. Failing this, the full and un-stressed participation of children in formal education must continue to remain compromised. Indeed, with or without the instrumental objective of eradicating child labour, it is impossible to overemphasize the need for the building and staffing of schools which are easily accessible by children; the installation of drinking water taps; the provision of firewood and fuel at affordable prices through fair-price ships; the setting-up of primary healthcare centres; the laying of roads to enhance connectivity and mobility; the provision of electricity for lighting; and the creation of employment opportunities for adults. These issues acquire a particular salience in the light of the verdict of the 2004 general elections and the commitments that have been made by the ruling coalition in the manifesto of its *Common Minimum Programme*. It would be a matter for serious regret if the problem of deprivation—and all its attendant ills, including that of child labour—were to continue to be left unaddressed in the heat and haste of asserting India's alleged 'super-power' status.

In concluding, we would freely admit that there is little in this paper which is of a revelatory nature. Possibly its only remarkable feature is the apparently continuing need it reflects for emphasizing the commonplace truths with which it has dealt.

Appendix

Data employed in the construction of the measure of generalized deprivation

Data for the construction of the index D have been obtained from the *Population Census of India 1991*. For the rural areas of each district, information on total population, total number of households, the proportion of households that do not have access to electricity, and the proportion of households that are largely dependent, for cooking, on cowdung cake, firewood, coal/lignite and crop residue, has been abstracted from the publication *Census of India 1991: Housing and Amenities*. Data on the availability of infrastructural facilities for each village are provided in the *Village Directory, Census of India 1991*: a file in the village directory designated VILL-DIR contains information, stored on diskettes, relating to the village-wise disposition of infrastructural facilities. For seven states the files in the village directory additionally provide data on the population size of each village in every district. For the remaining eight states, data on village population have had to be accessed from the *Village Census Abstract, Census of India 1991*, available on diskette in the directory designated PCA. The task of combining and matching village-level data on infrastructural facilities and population for these eight states has proved to be an extremely tedious one, because of differences in the order in which the villages are arranged in the village directory and the primary census abstract files. Additionally, the two directories employ different formats to enter the location code for each village, and indeed different softwares in different states for the entry of data. Familiarity with a gamut of softwares such as Lotus, Excel, DBase and SPSS has proved to be essential for accessing the data. In all, the data employed pertain to 547,795 villages distributed across 381 districts (excluding the three wholly urban districts of Greater Bombay, Madras and Calcutta) in 15 states (excluding Jammu and Kashmir where the Census was not conducted in 1991). The rural population of the 15 states under consideration accounted for nearly 98 per cent of the total rural population of India in 1991.

References

Anand, S. and A. K. Sen (1997) "Concepts of Human Development and Poverty: A Multidimensional Perspective", *Human Development Papers*. New York: UNDP.

Antonyraj, C. (2003) "Child Labour in India: 'Visible School-less-ness' and 'Invisible Work'", Ph.D Thesis, submitted to the University of Madras.

Atkinson, A. B. (2003) "Multidimensional Deprivation: Contrasting Social Welfare and Counting Approaches", *Journal of Economic Inequality*, 1: 51-65.

Basu, K. (1999) "Child Labour: Cause, Consequences, and Cure with Remarks on International Labour Standards", *The Journal of Economic Literature*, 37: 1083-1119.

—— (2003) "Global Labour Standards and Local Freedoms", *WIDER Annual Lecture 7*. Helsinki: UNU-WIDER.

—— and P. H. Van (1998) 'The Economics of Child Labour", *American Economic Review*, 83: 412-27.

Bourguignon, F. and S. R. Chakravarty (2003) 'The Measurement of Multidimensional Poverty", *Journal of Economic Inequality*, 1: 25-49.

Chandrasekhar C. P. (1997) "The Economic Consequences of the Abolition of Child Labour: An Indian Case Study", *The Journal of Peasant Studies,* 24: 137-179.

Chaudhri, D. P. (1997a) "Female Child Labour and Gender Bias in School Education in Indian States", *Indian Journal of Labour Economics,* 40: 493-505.

—— (1997b) "A Policy Perspective on Child Labour in India with Pervasive Gender and Urban Bias in School Education", *Indian Journal of Labour Economics,* 40: 789-808.

Dasgupta, P. S. and D. Ray (1990) "Adapting to Undernutrition: the Clinical Evidence and its Implications", in Volume 1 of J. Dreze and A. K. Sen (eds) *The Political Economy of Hunger*. Oxford: Clarendon Press, pp. 191-246.

Dev, M. (2001) "Child Labour in India: Dimensions, Determinants and Policies", in K. P. Kannan (ed) *Economics of Child Labour*. New Delhi: Deep & Deep Publications, pp. 1-37.

Dutta, I., P. K. Pattanaik and Y. Xu (2003) "On Measuring Deprivation and the Standard of Living in a Multidimensional Framework on the Basis of Aggregate Data", *Economics*, 70: 197-221.

Hirway, I. (1999) "Estimating Work Force Using Time Use Statistics in India and its Implications for Employment Policies", paper presented at the *International Seminar on Time Use Studies*, 7-10 December, Ahmedabad, India. Available at: http://hdrc.undp.org.in/resoruces/gnrl/ThmticResrce/gndr/Indira_Estimate.pdf. Accessed on 27 May 2005.

Jayaraj, D. (1995) "Labour Force Participation of Women and Children in Rural India: An Analysis of the Inter-State Variability", *Indian Journal of Labour Economics*, 38: 339-48.

—— and S. Subramanian (2002) "Child Labour in Tamil Nadu in the 1980s: A Preliminary Account of Its Nature, Extent and Distribution", *Economic and Political Weekly*, 37: 941-54.

Lieten, G. K. (2004) "Child Labour in South Asia: An Account of Numbers", in G. K. Lieten, R. Srivastava and S. Thorat (eds) *Small Hands in South Asia: Child Labour in Perspective*, IDPAD. New Delhi: Manohar Publishers & Distributors, pp. 37-59.

——, R. Srivastava, and S. Throat (2004) "Introduction", in G. K. Lieten, R. Srivastava and S. Thorat (eds) *Small Hands in South Asia: Child Labour in Perspective*, IDPAD. New Delhi: Manohar Publishers & Distributors, pp. 15-36.

Mukherjee, D. (2001): "Measuring Multidimensional Deprivation", *Mathematical Social Sciences*, 42: 233-51.

Narasimhan, R. L. and R. N. Pandey (1999) "Some Main Results of the Pilot Time Use Survey in India and Their Policy Implications", paper presented at the *International Seminar on Time Use Studies*, 7-10 December, Ahmedabad, India. Available at: http://hdrc.undp.org.in/resoruces/gnrl/ThmticResrce/gndr/Nara_Pandey_Main_Results.pdf. Accessed on 27 May 2005.

Paul, P. K. and D. P. Paul (2001) "Spatial and Gender Differentials in Child Labour in India: An Inter-State Analysis", in K. P. Kannan (ed.) *Economics of Child Labour,* New Delhi: Deep & Deep Publications, pp. 185-201.

Ray, R. (2000): "Poverty, Household Size and Child Welfare in India", *Economic and Political Weekly*, 35(39) 23 September, pp. 3511-20.

Rodgers, G. and G. Standing (1981) "The Economic Roles of Children: Issues for Analysis", in G. Rodgers and G. Standing (eds) *Child Work, Poverty and Underdevelopment*, ILO: Geneva, pp. 1-45.

Seckler, D. (1982) '"Small But Healthy": A Basic Hypothesis in the Theory, Measurement and Policy of Malnutrition', in P. V. Sukhatme (ed.) *Newer Concepts in Nutrition and Their Implications for Policy*, Pune: Maharashtra Association for the Cultivation of Science Research Institute, pp. 127-137.

Sen, A. (1983) "Poor, Relatively Speaking", *Oxford Economic Papers*, 35: 153-169.

Sundaram, K. and S. D Tendulkar (2003) "Poverty in India in the 1990s: Revised Results for All-India and 15 Major States for 1993-94", *Economic and Political Weekly,* 38(46) 15 November, pp. 4865-72.

Tsui, K-Y. (2002) "Multidimensional Poverty Indices", *Social Choice and Welfare*, 19: 69-93.

Venkatanarayana, M. (2005) "On the Non-Random Distribution of Educational Deprivation of Children in India", Trivandrum: Centre for Development Studies, (paper presented at a workshop on *Normative and Quantitative Analysis of Educational Inequalities*, Belgium, May 2005) *mimeo*.

Data sources

Census of India 1991, BSeries (Tables B-1(S) and B-10(S))—diskette, Registrar General, New Delhi, India.

Census of India 1991: *Occasional Paper No. 5 of 1994, Housing and Amenities: A Data Base on Housing and Amenities for Districts, Cities and Towns,* Demography, Training and Data Dissemination Division, Office of the Registrar General & Census Commissioner, India.

Census of India 1991: *Village Directory*—diskette, Registrar General, New Delhi, India.

Census of India 2001 (2003a) *Tables on Houses, Household Amenities and Assets,* Registrar General & Census Commissioner, India.

Census of India 2001 (2003b) *Tables on Houses, Household Amenities and Assets for Scheduled Castes,* Registrar General & Census Commissioner, India.

Census of India 2001 (2003c) *Tables on Houses, Household Amenities and Assets for Scheduled Tribes,* Registrar General & Census Commissioner, India.