[704] Paper

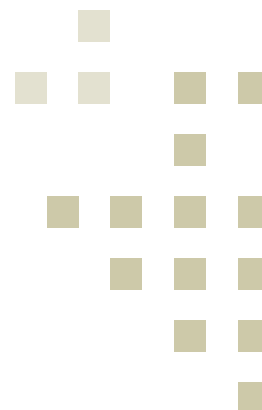## Child soldiers: Reasons for variation in their rate of recruitment and standards of welfare

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Child soldiers: Reasons for variation in their rate of recruitment and standards of welfare

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[Abstract] Why do some children voluntarily join while other children are forced to join military organization in situations of conflict, and why do the organizations recruit them? How is the actual number of children determined? These are the questions raised in this paper. To address them the author draws on results and ideas from three independent lines of research; One dealing with child labour in general, another with the study of conflicts and the third with children's decision-making powers based on child psychology.

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1. Child labour and conflicts

That young children today are engaged in organized killing of other children and adults in a significant number of countries, is one of the most ethically revolting facts about the world day, or so would, I believe, be the prevailing public opinion in most developed countries. Unlike the attitude to many other forms of child labour that opinion appears to be globally shared. Otherwise it would be difficult to explain why not more children would participate actively in violent, large scale conflicts.

It may not be so obvious that severe violence performed and suffered by children should be considered as a separate and more ethically worrisome issue than if performed and suffered by adults, it is clearly perceived as such. Like global terrorism it has become a global issue because of the feelings it awakes, not its quantitative significance. The feelings it awakes are mostly feelings of compassion, not fear or revenge as in the terrorism case, and the activities it activates are mostly humanitarian, not military or destructive. Nevertheless, here I will mainly set the ethics issues – including the ethics of adult-versus-child – aside, and ask a number of questions about what determine the mix of children and adults that violent organizations[1] apply; at bottom also questions about quantitative significance.

A child soldier is defined here as a child who participate actively in a violent conflict by being member of an organization that applies violence in a systematic way. The definition hinges, of course, on what is meant by a child. The basic idea of the article is to explore questions that arise when we connect two different, but rapidly increasing research fields: the study of violent conflicts and children's labour. To the degree the phenomenon of child soldiers have been exposed to social science research at all, they have so far mainly been analysed within the child labour tradition. A study of child labour in general mainly may contribute to the understanding of the supply side of child soldiering, however. To understand the demand side, we would have to look more closely into civil wars and the behaviour of violent organizations. As I will later argue, in most cases it is reasonable to assume that it is the demand side that determines the actual number of children who are asked to kill.

Since violent organizations often use force when recruiting children, the notions of supply and demand may be misleading, but I will discuss elements that decide how easy it is to catch child versus adult recruits as a kind of 'supply' characteristic. It is the characteristics of children, however, that decide how useful they (compared to adults) may become for the violent organizations themselves.

Evidence suggests that that not only the number of child soldiers is determined from the violent organizations' side, but also the child welfare may vary systematically with the kind of organization they participate in. For example, profit-oriented violent organizations appear on average to be more harmful.[2] The moral panic the phenomenon of child soldiers has given rise

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1 By a violent organization I will mean an organization that applies fairly large scale (at a company level or above) violent actions regularly either as aim or instrument. Both rebel, government military and large-scale crime organizations belong to this category, but the focus in this paper will be on rebel organizations since

2 In the literature on civil wars the terms 'greed' and 'grievance' are mainly used about different sets of causes of war. Greed is focused on economic factors that make it possible

to, may have overshadowed perception and analysis of the variation in the welfare of the children involved.

The aim in the following is to explore some questions that naturally arise when the three streams of knowledge meet: 1) What we know about the relevant capabilities in general of children in general; 2) what we know about the extent, the causes and consequences of children participating in economic activities (child labour); 3) what we know about the wars (or criminal activities) where children get engaged, the participating organizations and their behaviour. How may elements from these three strands of research be combined in order to supply plausible explanations of child soldier phenomena and their quantitative distribution across conflicts? The ambition is neither to present any new data – not even seriously research the quality of the existing one –, nor to formulate and test any specific, new empirical hypotheses about the cause of child soldiering.

In the following I will give the so-called *child soldier ratio* considerable attention that is the number of child soldiers in a violent organization divided by its total number of soldiers. One reason for the attention is simply that the ratio has played an important role for the guess-mates of the number of child soldiers in several conflicts. The ratio also concentrates many of the social and economic effects likely to have impact on the use of children in violent conflicts. Finally it is in focus in the only attempt I am aware of to explain the use of child soldiers quantitatively, Reich and Achvarina (2004)

I would like to underline that this paper is an explorative one with a number of preliminary observations that may prove incorrect and conclusions that may prove wrong. It is an attempt, however, to make sense out of a number of disjointed observations and judgments made by people who have had more first-hand experience of this revolting phenomenon we may observe in some modern societies.

2. Numbers and data sources

Like many other phenomena that have given rise to international concern, child soldiering has received its global number. It has until recently been 300 000; that is, the standard estimate of the total number of child soldiers in the world has until recently been 300 000. This number has partly disappeared, partly been scaled down to something around 100 000.[3] Despite several

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to finance rebel organizations and give them some chances to win military contests. Grievance is focused on political factors and forms of economic unfairness as explanatory mechanisms. In the following, however, wars of greed or grievance will mean wars where the major competitors are either consciously profit-oriented or oriented towards achieving some collective good for non-members, that is, have to rely on some forms of altruism. Hence, a grievance organization may be explained by 'greed'. When looking at an organization greed or grievance is not something that works behind the backs of the agents. While one may agree with Collier and Hoeffler (2002) that the 'greed' complex has better explanatory power statistically, grievance as well as greed organizations exist and often behave in a different manner. This difference may make a significant difference for the welfare of the child soldiers as well as for the civil population. However, one may wonder about the theoretical explanatory power of 'greed' causes if a 'greed 'war is fought by grievance organizations? That does not matter much in the following, since I will focus on the consequences of the war for the children who get involved in the fighting, not the causes of war. Recently the distinction has went out of fashion, but still it appears to reflect some reality, at least when it concerns the outcomes for children.

3   This number is my reading of Coalition to stop the use of child soldiers (2004). The readjustment downwards is combined with an increased emphasis on the uncertainty of the es-

weaknesses, this number is based on more careful counting. The exact number is not so important at this stage of the exploration, however.

At one hand it tells that a significant number of children has gone through and still may go through experiences and participate in activities they should not be burdened with according to most normative views of childhood. At the other hand, the number of child soldiers is surprisingly modest given the fact that the areas where most of the violent conflicts are going on, are characterized by their children participating in adult economic activities from an early age.

This is partly reflected in the corresponding global NGO aggregates for child labour. The propaganda estimate for the number of working children is 250 million. The number of child soldiers is also modest compared to the estimate of the total number of children engaged in so-called 'worst forms of child labour' of which child soldiering forms a part, 50 million, where 5.7 million are working under 'horrific' circumstances. The basic reason why the number of child soldiers is so low may be that a norm about soldiering as incompatible with childhood is surprisingly widely shared. This is in contrast to the international distribution of actually held norms about child labour in general where normative views often differ sharply. Even if we only compare the number of child soldiers to the number of children in the conflict countries we will find low participation rates in most areas.[4] The low participation rate makes it also difficult even under the best of circumstances to get representative samples of active child soldiers (Pedersen, 2004).

Even as an indicator of child suffering during conflicts, the suffering indicated by an average stock of 100 000 (or 300 000 for that matter) child soldiers for the 2001 – 2004 period appears modest compared to the yearly flow of 200 000 children who have been ascribed as killed due to violent conflicts during the last decade.[5] While the statistical basis for most of these aggregate numbers is weak, the international humanitarian organizations are the ones that have been engaged with the issues more often and more systematically than anyone else, and thus they may have evolved a rough 'feel' for their relative numbers.

If we look more closely at the different country estimates of the number of child soldiers, it is clear that they cannot meaningfully be aggregated:

timated numbers. If a real decrease has taken place, it is partly due to peace settlements in some wars where extensive use of children occurred (such as the war in Sierra Leone), partly to more sober and better researched numbers for each country, and possibly also due to increased international pressure on the violent organizations (Humpreys and Weinstein, 2004). Global estimates will be heavy influenced by the number of children estimated for the Burmese army.

4   The participation rate most commonly discussed is the fraction of children in the violent groups. This may be quite high, as we will see, but most violent organizations are quite small compared to the total population in which they operate so the rate of child soldier to the number of children in the relevant age cohorts becomes low.

5   All the numbers referred to above are collected at the Global March web page, but they may be found almost everywhere. With the possible exception of the death estimate, these numbers are quite speculative and based upon rough assessments made by international public organisations or NGOs. The fact that global numbers often stay unchanged even if the organisation in charge makes new studies that changes the estimates for important components on which the global aggregate presumably is based, reflects their symbolic, propagandist nature. It is worth noting that the latest official survey published by the Coalition to Stop the Use of Child Soldiers (November 2004) does not present any aggregate numbers at all, but only gives country estimates and refers to the fact that the use of children in armed conflicts have been reported for more than 20 countries in the periods April 2001 till March 2004.

Some reports refer to the stock of children who are 'employed' by a violent organisation at a given point of time, others try to catch the aggregate flow of children who have been employed during a given period, some may give the highest stocks experienced in period considered, some may even add the stock of children observed at different points of time, and so on. The last way to count is, of course, unacceptable. The stock of children is mainly useful for analysing the role of the children in the violent organisations or the role of violent organisation in the child labour markets.

For judging the effects on child welfare, and for studying the share of children in recruitment processes of the violent organisations, cumulated flows are more relevant. There are several reasons for this judgment: The harmful effects on the children of having participated in armed conflicts are probably long-lasting. Hence it is the number of children who has gone through the experience that should count when considering these effects. Secondly, the death rate in battles among children is likely to be different, so behind a stock of child soldiers, a larger (or smaller, if they are protected by adult commanders and soldiers against the most risky assignments) number of children has been recruited compared to adults. There is also reason to expect different desertion rates, reinforcing the argument that the cumulative flow is a better measure.

In practice, we have no good estimates of either, so when it comes to quantitative assessments of the number child soldiers we have to rely on a) rather loose impressions made by experts who combine rough assessments of the size of the violent organization combined with a few observations of the age distributions of units observers have happened to gain access and b) more or less systematic surveys made mainly from demobilisation and attempted reintegration processes.

Data collected in the last situation is, of course, extremely sensitive where honest answers about whether you have been a child soldier or not, rarely can be expected. While promising anonymity, the respondents have few reasons to trust the claim. In most cases the likelihood of renewal of the war is quite high, and considered as such by the respondents. Depending on the exact circumstances, an honest answer may risk your life, a re-recruitment into a violent organization, a long jail sentence or make you miss the demobilisation and reintegration support sometimes provided by international donors.[6] The information is also likely to be strongly skewed in the direction of areas and conflicts where international organisations are more strongly involved.[7] Nevertheless, it is here we are likely to get more satisfactory data. So far, to my knowledge individual level data of satisfactory quality exist for Sierra Leone and Sri Lanka, and may be developed for Liberia and North Uganda.

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6   Psychologists and psychiatrists have, however, been in position to make statistical studies of the psychological effects of child soldier experience cf., for example, Derluyn et al (2004) and Dyregrov et al (2002). These effects are, however, not the main focus of this paper.

7   The possible impact of the activities of international organizations on data availability is highlighted by the recent study of Reich and Achvarina (2004), where they find the major explanatory factor in determining the fraction of children in the total population of soldiers in African civil war to be the degree of protection against military intrusion of the refugee camps in the area. While the refugee camps certainly are important, the events connected to the camps are also likely to be better covered in the available child soldier statistics, making it easy to overstate their empirical importance.

Qualitative information about mechanisms of recruitment, treatment and behaviour of children is more plentiful. Again, most of the information has been collected in connection with the international donor organisations' efforts to assist in the demobilisation and reintegration of child combatants. While qualitative and therefore often considered anecdotal, they vary much in their levels of precision. Here it is impossible to avoid subjective judgments that may prove wrong. I have in the following tried to rely only on reports that appear based on fairly sharp observations, not normative conformist presuppositions. A few studies have their empirical basis in Western soldiers' battlefield experience when fighting children (Singer, 2001–2002, and Center for Emerging Threats and Opportunities, 2002). While not systematic, they bring forward actual experience about child soldiers that is not otherwise available.

An additional source of information that is potentially relevant for the understanding of the supply mechanisms of child soldiers is the increasing number of household surveys in poor countries that also include some information about the labour of the children. In principle, employment as a soldier may be considered one form of child labour. The advantage of this source of information is that it is more systematic and somewhat less riddled by the problem of eliciting honest answers than the direct child soldier data. The information about the large sub-group of children that neither work nor go to school in many poor countries according to these studies is likely to be of particular interest (see Biggeri et al, 2003).

A key question that arises when explaining the use of child soldiers of different age groups is to determine whether and in what ways their decision-making capabilities are different from the adults'. In addition to child labour data I will here report on studies of children's decisions and cognitive behaviour in different experiments published in a series of papers at the Department of Economics, University of Oregon (cf. Harbaugh et al, 2004). While there obvious problems with transferring data collected this way to real world situations in general and child soldier behaviour in particular, where both strong emotions and group processes are likely to be heavily involved, correctives to the very emotionally charged and frequently unconvincing descriptions of child behaviour in war-like conditions are needed.

As mentioned above, no really statistically reliable data about child soldiers exist. I have tried to avoid the purely anecdotal descriptions, however, and stick to observations reported in studies clearly aimed to analyse and describe facts. The facts are mainly of three types: 1) Interviews made by international observers who have had got access to some units of some violent organization. These interviews are of varying quality and have mostly humanitarian aims in mind. The best reports contain for the most part qualitative information about the conditions and thinking of the child soldiers. 2) Less impressionistic data have been collected from a number of Central African countries (ILO/IPEC 2003) where a number of child soldiers from designated areas have been chosen to be interviewed in some systematic way (but not by random sampling) and their characteristics and environments are compared to similarly chosen ex-child soldiers and never-participating children. Whether the recorded differences are statistically valid or not are impossible to determine, but they are suggestive and useful for the construction

of (possibly) realistic theories. 3) Data from demobilisation processes. Here extensive surveys have been made for some countries, such as the ones from Sierra Leone (Humphreys and Weinstein, 2004) and Mozambique (Weinstein, 2005) where the demographic information also sheds light on the population of child soldiers. From data about date of recruitment and age at demobilisation, estimates about child soldier ratios may be made, but serious sources of misrepresentation persists: The ex-combatants who join the official demobilisation are likely to differ from the ones who don't join in systematic ways, and the incentives to lie about age and date of recruitment are likely to be strong.

3. Child soldiers defined

The focus of the paper is the actual employment of children in violent organizations under war-like conditions. This gives the basis for the definitions of child soldiers applied here. Several will be presented. Whether the children are engaged in the purely military activities of these organizations or not is of secondary importance. An underlying question is why such organizations recruit *children*, that is, employ individuals before their technical and decision-making capabilities are fully developed and before their preferences are fixed. A definition of what a child is should ideally be given.

Age definitions The standard definition of a child soldier is the one formulated by UNICEF: "A child soldier" is any child – boy or girl – under 18 years of age, who is part of any kind of regular or irregular armed force or armed group in any capacity, including, but not limited to: cooks, porters, messengers, and anyone accompanying such groups other than family members."[8] This definition is operational and is the basis for most of the statistics that has been published in the area. Other age limits might have become equally operational, however, and to define a child as a person being below 15 years old may be closer to what most have in mind when thinking about have in mind.

Cultural definitions Shepler (2004) and other social anthropologists have insisted that a child and hence also a child soldier is a social construct, and should be defined differently in different societies. Persons in their early 30s may then become children for some purposes. For our comparative questions it is obviously difficult to stick to a definition of that kind here, however.

Psychological definitions should in principle be based upon the development of children's task-solving and decision-making capabilities as they develop with age. One attempt would be to define a **child** as any person who is undergoing fairly fast increase in task-solving abilities and predictable changes in broad preferences due to young age.

Economic definitions would focus on the ability of a person to accomplish economic tasks. If the unskilled labour input of a person only may cause net negative product due to low age, this person is certainly a child in the economic sense. This is certainly too restrictive and few children would be involved in economic activities and few would become soldiers if this

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8   This definition was adopted as part of the so-called "Cape Town principles" at a child soldier conference in South Africa in 1997 (Coalition to stop the use of child soldiers, 2003: 14).

was the only case – except for learning and systematic changes in prefer-ences.[9] Somewhat less restrictive we may consider unskilled labour input as characterized by children if it only yields positive net output in most task assignments if combined with an adult's (is a complementary factor). Only in a few task assignments may they substitute for adults.[10] The reason for this observation is probably that adult management is normally needed in order to assure child task completions. In the context of violent organizations this would translate to a hypothesis that the employment of a child would only result in a higher probability to win the contest if its efforts were com-bined with complementary adult input.

– Neither the psychological nor the economic definitions that both are rather tailor-made to the individual capabilities of the person in question, are hardly operational

The 'favela' definition[11] is, however, both tailor-made to the individual child in question and operational in principle. It is based on thorough screen-ing of potential child recruit the violent drug gangs in Rio have been able to perform – sharing the street with the children of the favela before a new child is recruited. A child according to this definition is any person too young to handle guns and contracts. That is, the gangs are not recruiting any children. The age when a child ends being a child, naturally varies with indi-vidual maturity, but most are recruited within the ages 12 to 14. This is also the age when children appear able to make individual decisions about

migration (Iversen, 2002, 2005). It is reasonable to assume that it is first at this age around early puberty that children become employed by violent organizations in any scale. Hence it may be more appropriate in quantitative terms to discuss child soldiering as an issue related to early adolescence than a child issue proper.[12]

4. Supply and demand for child soldiers in the long run. Rural background factors

Clausewitz once wrote that 'war is nothing but a continuation of political intercourse with the admixture of different means' (Clausewitz, 1976: 605). One could add social and economic intercourse. The war where children have become active soldiers is the typical war of today – 'a stalemated guer-rilla war confined to a rural periphery of a low-income, post-colonial state'

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9   Note that this may be the normal situation for the very young children. It is a separate issue how to explain why so young children may be demanded also by violent organiza-tions although their may reduce their immediate fighting. It is often these very young children the public may have in mind when considering child soldiering as an ethical is-sue. I will not analyse it here, however.

10 Estimating the children children's contributions within in a set of economic household models, they appear to be complementary factor even in situations where one expect sub-stitution effects to dominate, such as when the arrival of a girl foster child cause the adult, female labour input to increase (cf. Ainsworth, 1996)

11 This definition is based on Dowdney's (2003: 125) description of a local gang's screening of potential recruits. While less sophisticate a number of violent organization would not employ a child if it is not able at its first try is able to follow the group, carrying a heavy load. According to its level of brutality, it may either kill it or leave it behind.

12 In the one case where one has a fairly precise age distribution of the child soldiers (of Sierra Leone as described in Humphreys and Weinstein, 2004), but only an imprecise sta-tistical recording (ibid. figure 1, p. 14) it appears that about 1/3 of the child soldiers were below 15, and ½ 15 and below. The 15 years old group was exceptionally large, maybe due to the ease of remembering that age.

(Fearon, 2005). These are also areas where children are engaged in all kinds of adult economic activities – where they exist. In sub-Saharan Africa, the more rural a country is, the higher the child labour participation rates tend to be, as shown in the following figure:

Figure 0.Child labour participation rates and the rural population share, some African states
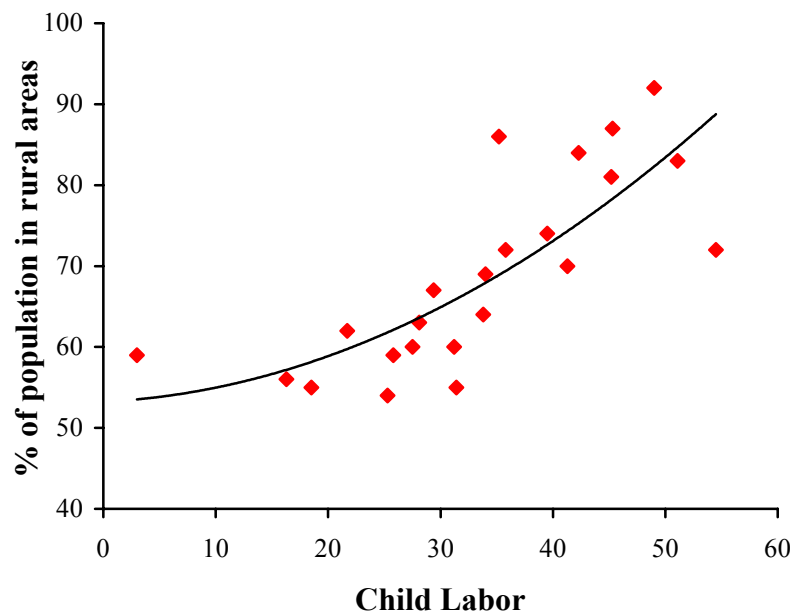
(Source: Andvig et al 2001).

Following this observation we should expect that the more children are involved in ordinary economic activities, the more likely they are to be engaged by a violent organization operating in the same area. For example, if children do a large share of the transport back and forth to the fields[13], they are more likely to be asked or ordered to carry food and weapons for a violent organization if that kind of organization arises in the neighbourhood. Child labour supply creates its own demand in the sense that the commanders of the violent organizations would rely on their own experience of the tasks children may accomplish in family contexts when recruiting them to their organization. Moreover, the organization itself will reflect some traditional ways of task allocation: The ways to cook, to get hold on water, to seek shelter, and so on. The more 'traditional' a violent organization does its activities, the more easily it may suck up children. Since girls are heavily involved in child labour of this kind – at least in an African context, we

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13 In a very detailed study of the children's economic activities in a traditional rural area of Zimbabwe Reynolds (1991: 55) documented that the children carried 40% of the harvest back home.

might expect the share of girls due to this mechanism to be even higher than for boys.

The number of girls is nevertheless lower in all known conflicts. Other structural features of the rural neighbourhoods may supply parts of the explanation. Reynolds (1991: 121) points to one structural possibility – boys have traditionally been encouraged to move and travel more than girls both for pleasure, for seeking patrons and keeping family networks alive. Violent organizations in general and rebel organizations in particular need to be mobile, to 'travel'. Hence, we may expect it might be easier for boys to join them from a traditional point of view and military commanders are natural patrons in times of war. Moreover, the violent activities themselves are potentially more appealing and easier to accommodate to the traditional roles of boys, of course. So the large share of boys may not be so surprising after all, even when we only look at mechanisms rooted in traditional rural environments.

I have argued that that the high general child economic participation rates in poor rural areas should make it 'natural' for the violent organizations operating in the same areas also to make extensive use of children too. Looking at these background features, could modern violent organizations rely directly on established traditions to recruit children, or is this a new development? In an African context this is disputed. Relying on a mixed set of evidence but emphasizing the Zulu organization for warfare, which has been carefully studied, Bennett (1998) denies it. He argues, for example, that children were neither physically strong enough nor sufficiently well trained to engage in the kind of warfare that the Zulus engaged in. His view is supported by Twum-Danso (2003). The implication is that the employment of children in warfare is a fairly recent development probably connected to the use of light and easy to use modern hand weapons. This is in any case mostly working from the demand side. The possible prestige and power youth and children may get access if they get access to weapon they are able to handle is mainly working through the supply side, however so the weapon characteristics may also have impact here.

Based on detailed observations from several long field stays, Shepler (2004) documents, however, how many of the specific ways children are employed in the violent organizations of present-day Sierra Leone can be traced back to traditional age group organizations, West African child foster-age traditions, secret societies, and so on. Moreover, she demonstrates that much of the killings performed by the children have been performed by machetes and other traditional weapons. Her presentation gives the most detailed description of how established social and economic forms may have impact on the violent organizations and generate prescriptions for how much and how children could be used.

In what sense may the established characteristics of the rural societies in which the violent organizations move explain the use of child soldiers? Firstly, as we have defined child soldiers, a conflict is presupposed.[14] The fact that violent organizations mostly operate in rural neighbourhoods, does not imply that the more rural a country is, the more conflict prone it will be.

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14 Seen from a normative point of view its paradoxical (and revolting) that children in most cases are accepted by military organizations when actual killing is on the agenda.

We may not expect any clear quantitative pattern to be determined, making the number of child soldiers a direct, positive function of child labour in general.[15]

What the extensive economic participation of children in rural areas do explain in the wide sense, however, is that children are more likely to become objects of choice, potential recruits for military commanders, when the latter from their own experience are used to see children do the household and farming tasks. This is reinforced by the tendency of the violent organizations to copy many of the aspects of the dominant way to organize economic activities in their neighbourhoods, family-types of organization. The most visible manifestation of the copying of family-based organization is a tendency of the male commanders (and often also soldiers) to acquire "wives" in many of the conflicts, but not all.[16]

While we in the following are going to look at forces of demand and supply as crucial in determining the number and age composition of the armed forces operating in an area, demand specified for a given set of violent organizations, it is obvious that these organizations themselves are endogenous to the characteristics of these area. That, is most of the factors that may determine the short run supply of child soldiers, may cause the long run demand. Without a conflict of the Fearon-type, (almost) no child soldiers would emerge.

If we look at the whole class of countries, we are likely to find the same factors that determine the probability of a conflict occurring, such as GDP per capita, will also influence the occurrence and number of child soldiers. Given that a conflict has occurred and a number of violent organization arisen, we may believe that the resulting short run demand may reflect quite different forces than supply.

5. The wide variation in child/adult participation rates: Measuring error or a significant research issue?

But given that a conflict has occurred, what will determine the child participation rate in the violent organizations? If we are going to be able to explain the actual number of child soldiers in any given conflict, we would need more specific mechanisms. The dramatic variation in child/adult soldier ratios even for a number of African conflicts all taking place in countries

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15   We will later study the connections between farm labour and soldiering for children living in conflict areas. I suspect that the most important empirical result from the child labour reports are the estimates for the share of children who are 'neither in school nor performing economic activity'. Alas, we don't have numbers here for any conflict country, but child unemployment is clearly a serious issue for at least many African countries. In Cameroon, for example, more than 25% of children are 'idle' (Biggeri et al (2003): 4).

16   The outcome of this practice is frequently very harmful to the young women or girls who often are abducted by force and exposed to various forms of sexual violence. The effects of society-wide norms that allow or prescribes early sexual unions get perverted when embedded in organizations tha rely on force. Forced recruitment of girls may cause an increase in the voluntary supply of boys, however, particularly in many of the African countries where the traditional marriage 'markets' have broken down often due to increased scarcity of land, This illustrates how the surrounding social and economic institutions have impact on the forms of violence – and maybe also in this case contributes as a cause. In this article I have chosen not to analyse the gender aspects of the supply and demand for child soldiers systematically, however.

dominated by poor, rural populations is reflected in the following table (borrowed from Reich and Achvarina (2005: 16)[17] :

Table 1: Child soldier participation in some African conflicts

Country and conflict	Number of combatants	Number of child soldiers	Child soldier ratio
Angola (1975–94)	194,000	8,000	4 %
Burundi (1992–93)	50,000	5,000	10 %
Uganda (1994–2002)	74,000	16,000	22 %
Sierra Leone(1991–2000)	45,000	10,000	22 %
Rwanda (1990–1995)	70,000	17,500	25 %
Angola (1996–2002)	72,500	20,000	28 %
DRC (1996–2001)	72,000	20,000	28 %
Mozambique (1976–92)18	92,900	25,500	28 %
Liberia (1989–95)	60,000	17,500	29 %
Burundi (1995–99)	45,000	14,000	31 %
Sudan (1993–2002)	40,000	15,700	39 %
Liberia (2000–02)	40,000	21,000	53 %

Reinforcing the impression of a wide variation in the child soldier ratios seven conflicts took place without any registered child soldiers at all (in Senegal, Mali, Lesotho, Niger and the Central African Republic), according to Reich and Achvarina (2004). [19] How may such large variation be explained?[20] It is obvious that the child participation rate would have to be studied together with adult participation rate.

An obvious explanation is that measuring errors are likely to be large and frequent, and the participation rate is a fraction of two numbers both with large margins of error. For example, if the margins of error are 10 000 children when we believe the total number to be 16 000 (Uganda) and the total error for all soldiers to be 10%, then the participation rate for Uganda may vary between about 7.5% and 40%. To explore this possibility further we would go deeply into the empirical work foundation of the child soldier statistics. Here this work will be postponed for a later paper. Here I will focus more on theoretical possibilities.

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17 I have made some minor changes due to a printing error in the original
18 Weinstein (2005: 613) mentions 27.4% child soldiers in Mozambique (23.3% in the government forces and 40.7% for Renamo).
19 Reich and Achvarina (2004) report that from their dataset of 61 intra-state conflicts where child soldiers could possibly be used, 26 had for certain applied children extensively, while 7 had not applied any at all, and the rest only to a small degree. Some of their cases are possibly misclassified, such as the one from in Ethiopia. They claim that in the last civil war children were only used to a minor extent, where children were probably extensively used. Some experts believe otherwise. I have been told that the average age of the victories rebel army when it marched into Addis Ababa in 1991 was 17 years. Demobilisation data about the age distribution exist, but are not as far as I know yet public.
20 The simplest answer would be that the variation is due to defects in the data collection. For example, there might have been different incentives for soldiers to register as children or adults in the different demobilisations that have followed in the wake of the conflicts. Many of the data on child soldier ratios are collected from demobilisations. Here I cannot dig deeply enough into the data collection processes to really scrutinize this possibility, and I will disregard it in most of the following. Nevertheless, after having discussed most of the other possibilities, it re-emerges as the most plausible explanation.

One such possibility is the rough economics hypothesis that a substantial variation in the number of child soldiers could be 'caused' (or rather characterised) by a steep supply curve child soldiers. This could be the case for example if the supply of child or adult soldiering from the households were close substitutes. Hence a small shift in relative rewards might cause a steep increase in the number of children employed. Moreover a positive shift in demand due to the exigencies of war may cause a substantial increase in numbers. Commanders views regarding the ethics of employing children may work the same way. These possibilities can be illustrate in a simple (partial) supply –demand diagram:

Figure 1: Case of steep supply of child soldiers
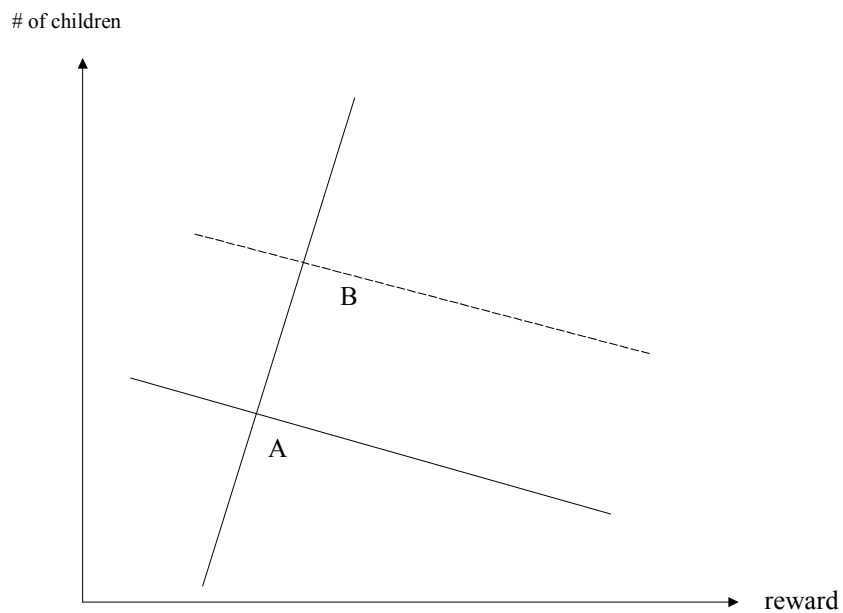
On the vertical axis we have the number of child soldiers, in the horizontal axis the rewards the children expect to receive by joining,. The rewards may either be economic or a mixture or a mixture of economic or non-economic.[21] If no forced recruitment takes places a new equilibrium number of children move from A to B.

Alternatively we might have steep demand curves, as drawn in figure 2. One way to legitimise that would be to have if mainly determined by the military situation, hence being fairly insensitive to costs. Another would be to assume that child and adult soldiering has a high elasticity of substitution in the conflicts considered. We will return to the matter when discussing the children's capabilities.

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21 To draw it this way some of the rewards the children get must represent costs for the organizations. This is obviously case when the organizations contribute income or finance their consumption baskets. In the imagined case with purely ideological motivation, both demand and supply should increase with increasing 'rewards'.

Figure 2: Steep demand curve for child soldiers

# of children

reward
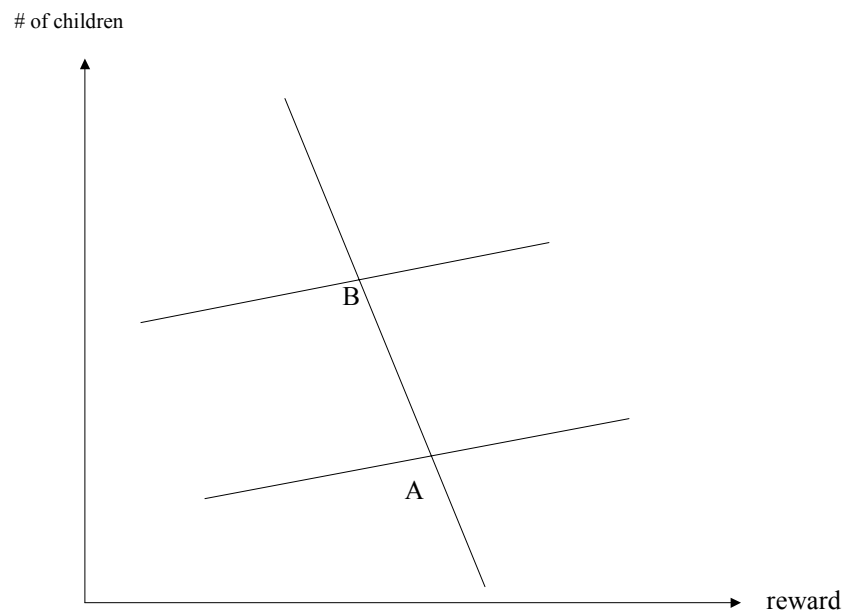
The shift in supply may then be explained when we consider that child soldiering is an ethically sensitive issue in most circumstances. Hence, variation in whether the communities find the use of children in violent tasks ethically justifiable or not, may cause shifts in the supply.

The cases of steep demand or supply curves are just a way to get a brief overview of alternative directions in which we may look for explanations when we are looking partially at the 'market' for child soldiering, assuming that it clears. To gain any insight we have, of course, to dig further into factors that may explain the forces working at the demand and supply side, not only look at the children in isolation, and we would have to look a the causes and consequences of forced recruitment..

An obvious way to structure the discussion is to look at the characteristics of 1) the *area* in which the children are recruited, 2) the characteristics of the *violent organizations* involved 3) their mutual *competition* (asymmetric or symmetric force levels, the scale of the military operations) and 4) the modes of *interaction* between the organizations and the recruitment areas, including their recruitment methods. In the following 1) and 2) will be emphasized while 3) and 4) will only be briefly analysed.

6. 'Supply' of child soldiers in the short run

Since the use of force is an important method in the recruitment of child soldiers, the notion of supply may sometimes only have meaning in a metaphorical sense. Nevertheless, it makes sense to distinguish between the considerations the leadership of a violent organization is making when deciding upon their forced recruitment activities, as part of their 'demand' for child soldiers, and the characteristics of the population and area in which it operates, as causing the 'supply'. These supply factors make it more or less

costly or difficult to recruit by force. The choice of recruitment method may also influence the quality of the recruits including their age.

Since a large share of child soldiers are recruited by force, we will also look at factors in the conflict area that may determine the ease by which children may be caught compared to the adults, but we will first look at voluntary supply of child soldiers vs. their forced recruitment. Within the category of voluntary supply we should distinguish between economically motivated and ideologically (identity, politically) motivated supply.

Supply characteristics of forced recruitment. The analogy of fishing and fishing grounds may prove helpful: The density of fish may be uneven across fishing grounds; the different species and sub-species may be more or less easy to catch, that easiness may vary across grounds, be influenced by the interaction of the species, the efficiency of the equipment, and so on. While both children and adults may be recruited by force, as stated before, I expect children in general to be more easy to catch due to their lower mobility and other child characteristics whatever the nature of the catchment area. The 'sub-species' of orphaned children appear for some unclear reasons easier and children with secondary education more difficult to catch than the child average.[22] How much easier may vary across grounds.

In certain situations children who attend a secondary school may be collected in one sweep yielding increasing return, while the adults may be spread out working on their fields.[23] Other good fishing grounds are refugee camps where the organization either has easy access or effective control. Here we expect both adults and children to be easy to collect.[24] On the other hand, if the camps are effectively controlled by an international organization, refugee camps become very bad fishing grounds.

In general we will expect that military organizations use more forced recruitment (that is abductions not drafts) when recruiting in areas in which they have no control and far away from its base areas. Again because of lower mobility, children would be relatively more exposed.

If potential recruits are located in a rural village that has become surrounded by the forces of the organization, adults and children may be about equally difficult to catch. The existence of a nearby forest may make it more difficult to collect both children and adults – when the organization is in control. If not, it may be the other way around, since it makes it easier for member of the violent organization to hide. And so we could go on.

Not all recruitment is forced, however. While the data about child soldiers will not allow any definite opinion, it appears that the majority of child soldiers arrive by either their own or their families' choice. The Renamo

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22 Data reported in Weinstein (2005) indicate that Renamo recruited 90% of its soldiers by force, and had very high fraction of child soldiers with exceptionally low education levels.

23 Richards (1996) notes some cases where children were collected that way in Sierra Leone. Becker (2004) reports that many children did not dare to attend secondary schools in Sri Lanka during a peace period in order not to be reenlisted. This possibility may explain why the school attendance drops so steeply in many of the relevant conflict areas. While not randomly drawn, it may be telling that about half of the recruited children in Congo (ILO/IPEC, 2003: 55) had been living without any parent while only a quarter of the non-recruited control group did so.

24 It is then surprising that Reich and Achvarina (2004) find refugee camps where the violent organizations have access to be the most significant factor in explaining high child soldier *ratios*.

case of 90% forced recruitment (if true) is probably an exception. In the study of the child soldiers from the Central African countries 64% told that they joined voluntarily while 36% had been forced (ILO/IPEC (2003: 26). Partly different mechanisms may determine voluntary supply and forced recruitment. The following figure gives an overview of some of the major possibilities:

Figure 3: Soldier supply mechanisms
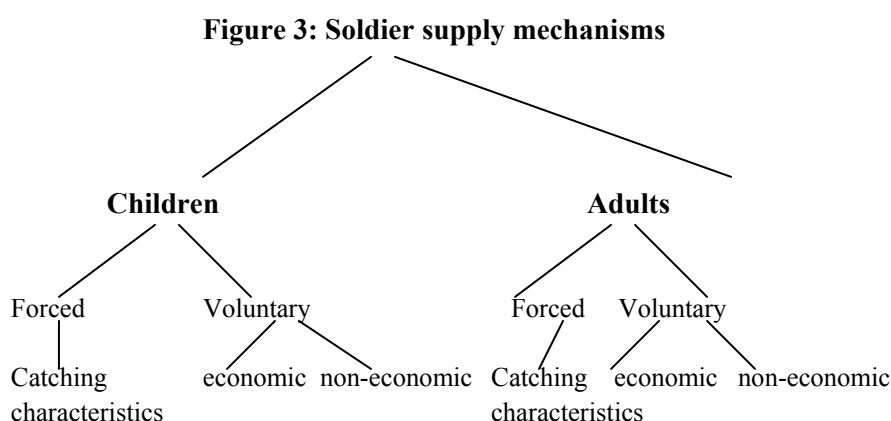
Voluntary, economically-motivated supply. As mentioned, we expect that in areas where families employ their children extensively in their regular economic activities they will also be more willing to let their children join military units, but the family way of organizing also create spill-over effects between the adult and child supply of soldiering that may make the guardians less willing to let their children go.

Child soldiering vs. child farming – Assume that an economically motivated adult joins a violent organization and expects to receive higher income as a soldier, which he normally shares with his family. The income effect here will tend to increase the children's leisure (if that is a normal good) or time spent only on schooling. The adult is obviously less able to farm as a soldier. Hence, if adult labour and child labour on the farm are complementary, that is, if the marginal productivity of child labour goes down when less adult labour is spent, the child will spend even less time on the farm. The effects on child soldiering will probably negative, but weaker than if child and adult farm work are substitutes. The disappearance of the adult will in this case induces more child work on the farm: The alternative cost of child soldiering increases at the same time as the income effects from the adult soldiers also reduce the incentive. The incentive to become a child soldier is clearly reduced. Child and adult soldiering become substitutes. The case of a well-paid mercenary who obediently sends his salary back home, is fairly rare, to put it mildly, but useful as a conceptual experiment.. More common may be the forced recruitment of an adult who is unable or unwilling to send any income back home. If child and adult farm labour are substitutes the effect on child soldiering will be indefinite since the income and farm productivity effects are working in opposite directions. If child and adult labour are complementary, however, the effects will both work in the direction of increasing the push towards child soldiering.

What are the facts? Scattered evidence (see for example Ainsworth, 1996) suggests that technical complementary between adult and child labour is surprisingly in evidence in child fostering even when it is not to be expected for fairly old children. As already suggested during the discussion of the definition of a child, theoretical considerations will tend us to believe that while the labour of young children should be complementary to adult labour,[25] older children's work should be substitutes. If so, forced recruitment of non-paid adult soldiers should induce particularly the supply of young child soldiers since they can not work on the farm on their own.

The economic effects of the war itself on the income of farmers are likely to have strong effects on the voluntary, economically motivated supply of both child and adult soldiers. Sometimes the war may increase the value of farm products and increase the supply of both adult and child farm labour, and therefore also decrease the voluntary supply of soldiers. In most cases, however, the war has negative effects on income and may disrupt production. When the effects of random taxation (or looting) of the war also are taken into account, the expected income of soldiering compared to farming increases and both the supply of economically motivated child and adult soldiering should increase. Since the average income is also likely to be reduced under the circumstances, and with altruistic parents, the supply of child soldiers would have to increase more steeply.

Rough considerations of the empirical realism of the different situations outlined here make me expect economically motivated supply of child and adult soldiers to move in the same direction (and therefore the child/adult fraction to be indeterminate) in the empirically more likely cases above.

That is, if we disregard the effects of uneven landownership. A number of studies have shown that in rural areas with widely different family structures, such as in Pakistan and Ghana (Bhalotra and Heady, 2003) children with guardians who manage larger farms also supply more labour on the farm. Hence, the alternative cost of sending children into fighting, are higher for the somewhat richer parents. In addition comes the income effect so we will expect child soldiers, if voluntarily supplied, will come from land (and income) poor families. At this point of research where we mainly explore possibilities, the exact way the adult and child supply interacts does not matter so much, however, but it is of interest that such interaction is likely to be so strong that the economically motivated supply of child soldiers should be studied together with the supply of adult warriors.

When we bring landownership into consideration, new and more realistic possibilities arise that the supply of child and adult soldiers may move in opposite directions. For example, in areas of land scarcity children – against established traditions – may not get access to sufficient plots of land, they become 'idling' (Biggeri et al, 2003). When a war arises, children may go into soldiering while the adults have an additional incentive to stay put in

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25 The reason for this expectation is simply that at least younger children will need adult management for many of the relevant tasks.

order to keep control of land. War may make their land more easily contestable.[26]

Youth unemployment in the cities should have similar effects as land scarcity, although here we may have less close interaction between the supply of child and adult soldiering. Areas where many families cannot afford their children to go to school, and areas where the school infrastructure is less well developed should also have a higher propensity to supply. Hence the size of the stock of so-called *idle* children, particularly the male one, should increase the propensity to supply. A group of idle children that appears to have an exceptionally high propensity to join are children in disorganized refugee camps.[27]

At the individual level I will expect children *who have to fend for themselves* either because of deaths of their guardians or broken family structures as more likely to be attracted by violent organizations, particularly when they supply regular family-like consumption services. In particular, it is well documented that violent conflicts inside the family has a strong push effect on the child to migrate out (Iversen, 2002). If there are systematic differences between areas in these respects, their supply rate of child soldiers should also differ.

A strong pull effect on children to move out is the number of friends already migrated (V. Iversen, 2002). Hence, we may expect that the *number of children already recruited* in the neighbourhood by the armed forces will increase the present voluntary supply of children. Several verbal accounts from Sierra Leone note how this network creation may have been stimulated by local commanders.

The *length and intensity of the conflict* in the area may also increase the economic motivation of both the children and their families. Increased length will reduce the economic values of regular alternatives, increase the death risks of staying civilian[28] and make the knowledge of military skills a long-time economic asset. It will disrupt families and increase the number of children who need to fend for themselves. At the more positive end, networks between children and members of the violent organisation will develop, and lead to the same result: An increase in the voluntary supply.[29] On the other

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26 In many areas of Africa individual rights to land are often at the same time conditional on group rights. Hence, collective actions such as wars should be more easy to organize without such links between individual and group ownership. Moreover, the individual ownership may be contested by collective decisions. Under conflicts the incentive to stay on contestable land increases (as well as the incentives to frighten off or kill the owners increase under such rules. André and Platteau (1998) document the extremely antagonistic relationships that may arise across generations. During their study of the dynamics of landownership in a Hutu village in Rwanda, the 1994 massacre occurred. Several of the youth in the village used the occasion to kill some older, mostly male landowners, although they were all Hutu.

27 Such refugee camps are probably more important for the recruitment of child soldiers as good fishing grounds for forced recruitment of children. The case of these camps indicates that it is difficult to tell in any particular case without fine-grained local knowledge whether a high number of child soldier is caused by forced recruitment or voluntary supply. Area properties that stimulate voluntary supply also tend to make for the easy catch.

28 Empirical studies of the death risks in different conflicts indicate that the objective risks are much higher when joining a military organization than when staying outside (reference?). Nevertheless, having joined and received a weapon, the individual may feel more secure, and the perceived risks of remaining civilian may be higher, much like the fears of flying may be more intense compared to own driving (cf. Kuran and Sunstein, 1999).

29 The ILO/IPEC Central Africa study (2003) observes: "Among all the factors that influence the child's decision to join, mixing with members of an armed group seems the most

hand the stock of potential recruits may dry up in a faster rate as they gain violent employment or is reduced through out-migration. Hence, we may not always observe any increase in voluntary supply in absolute numbers. In any case this dynamics should cause an increase the child soldier ratio since the stock of potential adult recruits should dry out faster. The effect may induce the military organization to turn to forced recruitment where, as noted, other considerations may determine the choice.

At the individual level, the *age* of the child is, of course, the strongest explanatory variable, but not likely to be of equally important at the area level except when the risky age cohorts constitute exceptionally high shares of the population.[30] Older children are more likely to volunteer and to be considered responsible for their own economic survival.

Estimates of the economic (but therefore also the expected) *military success rate* of the organization to join will have to be gauged. When joining, the economic rewards for its ordinary members, the ease of promotion, harshness of discipline, the difficulty in exiting, etc. have to be considered. Declining military success weakens the economic incentives to enter and increases the ones to exit, which is one of the reasons why collective action problems are so severe in commercially motivate armed groups.

The **supply of ideologically motivated child soldiers**[31] would be influenced by some of the same factors as the economically motivated ones, such as the existence of networks into the armed forces, friendship with soldiers and so on. The increase in numbers stimulated by a violent conflict itself will work in the same direction, but more through motives of revenge than poverty.[32] Many of the grievances are economic, however, and it may be difficult to tell whether a child joins in order to further its own economic interest or its group's interest – in case they win. Nevertheless, its family and itself will normally share the grievance or ideological concerns so in the case of grievance motivation we should expect the child and adult supply to be complementary: Increased voluntary supply of adults should increase the supply of children who want to join, as we will see in the Mindanao case. It is possible that the actual number of children may decrease, however, since adults may block the entry of children out of altruism. The specifics of the ideology may become important for determining the access and the number children of the violent organization.[33]

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important. This was not specifically included in the questionnaire, but an analysis of the testimonies reveals that a large number of children decided to join an armed group after being in contact with its members (ibid: 35)." This effect presupposes that the military group has some local support and not representing a hostile military occupation.

30 Urdal (2004) finds support for the proposition that youth 'bulges' increase the likelihood of violent conflicts. Presumably, a number of youth s and younger children should join the violent organizations if direct effects of a youth bulge are to be found. Urdal makes the interesting observation that the opportunity to migrate acts a safety valve.

31 Recently Guichaoua (2006) having studied some Nigerian violent organizations, has argued convincingly that the dualistic motive structure applied here is somewhat simplistic and that fear plays a more important role for recruitment than accounted for here. His cases are also more urban-based than the ones I have discussed.

32 Ten per cent of the children in the ILO/IPEC (2003) survey told that revenge was their main motive for joining. The overall importance of having war in the neighbourhood for voluntary and forced recruitment of children combined is illustrated by the fact that among the Central African children who had been recruited, almost eighty per cent had experienced combat in their neighbourhoods while only twenty per cent of the control group – who had never been recruited – had experienced the same (ibid.).

33 The use of children by Iran in the Iraq-Iran war is a famous case that illustrates the point.

7. Violent organizations tactical aims and their demand for children

The guiding aims of violent organizations (not necessarily its professed ones) are of course important for its behaviour, including its reasons for recruiting children and their ways of treating them. The relevant aims may be classified in different ways. We may, for example distinguish between the strategic, or long-run, and tactical or short run aims of the organization, which may be combined in different ways. One possible classification is the following:

Table 2. Strategic and tactical aims of violent organizations

Strategic *Tactical*	*Commercial (Greed)*	*Political (Grievance)*	*Pleasure of fighting (religious)*
Win contests			
Avoid detection			
Detect enemy			

I will return to the strategic greed and grievance aims. Since I will not study the third 'strategic' aim any further, let me just in passing mention that it intends to cover the religious mystical (as the LRA in Uganda, Veale and Stavrou, 2003, 27), and the expressive violent (as some groups in Sierra Leone are believed to be).[34]

The points here is that the different tactical aims may be combined with most of the strategic aims. The usefulness of children may differ according to the effective mix of strategic and tactical aims of the organization. Let us look at the tactical aim of winning a contest. This will obviously be a relevant tactical aim for any strategic aim.[35] The study of the behavioural consequences of the aim reflected in so-called contest functions has received large attention in the analytical literature (Hirshleifer, 2000). The idea is that each contestant's probability of winning reflects the share the organization spends in the contest compared to the aggregate resources spent by all contestants.

Since every organization operates under some form of financial constraint, the organization should only substitute children for adults if they are cost-effective. A key assumption here is, of course, that children and adults are substitutes. The single theoretical discussion of the recruitment of child soldiers I am aware of is Gates (2004) who develops this idea by means of a principal agent model.[36] Put simply, agents of a military organization (that is

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34 This motivation may become rather perverse, but it is a reality that military fighting might be experienced as exciting, particularly when the most likely alternatives are either boring idleness or drudgery. In the well-known Viking heaven, Valhalla, the chosen men would fight the whole day while their wounds and pain were healed during the night. When asked why they became soldiers 15 % of the children selected for interviews in DRC, Congo and Rwanda who had joined one of their violent organization, told that fascination with the military was their main reason (ILO/IPEC, 2003: 29).

35 Regarding a complete war as a contest, it is essential for most politically motivated organizations to win such contests, but while it may also be more lucrative for economically motivated organizations to win whole wars (and government power, cf. Mehlum and Moene, 2006) it is less essential.

36 A principal agent model constructs a form of micro foundation for a contest success function.

soldiers) when recruited on a voluntary basis, have to receive sufficient utility by joining that they don't run away (the participation restraint). Furthermore the leadership must be able to find a way to reward the soldiers so that they choose to act in a way that will produce the maximum increase of the probability of winning with the lowest financial costs (incentive compatibility constraint). Hence the leadership may employ children if they are sufficiently cheap to compensate for their (potentially) lower military efficiency.

This might happen either because the children's alternative outside is sufficiently bad so they will accept a lower compensation in order to join (and stay) or they are easier to monitor so less resources are needed (including the positive economic rewards) for them not to shirk. The model is easier to interpret if we assume the children to be decision-makers themselves, although it possible to let them be family-controlled when determining their participation constraints. It is difficult to see how the model may handle recruitment by force, however.

The predictions of the model appear reasonable: i) more children will be recruited if their military efficiency increases relative to the adults', ii) if the children's income possibilities outside the organization decline compared to the adults' outside possibilities, (for example, increasing land scarcity may block the children's access to land while adults may remain holding the land[37]), or if for some reason iii) the relative cost of monitoring children compared to adult decreases. This will happen, for example, if the fighting is moving further away from the soldier's homestead, since children have lower geographical mobility. The difference will naturally be larger for younger children. Moreover, if child soldiers are added to a contest function, they are by implication (when properly weighed for their lower efficiency) perfect substitutes for adults. Hence, a wide variation in its adult/child composition would not be surprising, for example caused by shifts in their respective participation restraints.

More recently some dissatisfaction with contest functions has been expressed, however. If the major aim of violent organizations is to win contests, why are many rebel organizations so small that they are likely to win only the smallest local ones? This observation have made some students (e.g. Fearon, 2005, Weinstein, 2005) to propose the different tactical aims in asymmetric warfare of avoiding detection /detect the enemy as the guiding ones. Fearon (2005) in particular has used the idea that it is much easier to detect a large than a small organization to explain the small scale of most rebel organizations. It is also a striking, stylised fact that rebel organizations apply much more child soldiers than the larger government organizations.[38] Will an organization who employ many children be more difficult to detect? It is difficult to see, however, that the use of children as such makes any dif-

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37 Cf André and Platteau (1998) who happened to collect land tenure data from a Hutu village just before the genocide, could demonstrate that adolescents were receiving very little land (against established traditions) while older land-holding males were over-represented among the villagers killed. Richards (1996) also notes that an important reason for the recruitment of youths to rebel organizations in Sierra Leone was their lack of access to land (although absolute scarcity of land was less pronounced than in Rwanda).

38 This has often been explained by the fact that governments are more strongly exposed to international political pressure, which is, of course a contributing factor. Governments are, however, also, using their own small-scale organizations, militias, that also frequently use child soldiers extensively. They are also in other ways allowed to violate international norms about warfare.

ference, although children are often, according to considerable anecdotal evidence used in the collection of evidence (i.e. as spies) and as messengers (cf. the origin of the Boy Scout organization in the Boer war). It is also possible that simulation of the prevalent family ways of organizing, as they have both adult, boy and girl soldiers, may give rebel organizations an informational edge, making it easier to hide in rural populations. I have not found this argument made in the descriptive literature, however.

8. Greed vs. grievance motivation and the welfare of child soldiers

A dominant theme in conflict research the last decade or so has been the role of economic factors in causing violent conflicts. The ease by which rebellions may be organized and financed has been emphasized and appeared to have had the strongest explanatory power in n-country regression research into the causes of the rise of violent (non-government) organizations. This empirical result combined with a growth of a large number of interesting economic models that study the economic aspects of violent organizations have led many researchers to doubt their professed political grievances as a cause for many of the violent organizations and impute some greed motives to them instead. As pointed out in Collier et al (2003) grievances may, however, have easier outlet in other forms of organizations than violent ones.

But even if a violent organization would not have come into being without access to finance (such as diamonds) it does not imply that it is without interest whether its real strategic aim is to improve its members' (or leadership's) economic well-being directly (greed) or not. That is, if the major aim is to bring about an expected general increase of well-being of the population due to its gaining political power, i.e. the aim is an ideological-political one. The individual sacrifices would then expect to be larger than the final individual gain, so some form of altruism is implied.

While some of the data are anecdotal, a number of qualitative data suggests that a greed organization often behaves quite differently from a grievance one. It is not always easy to distinguish sharply between them one the basis of quantitative observations since the relevant clues are not normally recorded. They will appear quite similar since most economically and ideologically motivated violent organizations will fight in similar surroundings, sometimes killing civilians, engaging in the "stalemated guerrilla war" as analysed by Fearon (2005). Poverty will be a motive for joining in either case. Why then distinguish between them?

Humpreys and Weinstein (2004, 2005) have made a systematic quantitative, investigation of a number of violent organizations in Sierra Leone that documents that the organizations working closer to the commercial end of the spectrum in the civil wars of the 1990s also behaved in a systematically different manner than the ones with non-commercial aims.[39] They found that

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39 In this case it might be misleading to designate the non-commercial organizations as ideological. They were more oriented towards defending local security. While the commercial organizations may expected to have many shared characteristics the behaviour of what I have termed ideological should vary more both because they may not be strictly ideological; and if ideological, the nature of the ideology may differ substantially ranging from

violent (sub-)organizations that were "more ethically fragmented, use material incentives, have weak social capital and lack mechanisms for punishing indiscipline" (Humphreys and Weinstein, 2005:1) also performed higher levels of abuse of civilians and killed more of them.[40]

Does this observation have any relevance to research about child soldiering? – While their research is based on a systematic study of a sample of ex-combatants in Sierra Leone, we may observe some analogous pattern in the treatment of child soldiers based on two of the more reliable studies of child soldier experiences available. One surveys child soldiers in an Islamist guerrilla in Mindanao in the Philippines (Cagoco-Guiam, 2002), the other a number of violent organizations in Central Africa with respondents from Congo, DRC, Burundi and Rwanda (ILO/IPEC, 2003).

Among the child soldiers from three of the Central African countries (Congo, DRC and Rwanda) the largest group answered that economic reasons were ones they had for joining, 34 %, while only 21% indicated ideological reasons as the main driver. Among the Islamist child soldiers from the Philippines, on the other hand, 90 % told about ideological reasons while none mentioned material needs. Another interesting contrast is that while 5% of the Filipino children told that being together with their father was an incentive for joining, 11% of the Central African children told that they joined in order to leave their families.

Furthermore, while the study on Central Africa did not ask in systematic way about the punishment the children were exposed to in case they disobeyed, a regime of harsh punishment and fear among the children evidently prevailed. Fear was both a cause for staying as well for joining.[41] When the children from Mindanao, on the other hand were asked what happened if they did not follow orders, 62% told that nothing would happen. Their participation was voluntary. The atmosphere appears strikingly different as does the welfare of the children who joined.

Since the children who joined the Mindanao movement could stay in their home area most of the time, they did not lose the contact with their family and could also even (with some interruptions) continue their studies at school. The data referred to above is about the motivation of the children, not the motives of the leadership of the organizations, however. In this case anecdotal evidence indicates that also the leaderships of the organizations in Central African countries have been at the commercial while the Islamist rebel movement in Mindanao have been at the ideological end of the spectrum.

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well-controlled Marxist and Islamist groups in the Philippines to the violent religious mysticism of Kony's Lord Resistance Army in Northern Uganda.

40 Hovil and Werker (2005) describe a failed rebellion and ascribe an excessive use of violence directed against civilians by the rebel organization as being related to economic motivation. In this case it was the need to signal efforts to an external sponsor that stimulated a seemingly non-rational use of violence. The assertion about higher level of violence noted among commercial organizations applies only in the context of guerrilla wars where the civilians are part of its constituency. There are exceptions such as Iraq. Specific ideologies may, of course, even stimulate the killing of non-constituent civilians beyond the point done by any commercial organization.

41 Nine percent joined because of fear. When the author asked one of the scientific advisors of the ILO/IPEC study from Central Africa, Jon Pedersen (March 7, 2006) why they had not asked their child soldiers (ex- and present) about what kind of punishment they had received when they were disobedient, he told that it made no point since it was common knowledge that disobedience implied death (hence no one to ask).

Not all difference in child welfare should be ascribed to the strategic commercial vs. non-commercial motivation of the leadership in the violent organizations. Organizations that keep its violent activities more localized to the homestead of its members tend to treat their child soldiers better (cf. the Mindanao and possibly the Sierra Leone case).

Sanín (2006) by contrasting the use of child soldiers in the FARC (Marxist oriented, mostly ideological) and profit-oriented government-supporting paramilitaries points to the harsher discipline and the greater difficulty of exiting in the former, modifies the picture of lower child welfare in commercial organizations. While FARC (possibly) is an organization for upwards collective mobility for poor peasants, the paramilitary is an organization for upwards individual mobility for poor peasant (surviving) children. The difficulty of exiting FARC opens up for the application of more extensive use of force as an individual incentive, when joined, and lower child welfare. This modifies our initial hypothesis about the relationship between child welfare and leadership motivation based on the studies from Mindanao and Central Africa.

Weinstein (2005) has been looking into the two types of leadership motivation and asks how they may arise and be sustained. He points out that if a rebel movement initially has access to large economic endowments (easy looting, control of diamonds, and so on) compared to social endowments (shared identities, and ideology, social networks) it may drive out political altruism in the organization, a kind of rebellion's natural resource curse.[42] It is not the ambition here to explain the motivational dynamics of violent organizations as such, however, but rather to explore whether such dynamics may cause systematic change in the share and method of recruitment of the child soldiers, and their treatment over time.

In order to do so we have to look more closely into the application of force as a selective incentive. A violent organization must produce violence as a major part of its 'output'. When the violence apparatus is already there, it is tempting to apply it for other purposes. It may be used for both for recruitment of soldiers and as a (negative) incentive for controlling the behaviour of the members after recruitment. It is selective in the sense that it is meted out to individuals, but it has also important spill-over effects by creating general fear either among members or the population at large. While the spill-over effects may reinforce the original selective effects they are obviously imprecise. The fear may make soldiers more obedient or make them desert.[43] Fear may break resistance against recruitment or increase the efforts

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42 Some may also do re-switching as the Palestinian PDFLP, that has gone from political to commercial and back to political again. Some may have a political aim in its base area and commercial outside (government forces of Rwanda? Zimbabwe?) The same organisation may switch aims as FARC in Columbia probably has done in some areas -, going from political to commercial aims.: As pointed out by Hirschman (1982) this is something to be expected as a regular development since altruism is difficult to sustain in the long run. Note also that this points to a mechanism where grievance as a cause may cause greed-motivated organizations.

43 As pointed out in Wiles (1977: 15 - 16) to make threats of force to work there must be some form of restraint on physical mobility. In a military organization operating in an area where control is unclear or divided, it is much easier to run away than it is from a jail or an area under strict control. The lack of mobility of young children may make force more efficient in their case. The many stories about children who have to perform abhorrent public killing against and in front of former neighbours is obviously a way to restrain

of potential recruits to hide. Children may respond differently than adults both to forced recruitment and to the internal force spill-overs.

A violent organization needs to consider both the effects of any given mix of incentives and recruitment mechanisms when choosing its child soldier ratio. Greed and grievance organizations are likely to demand children for different reasons and to treat them differently after they have joined. Here we have a large number of possibilities. Some may be recorded in the following typology:

Figure 4: Violent organisations – demand mechanisms

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                          Economic motivation                    ideological motivation

          forced          voluntary              forced              voluntary
        recruitment      recruitment           recruitment          recruitment

      children adults   children adults      children adults      children adults

      F I E   F I E     F I E      F I E      F I E    F I E      F I E   F I E
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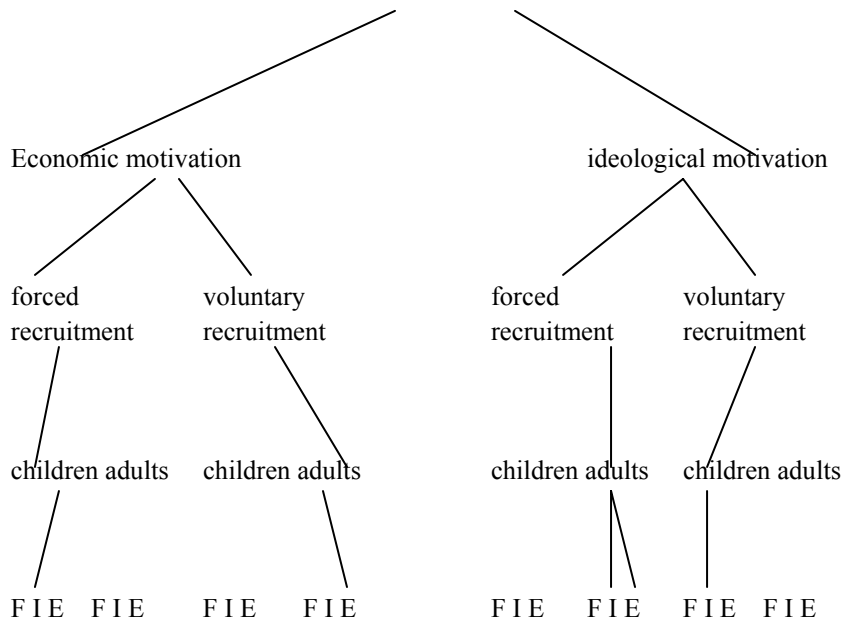
Figure 4 presents two specific modes of recruitment for new members who may be either adults or children. The two forms of leadership motivation define the two main types of violent organizations. Members are kept attached to the organization through three forms of incentives; force, ideological (or intrinsic) motivation and economic incentives. The typology outlines a number of different configurations that may characterize their demand for child and adult soldiers.[44] In the lowest line is given the different form of incentives presented to the soldiers: **F** stands for force incentives, **I** for ideological incentives and **E** for economic ones.

As we have outlined in figure 4 all forms of incentives may in principle be present at the soldier level whatever the forms of leadership motivation. When force is applied in recruitment, force will, of course be one of the in-

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mobility artificially. Mutual monitoring induced by the shared negative consequences of desertion is a further barrier.

44 If all combination of soldier incentives are allowed: {F, I, E, FE, FI, EI, EIF}, and consider the mix of economically and ideologically motivated organization as well as the mix of forced and voluntary recruitment as separate cases, we should have 3 * 3 * 2 * 7 = 126 types of violent organizations according to this classificatory scheme. While leadership competition may make any leader fear that force may be applied to him, it is in the nature of being a leader that force is an incentive to administer, not to follow.

centives needed to apply for the soldiers to stay, but both ideological and economic incentives may be applied to some degree in order to reduce the desertion rate. Here children and adults may possibly differ. Children are likely to be more easily framed and there forget more quickly that they were recruited by force. Hence, they may have relatively lower desertion rates than adults recruited by force.

The particular cases drawn in the figure is at the left side the case of a violent organization where the leadership is mainly motivated by economic motives that recruits children by force. The children are then managed by force incentives. Adults, on the other hand, are mainly recruited voluntarily and are kept fighting for the organization motivated mainly by economic incentives. The second configuration drawn at the right side is only outlined to explore the typology. It is the probably non-existing case of an ideologically motivated organization that recruits adults by force while children join voluntarily. The adults are then kept obedient by a mixture of force and economic incentives while the children are only presented with economic rewards.

In the preceding discussion we have presented the possibilities in terms of dichotomies: child soldiers who are either economically or ideologically motivated, organizations that may either use force or voluntary recruitment, and so on. In fact, of course, soldiers' motivation (as the organizations) may rather be placed along an ideology –economic spectrum. Sometimes the ideological and economic ones may appear jointly as when a child defend his own right to his homestead as part of his tribe's control right of the land to which his homestead is a part. Similar considerations apply to the other dichotomies outlined here.

Military activities are in the end decentralized activities where both the final killing and the organizational infrastructure around it needs to be improvised. No pre-constructed assembly lines exist. Centralized monitoring is difficult because of classical asymmetric information issues. The risks of death and molestation in battles make it rational for the individual to exit before the battle begins.[45] If many do so, the organization will lose, and the remaining member will be exposed to larger risks of death. The incentive to exit for the individual, will increase with the number of others exiting. Hence, the sudden switch from collective fighting to collective exiting in many losing battles.

The use economic incentives to manage a violent organization in any precise way is hampered by strong versions of the classical problems of asymmetric information, collective action and adverse selection: If recruiting soldiers on the basis of expected economic gain, the organization has a higher risk of getting a mix of members who will tend to run away before a battle or with any set-back of winning prospects; asymmetric information makes it difficult to reward efforts. Result-oriented selective rewards that may avoid battle desertion imply looting, a risky strategy since the organization will lose local support. To prevent the severe collective action problem, the use of force to prevent desertion is obviously necessary and remains nec-

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45 That happened with quite a number of children who were recruited by Renamo in the refugee camps in South Africa when they were about to be sent into Mozambique to do actual fighting.

essary even when most soldiers are recruited on an ideological basis (cf. the FARC case as described by Sanín). When combined with a corresponding intrinsic motivation[46] political conviction is clearly ideal to mitigate this classical incentive problem of military action. Then it is more precise than either force or economic rewards. As an incentive it motivates actions when motivation is needed, and it is inexpensive. By reducing the severe collective action problems involved in actual fighting it reduces the need of harsh physical punishment.

But as pointed out by Frey (1997) in a general context (and by Weinstein in the context of violent organizations) both external force and economic rewards may crowd out and destroy intrinsic motivation.[47] The organizations are not able to choose their incentive mix freely. Intrinsic motivation cannot be either bought or forced, it is either present or not. Force and economic rewards may be both managed and more easily combined, however. Hence we may expect fairly distinct greed or grievance organizations to develop where greed is combined with harsh punishment to prevent disintegration.

Selective economic incentives are expensive and most rebel organizations are poor even when their violence activities are the most individually remunerative in the neighbourhood. Hence, their leaderships would try to keep the number of members who are allowed to share in the net income restricted. Again physical punishment is useful to restrict access, but there are also reasons to expect that children are more easily kept away from sharing, that is, greed-motivated organizations that rely on economic incentives have more to gain financially by employing children.[48] As indicated in figure 4 both greed and grievance organisations may apply force in order to recruit members; greed motivated leaders may recruit grievance-motivated members and grievance organisations greed-motivated members, but on average one would expect that the voluntary recruits of grievance organisations will be grievance-motivated and the voluntary recruits of greed organisations greed-motivated.

After a while greed-based organizations may reveal themselves as such and will receive fewer ideologically committed recruits. The fraction which has to be recruited by force will tend to increase over time. While not empirically well documented, I will expect that children who are recruited by force may have lower desertion rates than adults recruited the same way. This applies clearly for younger children. It is more difficult for them to de-

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46   For example under cascade-like recruitment intrinsic political convictions may be wholly absent and ideological incentives may be as extrinsic as any threat of punishment or promise of dollars.

47   Note that intrinsic motivation where the task is to kill may develop into what may be perceived as pure evilness and develop into cascades of killing. Here lack of discipline may open up for group behaviour where the soldiers mutually stimulate their killing beyond reason. Presumably youth groups may develop such behaviour more easily. Intrinsic motivation of this kind is more closely connected to the third form of strategic motivation, fighting as pleasure, which I have chosen not to study here.

48   Weinstein (2005) notes that Renamo initially applied economic incentives extensively since they received substantial economic support from South Africa. When that support disappeared Renamo turned to more use of forced recruitment and to recruit children, some very young ones. Almost nine percent of the recorded, demobilised Renamo soldiers were ten years old or below.

sert.[49] Hence, we may expect that the fraction of child soldiers in small-scale, greed-managed violent organizations to increase over time.

Whether we should expect it to be higher than in a grievance organization is not obvious, however. In some African countries the main grievances are actually held by the older children and youth who may have lost traditional access to land and marriage (Richards, 1996). Hence we may expect a large share of children among the grievance-motivated recruits and even among the commanders. In the extreme case of Mindanao where whole families are actively engaged, the share of children may also be quite high (but not in command), reflecting the demographic state of the area, but presumably the younger children will be kept away from the most risky tasks.

In either case the scale of the fighting is also likely to be important for the share of children to be recruited. If heavy, expensive and complex weapons or the disciplined coordination of large units of soldiers are necessary, children are less useful. Research of child labour in general suggests that children have rarely been given responsibility for technically complex and expensive equipment. There is no reason to believe it will be otherwise in child soldiering.[50] Furthermore, if the violent competition is a low-scale one, it is easier to organize consumption in the military units in the same way as in ordinary households, so they will include many tasks that are ordinarily performed by children, and will demand more children for non-combatant tasks.

Another important organisational "variable" is the degree of how personal the structure is: Is the loyalty towards a superior mainly based on his formal position or who he is? Children may more easily adjust to the latter form of management, which may be one of many reasons why child soldiering is mainly observed in poor countries where this management style still is frequent and pronounced. This is again relevant for both greed and grievance based organizations, but as pointed out by Weinstein (2005) violent organizations with high social endowments are likely to use it to greater advantage and receive a higher share of voluntarily recruited children. Shepler (2004) describes how personal ties to commanders were important both in the recruiting and management of children in Sierra Leone. Children's need for security, to have someone to love and respect may be – rather perversely many would feel – transferred to military commanders.[51]

Grievance organisations are likely to handle the collective actions better and therefore to rely less on force as long as the members stay strongly mo-

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49 This is also one of the reasons why housekeepers prefer young house girls to be recruited from distant areas. In this case they may even be hired before they are able to make any net economic contribution since they will then be locked in with their employer during a longer period before they may be able to run away. For some relevant data in connection with this issue, see Kielland and Sanogu (2002).

50 Specific to child soldiering is the observation made by some Western soldiers (in Sierra Leone) that children are more exposed to fears of heavy equipment and heavy noise. US commanders therefore recommend more use of heavy helicopter gunships against child soldier forces than one should normally do, this not in order to kill more easily, but in order to frighten them and – in the end - to kill fewer children (Singer, 2001).We should also not that around 18-19 years of age conscripted youths may share considerable responsibility in handling modern tanks in countries like Norway and Sweden.

51 Here we should note that some of the apparently greed-oriented organizations also possess considerable social endowments. While related, the distinction between social versus economic endowments is not quite the same as grievance- versus greed-oriented organizations.

tivated. Children and youth tend to be at least as strongly motivated as the communities from where they have joined.[52] The leadership would on average need to treat their members at acceptable level, including the children. In addition to the internal reasons it, some of the political costs of bad treatment and forced recruitment of children will be internalised. The strength of political motivation is fickle, however, and may quickly decline. As pointed out already these organizations would also need to apply extensive force in order to keep its collective action problems within bounds and to recruit new manpower.[53]

9. The market for child soldiering and the child soldier ratio

We have now looked at both the demand and supply side of child soldiering. Let me now return to supply and demand diagrams and look more closely at how the two sides may mesh. I will only look at cases where the leadership of the organization is profit-oriented and members either economically motivated or recruited by force.[54] The children's voluntary supply (economic and non-economic) and the area characteristics – the ease by which they may be recruited by force constitutes the supply side. The organizations' demand for children the demand side.

Given the possibility of forced recruitment as well as the indications of high child unemployment rates in many areas in which the violent organizations operate[55], the actual number observed, and therefore also the actual child soldier ratio, may not be an equilibrium outcome, although that is certainly a possibility. The only model of child soldier recruitment I am aware of, however, (Gates, 2004) presupposes an equilibrium model although the supply side (the participation constraint) is only modelled in a rudimentary way.

Pure excess demand situations – that is **t**he violent organization tries to get more recruits than it is able to acquire of both adults and children. Here the supply side should determine the child/adult rate if, for some reason, the violent organization refrains from the use of force. In this case when recruiting both adults and children the child/adult ratio will be determined by the voluntary supply functions. We will have to explore how the children's and adults supply will be affected by distribution of landownership, stock of orphans[56], family cohesion, poverty levels, unemployment rates within the

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52 This is likely to be part of the reason why adolescents so frequently are employed as suicide killers

53 The present situation in Sri Lanka [2005] appears to be a case in point. Internal fighting among Northen and Eastern Tamils have caused the Tamil forces to lose legitimacy and they are now applying more force when re-recruiting children, evidently expecting a new outbreak of the civil war (Becker et al, 2004). That situation appears soon to arise [July 2006].

54 Similar analyses could be made for grievance organizations and ideologically motivated recruits, spelling out political motives and feedbacks of war, but they will be of a more case-specific nature.

55 In Andvig (1998) I point to several observations that indicate possibly severe child unemployment in some African countries. The counting of considerable number of so-called idle children in Biggeri et al. (2003) supports the impression.

56 Reich and Achvarina (2004) explore whether orphan rates have any statistically significant effects on the child soldier ratios in African conflicts, and get a negative result. This is not so surprising. The orphan rates will not be relevant when there is an excess supply of child soldiers (maybe partly caused by orphanage). It may not have any measurable impact on the aggregate ratio even if all child soldiers are orphans, since the number of

supplying groups, and so on. In addition, the groups' expectations about their welfare after joining the violent organization are important and may differ.

The excess demand may be resolved through forced recruitment, however, but the organization may still be unable to get all the recruits it demands (when forced recruits are not paid, the demand may increase). Then the child soldier ratio will additionally be influenced by the characteristics of the fields for hunting human beings: The number of usable children vs. adults in the area, how easy it is to catch a child compared to catching an adult, the existence of exceptionally good 'fishing grounds' such as refugee camps or secondary schools, and so on. Even in this case the perceived excess demand will be influenced by the characteristics of the organization. For example, a losing organization is always likely to experience excess demand.

Pure excess supply situations – Here it is the characteristics and the policy of the violent organization itself that will determine the child soldier ratio even in the case of voluntary supply. The leadership's view about the desirable ratio will be instrumental. Let us again look at a couple of cases:

1) When the violent organization only applies voluntary recruitment methods and is relying on economic incentives, excess supply means that at the going rates the organization may recruit as many children and adults as it may want at the going conditions. Hence, the leadership decides the number of children, adults and their ratio on the basis of the expected profitability of their numbers and their mix. The child/adult ratio will be based on cost and efficiency: The relative cost-efficiency of applying children along the range of tasks that the organization needs to do compared to the adults would be crucial. Fighting will be only one of them.[57]

2) The case when the violent organization also applies forced recruitment is in many ways quite similar, although the term 'excess supply' may be misleading, since it might include cases of excess demand, where both demand and supply is constrained to voluntary recruitment, but where this gap may be easily closed when the violent organization applies force. One may of course question the use of the term 'excess supply' in the case when force is used. The idea is that the recruitment area contains so rich 'fishing grounds' that it is always able to catch the desired number of both adults and children and could acquire more on the same terms, the same catchment costs, if it so desired. Also in the case when force is a major instrument in recruitment, the number of children caught should be related to the availability of adult stocks. When the adult stocks are depleted, the inducement to catch children increases. Long lasting wars

child soldiers are so few compared to the total number of employable children. Since the number of orphans would be influenced by the conflict itself, we have also classical statistical problem of identification, particularly so since the variance of the child-soldier ratio is large compared to the variance of the orphanage rate. This is reflected in their range: While the child soldier in their cases varies between zero to fifty per cent, the orphan rate varies between ten and seventeen per cent.

57 It is this situation where the principal-agent model outlined in Scott Gates (2004) is most directly applicable.

tend to have this effect. According to Pedersen (2006) something like this may have happened in the long lasting war in Eritrea.

The size of the organization determines its need for manpower, and may be restrained by either a lack of capital (weapons), a lack of manpower or by the nature of the war (cf. Fearon, 2005). The choice of the desired ratio will also in this case be determined by the cost-effectiveness of children compared to adults, but the ratio is likely to be different. We have reasons to believe that the optimal child soldier ratio will be higher in forced recruitment situations for reasons outlined before. When deciding on how many should be recruited by each method, the possible interference on the cost-efficiency between the methods should also be considered.[58] In any case, the observed child soldier ratio will be determined as a kind of average of the two rates.

This does not imply that the characteristics of the area are without importance also in this case, although they may not impact the chosen ratio directly. As modelled by Fearon (2005) the low optimal scale of the violent organizations that operate in rural neighbourhoods are explained by these surroundings as well as by the nature of the war. Moreover, it is these surroundings that allow excess supply to occur. Excess supply may at times become visible when substantial numbers of children are hanging around the military unit, not only of curiosity, but also signalling a desire to join.

Summing up, I will expect on the basis of the preceding analysis that in most situations the child-soldier ratio is likely in the short run to be determined mainly by the policies and characteristics of the organizations, not by the characteristics of the areas in which they operate. In the cases when we have excess supply of children willing to join – a less rare situation that one may believe – this is obvious. In situations with excess demand, the organizations will attempt to close the gap by force. Again the factors that determine the quantity of children will work mainly through the organizations' policies. Moreover, the rareness of children who become child soldiers compared to the total number of children in the relevant age groups reinforces this argument. Fluctuations in war luck may cause strong shifts in supply and demand for both child and adult soldiering. When losing, the demand tends to go up and supply down, inducing an increased propensity to apply force, and hence induce a seemingly erratic shift in the composition of the military forces towards a higher child rate.

Hence we should not expect that the heavy economic and social variables in the areas of conflicts where children participate to show up with great strength when looking at their aggregate numbers. So far I have not found any firm evidence about the social composition of the child soldier forces. However, both theoretical considerations and a considerable amount of anecdotal evidence suggest strongly that they are mainly composed of children with poor family backgrounds.[59] Moreover, low GDP levels (and therefore

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58 The ILO/IPEC (2003) report notes some of the impact of the mix of forced and voluntary recruits on the management of the organization. For example, in Burundi only the children who had volunteered were allowed to visit home.

59 Suicide bombing is an exception. This is a form of violent activity that have a high share of children or young adolescents involved, but where their social backgrounds are above average in terms of income and education levels . This form of violent behaviour is obviously a form of elite activity, and does not tell anything about whether the violence observed has anything to do with poverty or not.

extensive poverty) characterize the areas where conflicts that potentially involve child soldiers. Hence, the long run demand for child soldiers should be heavily influenced by GDP and poverty levels while the short run demand, the demand conditional on a conflict already taking place, may not.

10. Child soldiering and child capabilities

The children's capabilities compared to the tasks available in a violent organization are important in explaining whether children are employed at all,[60] and to which tasks they are eventually allocated. As we have indicated, it is also relevant for the method of recruitment chosen. To lump all children below eighteen together is obviously misleading in this context, since their capabilities obviously change extensively between the age of six , when the youngest child soldiers have observed to be recruited, and to eighteen, the standard international upper age limit for a child. Here I will juxtapose casual observations of, sometimes only myths about, child soldiers' behaviour with experimental evidence of children in US in quiet, peaceful conditions. Most of the observations of child soldiering are taken from West- or Central Africa.[61] The evidence from experiments is brought in precisely because of the frequent myth-like evidence about the children's behaviour when fighting.

The standard reason for why fairly young children to a larger extent than before may have become involved in actual fighting is the easy availability of very light, cheap and easily maintained weapons with considerable fire power which may be of considerable effect without extensive training. This argument is probably correct as far as it goes[62], but it does not preclude that children are mainly involved in regular household tasks[63] or may have been involved in organized killings based on the use of weapons like machetes or spears, but then probably mainly at moments when the enemies or civilians were unorganised.

Moreover, even if technical capable, the characteristics of children's perception and emotional systems, their decision-making powers, may make children less (or more) fit for being engaged with the set of tasks of an armed force than adults. For example, one of the reasons for the higher casualty rate

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60 Normative concerns about whether children should be allowed or forced to participate in any armed forces, and if so, which task are also important. As pointed out in the introduction, the norms against children participating in wars as soldiers are also likely to be very widespread. Otherwise it would be difficult to explain why there are, after all, so few child soldiers even in countries where children otherwise work with adults in most lines of activity from an early age.

61 The special case of the youngest children is a separate issue, since the violent organisation's demand for them may then arise before they are likely to be any productive asset. Why do they sometimes do so? Capabilities matched against tasks may not then provide the answer. This is an intriguing question, but I will not address it here.

62 As pointed out in Pedersen (2006) the weapons have in fact not become so much lighter, but the soldiers probably need less training (as individuals and as a group) to make them deadly efficient.

63 I would have expected the children to get more involved in household tasks, but the child soldiers in Central Africa appear to deny it: While 60% claimed that they were 'often' and 25% told they were 'sometimes' assigned frontline duties only 25% admitted that they 'sometimes' did household chores, and no one did it often (ILO/IPEC, 2003: 43. On the other hand in at least one of the case stories the child boasts he is the only one that did real fighting! The children are likely to underreport their involvement in household choirs since they yield low prestige.

of children observed in Sierra Leone, was the children's 'fearlessness' one observer claimed (Amnesty, 2000, 2). Or from DRC: "Children are daring because they are unaware of death" (ILO/IPEC, 2003: 26).[64]

This may only be an attribute of their group behaviour, but translated to a hypothesis about the single child, we should expect children to show less *risk avoidance*, if this is true. Here we have some experimental observations of potential interest. Harbaugh et al (2001) have studied whether risk behaviour change systematically with age.[65] Roughly, their main result is that children underestimate low probability risks when associated with losses, even if the risk of loss is fairly high. The degree of underestimation is somewhat higher for children than adolescents. If transferable to the widely different setting of child soldiers, this gives weak support for the myth – it may be easier for the management of a violent organization to employ children, if they are at all capable, to its extreme high risk ventures, but it should for the same reason expect much higher attrition rates among children with the same technical competence as the adults.

What about the collective action problem in battles that *altruism* may mitigate? If that altruism is related to an ability to internalise the situation of others and if it is weaker among children we may expect that it is also easier for a child soldier to perform cruel acts. Both sets of behaviour have been asserted about child soldiers, but are they based on any general behavioural tendencies in children? Myths arise easily in the context.

Again there are available experimental results (linear public goods experiment as reported in Harbaugh and Krause, 1999) that touch the issue. In this case children like adults start out by being more generous than one would predict on the basis of pure selfishness. Age has no influence here. But unlike adults their voluntary contributions don't decline and even increase with the number of repetitions. Group attachment has an increasing effect. If we again – by a leap of faith – allow the transfer of this result to child soldier situations, we may not expect children for selfish reasons to have a stronger tendency to run away than adults. Since the lack of altruism is not confirmed in the first place, cruelty may not be tied to a lack of altruism in the way suggested above.

We may find other results about behaviour of potential relevance for child soldiering: results about their bargaining *capability, the discount factor* as applied by children, and most importantly, the ease of *framing* adults compared to children. It will take us too far to report all here. While there are some differences, mostly in expected directions, the thrust of the results is nevertheless that the difference between child and adult behaviour is surprisingly small. The obvious consequence is that after having acquired sufficient physical strength, children may in a technical sense substitute for adults to a degree that is surprising given Western attitudes to and expectations about childhood.

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64 At this stage I will neither accept nor reject observations of this kind. Observations from Burma (Human Rights Watch, 2002) suggest initially strong feelings of fear among children in their first violent encounters.

65 They rely on psychological work that they claim has demonstrated that children are able to understand probabilities and expected value calculations. The monetary value at stake in the adult games, were 10 times the one in the children's games.

One may question whether the results of these economics experiments, and the other psychological research on children's development that we have not referred to here, are relevant at all: May experiments where well-off US children may loose toys worth 5$, tell anything about an Achole girl (Uganda) who daily risks her life, or may the behaviour of isolated children in a cool emotional state tell anything about how a group of angry and scared children behave when their emotional states reinforce each other? Maybe not, but systematic data about the specifics of child soldier behaviour is missing (while we have serious data about the effects of the specific experience of child soldiering on later mental states and behaviour.) And it is obvious that the managers of any armed force would need to make assessments of child vs. adult capabilities both in their recruitment an when allocating the tasks in the organisation.

The observation that the household and farm labour of (young) children and adults are likely to be complementary while two adults' unskilled labour in the end are substitutes, suggests that something similar must be the case in military contests (and standard contest functions assume it). Then we know that at a certain age a transition in behaviour has taken place where children from an economic point of view can perform adult work.

The breakpoint clearly depends on the nature of the tasks to be solved, the individual characteristics of the person in question and the kind of decisions to be made. In most countries children must shoulder adult work responsibilities at an earlier age than is accepted in the OECD countries, but they seem often to be capable, so when may their agency arrive? Iversen (2005: 11) based on his research on child migration in India reaches a fairly clear conclusion: "boys aged 12–14 regularly made labour migration decisions independently of their parents and often without the consent or even informing the parents about their departure." Despite many cultural differences it is also at about this age that children may seek military employment on their own and solve many of the simpler military tasks independently, if employed. Before then we may assume that the children will have to rely on interaction with older soldiers to accomplish their tasks.

11. Child soldiers, poverty and conflicts: Some conclusions

The phenomenon of child soldiers tells a complex tale about the impact of poverty on conflicts. Most child soldiers are highly likely to come from poor families. When joining a violent organization they may either use it as an instrument to seek redress or as an instrument for upwards economic mobility. Poverty has obviously something to do with the decision. When recruited by force, poor children also appear easier to catch. It is difficult to explain why. Nevertheless only a small minority of children with such background join either voluntarily or are caught.

Looking at the aggregate levels there appears to be a very weak relationship between poverty levels and the number of child soldiers, when a conflict has occurred. This may be explained as the combined effect of the small fraction of children in these conflict societies who become soldiers, and the power of the demand side, the power of the violent organizations. To really be able to explain the variation in the use of child soldiers, we would need to

know more about the policies and the inner workings of these organizations. The poverty levels of the surrounding civil populations may play only a minor role.

Going one further level up – or behind – poverty levels reappear as a major cause. When explaining why the fairly low scale conflicts arise – of the kind that may employ children on a larger scale – and with them their violent organizations, broadly conceived[66], poverty levels are a major explanatory factor whether it is mainly working through the lower efficiency of government military organizations (Fearon, 2005) that may make children useful, or through the recruitment mechanisms.

The existence of children employed in organized forms of violence is in one sense a deeply disturbing feature of the international society calling for pessimism. On the other hand, the number of child soldiers is surprisingly low indicating that here some widely held normative concerns may be at work. Based on these we may also draw an optimistic policy conclusion:

If it is true, as I have found most plausible, that the number of child soldiers actually employed in a conflict is not determined by heavy social or economic processes in the conflict area, but rather by deliberate policy of the leadership or local commanders of the violent organizations themselves, that policy should also be fairly easy to change if it is possible to have access and impact to these leaderships. With high degree of substitution between adults and children the violent organizations are not likely to loose much so there should not be necessary with strong instruments to have impact.

Hence, it should be possible to reduce the number of child soldiers significantly without having to end the conflicts themselves. How much is achieved by this in normative terms hinges upon how one should consider the ethics of children killing and suffering compared to the ethics of adult killing and suffering in violent conflicts.

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66 See, for example, Collier and Sambanis (2005). Here I have used poverty levels in a vague sense. I may mean the fraction of a population who are below an arbitrary, fixed poverty limit, or another word for GDP levels with an understanding that few low GDP level countries have so equal income distribution that they will not have a large fraction of people who are poor.

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