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**CHILDHOOD PEER STATUS AND THE CLUSTERING OF
ADVERSE LIVING CONDITIONS IN ADULTHOOD**

by

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**Childhood Peer Status and the Clustering
of Adverse Living Conditions in Adulthood**

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Abstract

Within the context of the school class, children attain a social position in the peer hierarchy to which varying amounts of status are attached. Several studies have shown that children's peer status is associated with a wide range of social and health-related outcomes. These studies commonly target separate outcomes, paying little attention to the fact that such circumstances are likely to go hand in hand. The overarching aim of the present study was therefore to examine the impact of childhood peer status on the clustering of living conditions in adulthood. Based on a 1953 cohort born in Stockholm, Sweden, multinomial regression analysis demonstrated that children who had lower peer status also had exceedingly high risks of ending up in more problem-burdened clusters as adults. Moreover, these associations remained after adjusting for a variety of family-related circumstances. We conclude that peer status constitutes a central aspect of children's upbringing with important consequences for subsequent life chances, over and above the influences originating from the family.

Key words: childhood, peer status, cohort, life course, outcome profiles, living conditions

Introduction

The significance of circumstances in childhood for adult outcomes is well-established. These circumstances commonly reflect the socioeconomic conditions of the family of origin such as parental social class, family income and housing conditions (Bynner 2001; Galobardes et al. 2004). Children who grow up under adverse socioeconomic resources are believed to experience a lack of resources that persists and even may accumulate over time, thereby giving rise to negative effects across the life course (DiPrete and Eirich 2006; Holland et al. 2000).

The resources transmitted to the child via the family are however not the only type that may influence the child's future life chances. Drawing inspiration from the growing field of childhood sociology the present study highlights children 'in the state of being' rather than 'adults in the making', taking its starting-point in the specific social structures of childhood (Brannen and O'Brien 1995). These structures typically emerge within the context of the school wherein children attain a social position apart from their family. To these positions, varying amounts of peer status are attached. Past research has demonstrated influences of the child's peer status in the school class on adult outcomes such as educational attainment, unemployment (Almquist et al. 2010) and health (Almquist 2009; 2011a). While these studies have indeed recognised the importance of childhood-specific structures, they have not sufficiently addressed the fact that the adult outcomes which these structures are believed to influence are likely to go hand in hand (Brännström and Rojas In Press; Bäckman and Nilsson 2011; Fritzell et al. 2007; Korpi et al. 2007). It is thus reasonable to assume that the effect of childhood peer status may be even more

pertinent on grouping of outcomes. Using data from a cohort of more than 14,000 individuals born in 1953 in Stockholm, Sweden, the aim of the present study is therefore to examine the association between children's peer status in the context of the classroom and the grouping of various outcomes reflecting social and health-related living conditions in adult life.

The remainder of the article is structured as follows. We continue by discussing the concept of peer status and how the child's status position in the school-class hierarchy may pattern adult outcomes. Next, the data and methods applied in the present study are described. In the subsequent sections we present and discuss the empirical findings.

Childhood Precursors of Adult Outcomes: The Case of Peer Status

When analysing the influences of childhood circumstances (in terms of socioeconomic conditions) on adult outcomes, researchers have to deal with the fact that children do not have an occupation, education or income of their own. One common solution has been to focus on the parents' socioeconomic position, assuming that the resources distributed at the macro-level of society affect the children's current and future life chances via their parents. Such studies have, for example, shown that children experiencing economic hardship and family poverty are more likely to be unemployed and poor as adults (Haveman and Wolfe 1995; Wagmiller et al. 2006). Moreover, not only family income but also educational level and occupational class of the parents have been linked to children's subsequent risks of ill-health and mortality (Galobardes et al. 2004; Power et al. 1999; van de Mheen

et al. 1998). In sum, it stands clear that there are long-term consequences of parents' lack of resources for their children's outcomes as adults. It is however also evident that the factors mentioned above reflect an adult's perspective of what is important for children's life chances; a viewpoint that has been increasingly questioned.

Over the past three decades, there have been changes in how children and childhood are regarded in sociological research. Focus has shifted from the view of children as bystanders in their own development and childhood as simply a path towards adulthood to children as actively shaping their own reality and childhood as a sociologically interesting social phenomenon (Prout and James 2005). A key notion within childhood sociology is that children participate in social worlds which are (relatively) autonomous and irreducible from adult society. Thus, already here it stands clear that the family may not be the only context of importance for children's life chances. In line with advocates of childhood sociology, we argue that a more child-oriented perspective on childhood precursors of adult outcomes should include the recognition of arenas alternative to the family. Here, the strongest contender is school; in childhood, no daily activity occupies as much of a child's time as attending school and no single place does the child spend greater amounts of awakening time in as that of the classroom. Within the context of the school class, children are more or less forced to interact with their classmates. Corsaro (1992) has suggested that the continuous social interaction between peers results in a unique peer culture. Parallel to the development of a peer culture is the process of differentiation through which a social hierarchy emerges over time (Corsaro and Eder 1990).

The social hierarchy of the classroom, as it constitutes a unique feature of childhood, is the main focus of this article. A considerable amount of research has considered children's positions within the class hierarchy and the varying degree of peer status attached to these positions (for an overview, see Almquist 2011b). The concept of peer status reflects the degree to which the child is accepted and liked by its peers. As such, it should not be mistaken for what is commonly referred to as 'perceived popularity', a concept which has its roots in educational sociology. While peer status reflects likeability in the peer group, perceived popularity refers to the recognition among peers of visibility, achieved prestige and reputation (Adler et al. 1992). Thus, the latter can be seen as a unilateral concept that mirrors the 'general opinion' of the group (Bukowski and Hoza 1989; de Bruyn and Cillessen 2006). While there are important similarities between individuals who have high peer status and those who are perceived as popular, there are also important divergences: perceived popularity is accompanied by more social prerogatives than sociometric status (Lease et al. 2002) but is also positively associated with aggression, bullying and defiance (Cillessen and Rose 2005; Farmer et al. 2003) as well as behaviours that are not 'adult-sanctioned' such as smoking, alcohol use and sexual activity (Valente et al. 2005).

Peer status is commonly established through a so-called sociometric test, where children are asked to nominate a number of classmates whom they prefer in different respects. The more nominations a particular child receives, the higher his or her peer status position is assumed to be (Stütz 1985). Studies have shown that individuals in high status positions are generally more helpful, friendly and considerate;

academically and socially competent; cooperative; and follow rules (Cillessen and Mayeux 2007; Kupersmidt et al. 1990; Newcomb et al. 1993). On the other hand, those with low peer status tend to be more aggressive and disruptive; violate rules; bully and fight; or are shy, withdrawn and lack prosocial skills (Coie et al. 1982; Ladd and Oden 1979; Ollendick et al. 1992; Prinstein and Cillessen 2003). Low peer status has moreover been linked to a wide range of concurrent and short term adversities, such as adjustment difficulties (Parker and Asher 1987) and behavioural problems (Kupersmidt et al. 1990; Parkhurst and Hopmeyer 1998). Besides its influences on child outcomes, several studies have established long-term consequences of childhood peer status. For example, one study by Almquist et al (2010) shows that lower peer status is linked to a decreased chance of reaching higher levels of education (in terms of transition to both upper secondary school and to tertiary education) and increased risks of adult unemployment. Other studies have focused on health outcomes in adulthood, demonstrating a link between low peer status and a wide range of diseases such as mental and behavioural disorders (Almquist 2009; Modin et al. 2010). Important here to note is that these associations remain strong even after adjusting for socioeconomic position of the parents. Thus, peer status seems to reflect a type of childhood circumstances that has consequences for children's future life chances, over and above the influences of family-related conditions.

To study the peer status effects on separate outcomes is important because it renders possibilities to also examine mechanisms in closer detail: cognitive skills and scholastic abilities may be more important mechanisms to take into consideration in

the association between peer status and educational attainment (Almquist et al. 2010) whereas health-related factors such as smoking and alcohol consumption probably are more important mediators in the link between peer status and cardiovascular disease (Almquist 2009). However, adverse outcomes in adult life tend to go hand in hand. For instance, one study by Fritzell et al (2007) has shown that economic hardship, health problems and weak labour market integration are strongly correlated. It could thus be the case that a small group of individuals have a general susceptibility toward a wide range of adversities and thereby make up for a large proportion of the associations across studies. If so, it may be misleading to study social and health-related outcomes in isolation. One way of dealing with this is to instead examine the clustering of social and health-related conditions. Here, some parallels may be drawn to the person-oriented approach which originates from the field of developmental psychology (Bergman and Trost 2006; Eye and Bogat 2006). This approach puts emphasis on the fact that it is the outcome pattern as a whole that carries the information rather than the parts regarded separately. In the present study we will therefore investigate the potential influences of childhood peer status on grouping of various outcomes in adult life.

We have not yet addressed the pathways linking childhood circumstances to adult outcomes. One hypothesis that has been put forward in research focussing on family-related conditions (in a broad sense) as childhood precursors of future life chances, maintains that the individual's access to resources determine the level of opportunity at various stages across the life course. A lack of resources at one stage may results in scarce resources at the next stage, thus bringing about a concatenation of

disadvantages (Elder 1998). In line with Östberg and Modin (2007; see also Almquist, 2011b), we argue that a resource perspective on the life course may also be relevant to explain the pathways through which children's peer status affect their outcomes as adults. To begin with, children who have high positions in the status hierarchy are respected and admired (cf. Ridgeway and Walker 1995) and, as such, they have a higher chance of receiving important information and influencing the attitudes and behaviour of others. A position at the bottom of the hierarchy is conversely related to less power and control over classroom context as well as decreased levels of social support from classmates (Munsch and Kinchen 1995). In other words, peer status involves a varying degree of resources. These resources are assumed to shape the child's expectations, ambitions, behaviours, and choices; children with low peer status are more likely to expect less from and for themselves which subsequently lowers their ambitions as well as influences the types of behaviour they adopt and the choices they make. This may impinge on the circumstances (and hence the access to resources) at subsequent stages of life in terms of, for example, educational choices, health-related behaviours, membership in networks and coping strategies. This chain of linked events ultimately influences adult outcomes.

Data and Methods

The data material used is the Stockholm Birth Cohort Study (SBC), which was created in 2004/2005 by a probability matching of two longitudinal data sets: The Stockholm Metropolitan Study (SMS) and The Swedish Work and Mortality Data

Base (WMD). The SMS cohort was initially defined as all children born in 1953 and living in the Stockholm metropolitan area in 1963, comprising 15,117 individuals. All data was de-identified in 1986. In 2004–2005, the SMS was linked by a probability matching to the WMD, which is a temporary, population-based and anonymous database of Swedish residents who were born before 1985 and alive in 1980 and/or 1990. The WMD contains information from various Swedish registries. Of the original 15,117 individuals, approximately 95% ($n = 14,294$) were positively matched and thereby included in the SBC (for a detailed description of the matching procedure, see Stenberg and Vågerö 2005; Stenberg et al. 2006).

Peer status is our key independent variable here and was measured through a sociometric test, included in the School Study of 1966 (age 13). All 6th-grade school classes in Stockholm participated in this test, with the exception of classes of children with learning disabilities. The students were asked: “Whom in this class do you best like to work with at school?” This type of question has been used in previous studies to indicate status position in the school class (Almquist 2009; 2011a; Almquist et al. 2010; Modin et al. 2010). It is assumed to be an indicator of the degree of likeability and general acceptance among classmates, although it is likely to also reflect the individual’s cognitive ability to some extent (Stütz 1985). In the present data, peer status and cognitive ability (measured at the same age) were found to be moderately correlated ($r=0.27$, $p<0.001$). For the sociometric test, all students were instructed to nominate three classmates in no particular order. They have subsequently been categorised into five status groups based on the number of received nominations,: marginalised (zero nominations); peripheral (one

nomination); accepted (two or three nominations); popular (four to six nominations); and favourite (seven or more nominations). This categorisation follows the recommendations made by Stütz (1985) for sociometric information based on three positive nominations, with the mean value as a guideline. See Figure 1 for the distribution of peer status.

[Figure 1 about here]

Rather than analysing the effect of peer status on a variety of separate outcomes, the person-oriented approach applied in the present study targets the outcome pattern as a whole (Laursen and Hoff 2006). Four outcomes in adulthood were included here: educational attainment, unemployment, social assistance benefits and mental and behavioural disorders (Table 1). For the first three variables, information was derived from the Swedish registry database called A Longitudinal Database on Education, Income and Employment (LOUISE/LISA) available for the period 1992-2001 (age 39-48).

Information about educational level in 2001 was based on the Swedish Educational Terminology (SUN), consisting of seven categories: pre-primary education; primary and lower secondary education, less than 9 years; primary and lower secondary education, 9 (or 10) years; upper secondary education; post-secondary education, less than two years; post-secondary education, two years or longer; and post-graduate education. In the analysis, this variable is treated as continuous. Information about unemployment refers to the number of days of full-

time unemployment during the period 1992-2001. The same period was used with regards to social assistance benefits, referring to the individual's income (in Swedish crowns; SEK) from such benefits. Information about mental and behavioural disorders during the period 1992-2001 refers to the number of hospital admissions and was collected from the Hospital Discharge Register, held by the Swedish National Board of Health and Welfare. This register contains data about in-patient care, based on all discharges from Swedish hospitals (overnight patients). The diagnoses contained in these records are primarily based on the judgement of the doctor. Using the 9th Revision (for the period 1992–1996) and the 10th Revision (for the period 1997–2001) of the International Classification of Diseases (ICD), diagnoses in the ICD 9 chapter 'Mental disorders' (290-319) and the ICD 10 chapter 'Mental and behavioural disorders' (F00-F99) were coded as mental and behavioural disorders. However, diagnoses indicating an early onset (i.e. in childhood, thus potentially preceding the establishment of peer status) were excluded. Examples of diagnoses reflecting mental and behavioural disorders are depression, anxiety and substance abuse.

[Table 1 about here]

The dependent variable here is *accumulated outcome profiles*. A number of strategies are available for identifying patterns in combinations of the addressed outcomes. We draw on cluster-analytic tools related to the person-oriented approach mentioned above (Bergman et al. 2003). Since we have a large sample ($N > 11,000$),

the TwoStep cluster method in SPSS 18.0 was preferred (for details, see Şchiopu 2010).

As shown in Figure 2, this procedure generated a four-cluster solution. Performing gender-separately analyses resulted in similar solutions between men and women. The first cluster consisted of approximately 50 % of the individuals and was chosen as the reference cluster: these individuals have about mean scores for unemployment, social assistance benefits and mental and behavioural disorders, but comparably More education than the average (E). Individuals assigned to the next two clusters had comparably Less education (e) and comparably More unemployment (U), respectively. Roughly two percent of the individuals are found in the fourth and most problem-burdened cluster, consisting of individuals with comparably Less education, more unemployment, more social assistance benefits as well as more mental and behavioural disorders (eUSM).

[Figure 2 about here]

Although the TwoStep procedure solves some of the standard problems related to determining the adequate number of clusters, it has (among other things) less satisfactory properties for dealing with mixed data types (Bacher et al. 2004). As a consequence, we validated our results by conducting a latent-class analysis (LCA) on the addressed outcomes. While our approach reported above creates a cluster solution based on how the different outcomes cluster within the individuals and subsequently assign individuals to the different groups, the LCA is used to detect the

presence of latent groups in the data (Vermunt and Magidson 2002). In the latter case, individuals are not divided into manifest groups, but rather probabilities for group membership are computed. The LCA fairly reproduced our four-cluster solution (estimates not shown).

Relevant measures of family-related circumstances in childhood were included as control variables (Table 2). Of these, three measures reflect socioeconomic conditions of the family whereas the other two measures taps more directly into the aspects of the family and home environment. All were based on information collected through various registers.

Socioeconomic conditions included childhood social class, parental income and parental education. *Childhood social class* in 1963 (age 10) was based on pre-coded occupational data concerning the head of the household (in most cases the father). The categories were: unskilled workers; skilled workers; middle class, entrepreneurs; middle class, officials; upper and middle class; and others (e.g. homemakers, pensioners and students). *Parental income* was measured through the mean of the combined earned income of both parents in 1964 (age 11). Children of parents that had income were divided into quartiles (based on the full sample), whereas those children who had parents without any registered income were put into a separate category. Information about *parental education* was collected in 1960 (age 7). It was based on the total number of household members who graduated from secondary school or equivalent. The variable was divided into three categories: no graduates; one graduate; and two graduates.

The family and home environment was assessed through information about *parental mental health problems* during the period 1953-1964 (age 0-11) and *family type* in 1964 (age 11). With regard to parental mental health problems, it had originally been divided into three categories: psychiatric problems or depressed; receiving psychiatric treatment; and committed suicide (no additional information on the exact type of problem was available). All categories were in this study used as an indicator of parental mental health problems. Finally, information on family type was included. Two categories were distinguished: children who were recorded as living in a two-parent household (biological parents or reconstituted families), and those who lived in any other type of families (single-parent household, foster parents or widow/widower).

[Table 2 about here]

The association between childhood peer status and outcome profiles in adulthood was analysed by means of multinomial regression analysis in Stata/MP 11.0. This type of analysis produces relative risk ratios (RRR). Only individuals with full information on all variables were included in the analysis (n=11,786). The cluster-robust option was used to account for the clustering of individuals within school classes. In Table 3, two models are included. The first model shows the gender-adjusted association between peer status in childhood and the outcome profiles whereas the second model also takes into account all other childhood circumstances (i.e. childhood social class, parental income, parental education, parental mental

health problems and family type). Since no statistically significant interactions (i.e. effect-measure modifications) were found between gender and peer status in the associations with the outcome profiles the decision was made to combine the analyses of men and women.

Results

The upper part of Table 3 presents the association between childhood peer status and outcomes profiles in adulthood. The gender-adjusted estimates (Model 1) support the notion of lower peer status being associated with higher risks of ending up in the more disadvantaged outcome profiles in adulthood. For example, when comparing with those with the higher peer status (i.e. 'favourites'), individuals in marginalised status positions have more than four times the risk (RRR=4.83) of ending up in the Less unemployment cluster (e) rather than in the More education cluster (E). The RRRs for the remaining status categories range between 1.76 for popular individuals and 3.68 for those in peripheral positions. The risk of individuals in marginalised positions of being found in the Unemployment cluster rather than in the More education cluster (E) is five-fold (RRR=5.00), compared to those in favourite positions. The remaining RRRs range from 1.64 for those who are popular to 3.62 for individuals in peripheral positions. Concerning the most problem-burdened cluster (eUSM), characterised by comparably Less education, more unemployment, more social assistance benefits as well more mental and behavioural disorders, the risks range between 3.32 and 12.1, depending on peer status position. In sum, a clear

gradient in each outcome profile, compared to the More education cluster (E), by peer status is found.

In the lower part of Table 3, the mutually adjusted associations between the family-related circumstances and the outcome profiles are demonstrated. Here, it is evident that individuals who had a lower social class in childhood as well as those who had parents with lower income, less education and mental health problems, have an increased risk of ending up in the Less education cluster (e), More unemployment cluster (U) and the most problem burdened cluster (eUSM), rather than in the More education cluster (E). Family structure, on the other hand, seems to be unrelated to the clustering of adult outcomes. Adjusting for all these family-related circumstances in the association between peer status and the outcome profiles decreases the strength of the association to some extent, although no substantial changes occur. For example, the risk estimate of marginalised individuals vis à vis their ‘favourite’ peers to end up in the most problem-burdened cluster (eUSM) is now 9.28 (in contrasted to the earlier estimate of 12.1), compared to ending up in the More education cluster (E). Peer status thus seems to have an independent effect on adult outcomes, acting over and above the influences of family-related circumstances.

[Table 3 about here]

It should be noted that choosing another cluster as the reference produced less pronounced gradients by peer status. For example, the RRR for marginalised individuals to end up in the most disadvantaged cluster (eUSM), rather than in the

Less education cluster (e), was 2.50. This should be compared to corresponding RRR of 12.1 which was found in the initial analysis, where the More education cluster (E) was chosen as the reference category. Thus, the largest differences by peer status are found between the More education cluster and the remaining clusters.

It should also be noted that certain problems may accompany the use of multinomial logistic regression estimates as effect measures. These estimates are (among other things) affected by omitted variables, even when these variables are unrelated to the independent variables in the model (Mood 2010; Wooldridge 2002). As a consequence, the reported effect measures of peer status on outcome profiles may not be comparable. One way to circumvent this problem is to utilize the latent clusters generated by the LCA mentioned above, and estimate our hypothesized effect of peer status on estimated probabilities to end up in the different clusters by means of OLS regression. These results (not shown) did not contradict our overall interpretation of the multinomial regression results. Thus, our reported effect measures of peer status on outcome profiles seem not to be biased due to residual variation.

Concluding Discussion

This study took its starting-point in the specific structures of childhood, focussing on the child's peer status position in the school-class context. Previous research has found long-term influences of peer status on, for example, educational attainment, unemployment and mental health. To our knowledge, the present study represents the first attempt to examine the effect of childhood peer status on a combination of adult

outcomes, rather than targeting these outcomes separately. Four outcome profiles in adulthood were identified: More education (E), Less education (e), More unemployment (U) and Less education, more unemployment, more social assistance benefits as well as more mental and behavioural disorders (eUSM). The results suggested that lower peer status is associated with increased risks of ending up the three latter, more adverse clusters, rather than in the More education cluster (E). This was particularly the case for the most disadvantaged cluster (eUSM), where the relative risks for the lowest peer status groups were exceedingly high compared to those of individuals with the highest peer status. It should however be noted that this cluster only comprised about 2 % of the sample.

Past research has established the link between family-related circumstances in childhood, such as socioeconomic conditions and factors in the home environment, and adult outcomes. This was also confirmed in the present study. Moreover, these types of condition have previously also been associated with to the child's peer status position in the school class (Almquist et al. 2010; Östberg and Modin 2007). It was therefore reasonable to assume that circumstances related to the family would provide an important explanation to the relationship between peer status and the clustering of adverse outcomes in adult life. However, the variety of factors included in the present study (i.e. parental social class, income, education, mental health problems and family type) explained the association between peer status and the outcome profiles only to a limited extent. It can thus be concluded that the long-term effects of peer status reflect processes which are partly different from those linking family-related circumstances in childhood to adult outcomes.

If family-related conditions during upbringing are not the explanation; what is? Although not empirically investigated in the present paper, a discussion of alternative pathways through which adult outcomes are affected by childhood peer status may be in place. In the beginning of the paper we maintained that a resource perspective may be relevant in order to disentangle this association. The traditional notion of ‘resources’ mirrors the distribution of for example wealth, income and status across social groups in a society. As already touched upon, these factors indeed confounded a part of the association between peer status and the clustering of adverse outcomes in adulthood in the present study. However, peer status is a phenomenon occurring at the micro-level of the classroom; established and re-negotiated through children’s daily interactions with each other. Because of this, circumstances linked to the family are not the only type of resources determining the status position of the child, nor are practical and material opportunities the only type of resources influenced by peer status.

Previous studies have shown that factors such as individual characteristics in terms of personality, behaviours, cognitive ability and social competence influence the assignment of peer status positions (Newcomb et al. 1993; Woodward and Fergusson 2000). Here, the classroom context in itself also plays an important role: the continuous interaction between students brings about a specific peer culture, affecting which norms, values and attitudes that prevail in the group. This suggests that while certain behaviours and attributes are desirable in some school classes and thereby can be enhanced in order to climb up the status ladder, they may be unimportant or even unfavourable in other classes (Östberg 2003). Peer status is, in

turn, assumed to affect the resources of a child. Again, we are not referring only to the types of resource linked to economic and material factors at the macro-level of society. The child's status position is likely to impinge on his or her amount of social power in the classroom context as well as access to, for example, social support. Social power has to do with the ability to influence the attitude and behaviours of others, whereby one gains a large amount of control over the peer context. This could prove valuable for the child's attainment of resources. Social support is commonly divided into four categories (House 1981): informational (e.g. guidance and advice), emotional (e.g. evaluative feedback), instrumental (e.g. time and money), and appraisal (e.g. evaluative feedback). These types of resources are believed to have direct beneficial consequences for life chances and may also buffer against stressful conditions (Cohen and Wills 1985).

Although it seems reasonable that peer status is closely linked to the amount of resources during the school years, the fact that it has long-term consequences deserves some special attention. Based on previous research, it seems feasible to suggest that the everyday life of a child in a lower status position is very different from that of a child with higher peer status. Moreover, it has been proposed that these experiences leave a mark on the child. Operating through various psychosocial pathways (in terms of expectations, aspirations, behaviours and choices) the amount of resources linked to childhood peer status is assumed to affect adolescent outcomes which give rise to an equal distribution of resources, which in turn influences adult outcomes. In other words, we argue that the lasting effects of peer status reflect an intricate interplay between different factors as they develop through-out the life

course (for a more detailed discussion, see e.g. Almquist 2011b; Östberg and Modin 2007).

It may be tempting to presume that the association between peer status and adverse outcomes in adulthood is primarily driven by a small and distinct group of children who are different in some ways from the majority population. This notion is commonly put forward in the field of developmental psychology, where low-status children are often assumed to be rejected or neglected by their peers because they display aggressive behaviour or withdraw from social interaction (Coie 1990; Prinstein and Aikins 2004). They are generally considered to be at risk for a wide range of adversities, compared to all other children (Bell-Dolan et al. 1995; Panak and Garber 1992; Prinstein and Aikins 2004). However, in the present study (see also Almquist 2009; Almquist et al. 2010; Östberg 2003; Östberg and Modin 2007), we find clear gradients by peer status: the risk of ending up in more adverse clusters of adult outcomes increases for each step down the social hierarchy. There is thus no threshold between individuals who have high status versus individuals with low status in terms of their risk of adverse circumstances in adulthood. Moreover, as a part of the sensitivity analysis, we adjusted for various indicators of behavioural problems (e.g. misconduct in the classroom and truancy). This attenuated the strength of the association only to a small extent. Hence, the association between peer status and adversities in adulthood cannot be reduced to a small group of children with adjustment difficulties or personality problems.

Few data materials contain detailed information about social circumstances both in childhood and adulthood as well as sociometric data. Therefore, the Stockholm

Birth Cohort Study offered an excellent opportunity to examine the association between objectively assessed (i.e. researcher defined) peer status in childhood and the clustering of adult outcomes while at the same time controlling for family-related conditions during upbringing.

The study also has some limitations that need to be recognised. First, the issue of selection is particularly important to bear in mind when using information gathered at various points across the life course. While the attrition in the Stockholm Birth Cohort Study is very low it still contributes to a positive selection: individuals who had lower peer status and who were brought up under more adverse conditions were less likely to participate in the sociometric study as well as being included in the follow-up (Modin et al. 2010; Stenberg et al. 2006). The second concern is the way in which peer status was measured: the choice of classmates on the basis of work partner may to some extent reflect how well the particular classmate performs at school. Third, while the correlation between peer status and cognitive ability was moderate in the present data material, future studies should also explore alternative sociometric questions to assess peer status (e.g. which classmates who are most liked). Fourth, since it was not a part of the study aim, the present study did not involve any empirical investigation of potentially mediating factors which could link childhood peer status to the clustering of adverse outcomes in adult life. Future studies should therefore further examine possible pathways between peer status and adult outcomes. For example, intermediate circumstances in adolescence and young adulthood (e.g. educational choices, health-related behaviours, and entrance into the labour market) as well as the access to various types of resource present at different

stages of the individual's life course (e.g. material assets, social support and coping strategies) may provide important clues to this association.

To sum up, we conclude that childhood-specific structures in terms of the peer status hierarchy seem to constitute an essential part of children's lives with important consequences for individuals' subsequent life chances, acting over and above the influences originating from the parents. At least in Western societies, where the overall level of living conditions is relatively high, attempts to tackle the long-term effects of adverse childhood circumstances should thus not exclusively focus on improving conditions related to the family. Here, we argue that more attention needs to be drawn to the fact that children also participate in a social world outside the home, namely the peer context.

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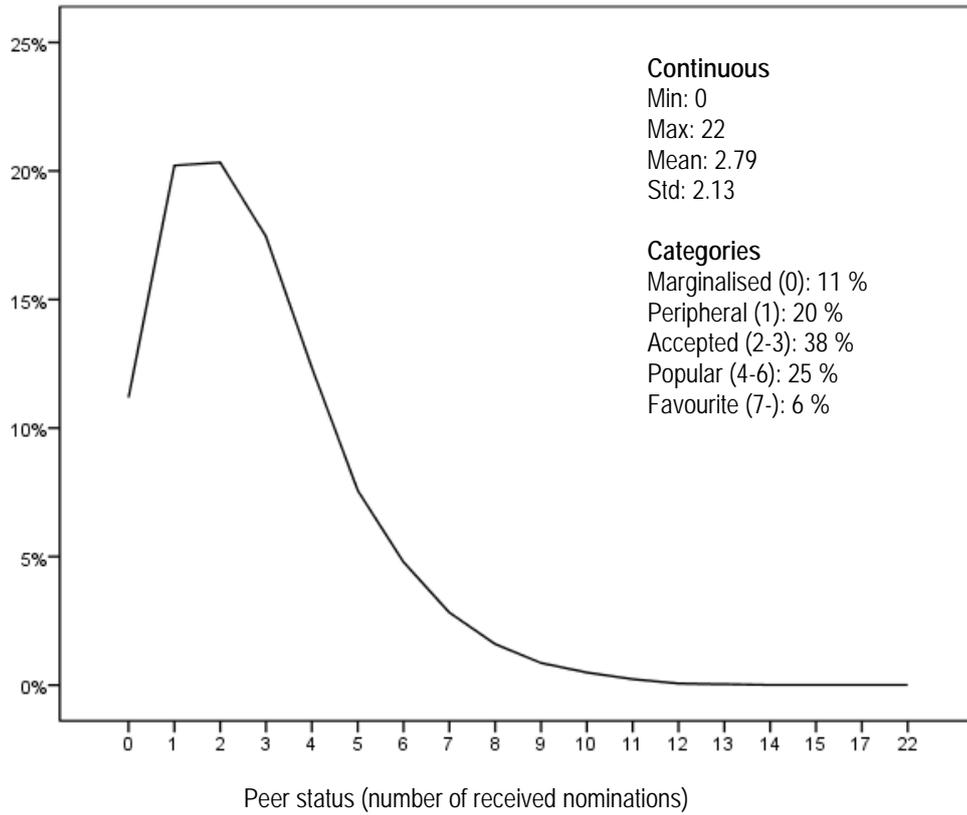
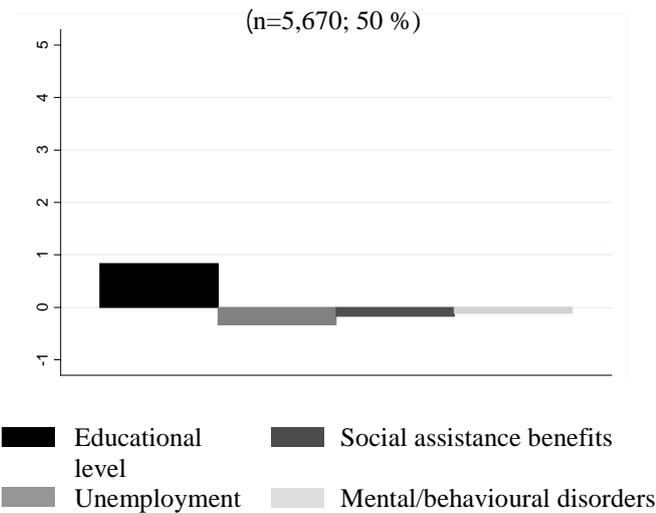
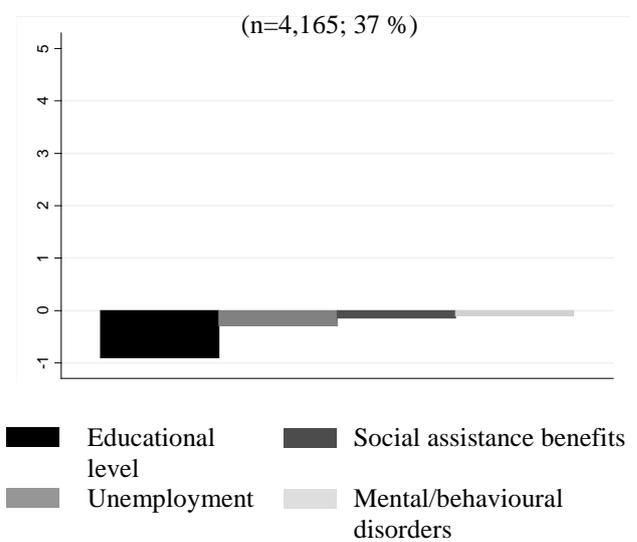


Figure 1: The Distribution of Peer Status in 1966 (n=11,270)

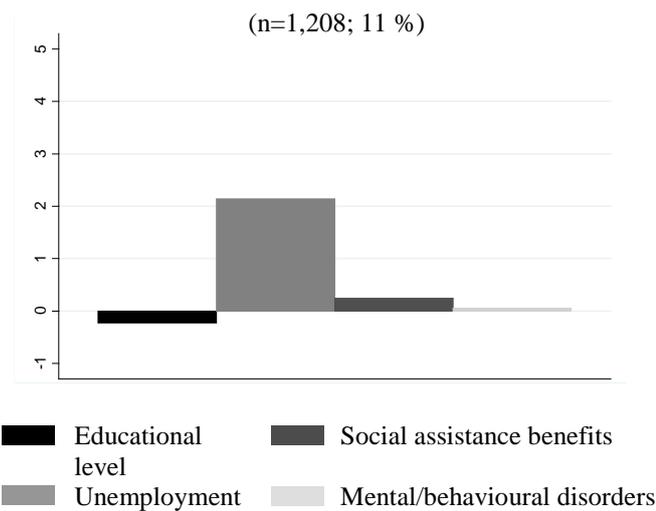
Profile 1: **E** (comparably more education; reference cluster)



Profile 2: **e** (comparably less education)



Profile 3: **U** (comparably more unemployment)



Profile 4: **eUSM** (comparably less education, more unemployment, more social assistance benefits, more mental and behavioural disorders)

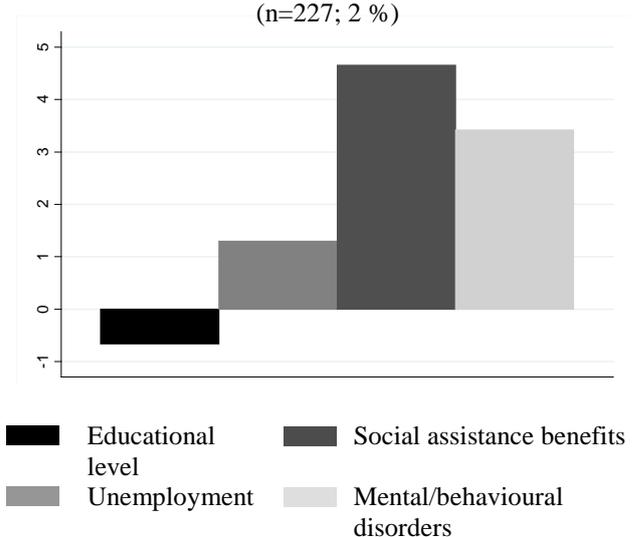


Figure 2: Dependent Variable: Accumulated Outcome Profiles (Cumulative Incidence Within Brackets). Results from TwoStep Cluster Analysis (Means, Standardised Values)

Table 1: Descriptive Statistics for the Outcome Variables (n=11,270)

Variables	Operationalisation	Min	Max	Mean	Std
Educational level (2001)	1=Pre-primary education 2=Primary and lower secondary education, less than 9 years 3=Primary and lower secondary education, 9 (or 10) years) 4=Upper secondary education, less than two years 5=Post-secondary education, less than two years 6=Post-secondary education, two years or longer 7=Post-graduate education	1	7	4.06	1.48
Unemployment (1992-2001)	Days of registered full-time unemployment	0	2409	130.08	321.82
Social assistance benefits (1992-2001)	Amount of income from social assistance benefits, expressed in hundreds of SEK	0	9811	88.20	483.73
Mental and behavioural disorders (1992-2001)	Number of hospital admissions (overnight stays)	0	101	.23	2.06

Table 2: Descriptive Statistics for the Control Variables (n=11,270)

Variables	n	%
Childhood social class (1963)		
Unskilled workers	1,767	16
Skilled workers	2,516	22
Middle class, entrepreneurs	886	8
Middle class, officials	3,985	35
Upper/upper middle	1,854	16
Others	262	2
Parental income (1964)		
Quartile 1 - low	2,160	19
Quartile 2	2,520	22
Quartile 3	2,717	24
Quartile 4 - high	2,678	24
No income	1,195	11
Parental education (1960)		
No degree	7,925	73
One degree	2,250	21
Two degrees	656	6
Parental mental health problems (1953-1965)		
Yes	456	4
No	10,814	96
Family structure (1964)		
Two-parent household	10,207	91
Other	1,063	9

Table 3: The Association between Peer Status and Outcome Profiles in Adulthood. Gender-adjusted Relative Risk-ratios (RRR) From Multinomial Regression Analysis (n=11,270). Cluster-robust Standard Errors in Brackets

	Profile 2: e		Profile 3: U		Profile 4: eUSM	
	Model 1 (S.E.)	Model 2 (S.E)	Model 1 (S.E.)	Model 2 (S.E)	Model 1 (S.E.)	Model 2 (S.E)
Peer status						
Marginalised	4.83*** (.52)	3.93*** (.44)	5.00*** (.90)	4.27*** (.77)	12.1*** (6.37)	9.28*** (4.90)
Peripheral	3.68*** (.38)	3.23*** (.35)	3.62*** (.62)	3.26*** (.57)	7.35*** (3.82)	6.03*** (3.16)
Accepted	2.67*** (.27)	2.31*** (.25)	2.46*** (.39)	2.21*** (.35)	5.25*** (2.68)	4.35** (2.22)
Popular	1.76*** (.18)	1.64*** (.18)	1.66** (.28)	1.58** (.27)	3.32* (1.75)	3.03* (1.59)
Favourite (ref.)	1.00	1.00	1.00	1.00	1.00	1.00
Childhood social class						
Unskilled workers		3.93*** (.42)		2.02*** (.27)		2.37** (.70)
Skilled workers		2.94*** (.28)		1.67*** (.20)		1.56 (.44)
Middle class, entrepreneurs		1.90*** (.21)		1.18 (.18)		.81 (.29)
Middle class, officials		1.98*** (.17)		1.19 (.13)		1.33 (.34)
Upper/upper middle (ref.)		1.00		1.00		1.00
Others		2.82*** (.48)		1.11 (.27)		.87 (.43)
Parental income						
Quartile 1 - low		1.70*** (.14)		1.59*** (.18)		2.39*** (.65)
Quartile 2		1.62*** (.13)		1.28* (.14)		2.50*** (.66)
Quartile 3		1.48*** (.11)		1.30** (.13)		1.42 (.37)
Quartile 4 - high (ref.)		1.00 (.15)		1.00		1.00
No income		1.63***		1.61*** (.20)		1.97* (.60)
Parental education						
No degree		1.98*** (.19)		1.76*** (.24)		1.60 (.46)
One degree		.86 (.09)		1.29 (.19)		.99 (.33)
Two degrees (ref.)		1.00		1.00		1.00
Par. mental health problems						
Yes		1.32* (.15)		1.72*** (.27)		2.94*** (.70)
No (ref.)		1.00		1.00		1.00
Family structure						
Two-par. household (ref.)		1.00		1.00		1.00
Other		.97 (.09)		1.16 (.15)		1.53 (.35)

*p<.05 ** p<.01 *** p<.001

Profile 1: **E** /More education (reference cluster); Profile 2: **e**/Less education; Profile 3: **U**/More unemployment; Profile 4: **eUSM**/Less education, more unemployment, more social assistance benefits, more mental and behavioural disorders.

Note: Model 1 is adjusted only for gender; Model 2 is mutually adjusted for all included variables.