המכון למחקר כלכלי בישראל
על-שם מוריס פאלק בע"מ (חל"צ)
The Maurice Falk Institute for
Economic Research in Israel Ltd.

The Nature versus Nurture Debate and the Direct Effect of Parental Influence: Evidence from the Israeli Kibbutz

by

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Discussion Paper No. 18.03

November 2018

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The Nature versus Nurture Debate and the Direct Effect of Parental Influence: Evidence from the Israeli Kibbutz

By

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Abstract

To what extent is the inter-generational correlation in human capital driven by shared genes versus parental influence over a child's upbringing? In this paper, we exploit a unique social experiment in which children born on the Israeli kibbutz were often raised in group living arrangements known as 'children's houses'. By exploiting variation in the timing of the closure of the houses, we identify three key results. First, children raised in the houses are less similar to their parents than kibbutz children raised in conventional living arrangements. Second, the houses had a positive effect on outcomes for children with below-average parental education, but lowered education for children with more educated parents. Third, the parent-child correlation is monotonically decreasing in the years the child spent in the children's house. In particular, we find that the elasticity of child outcomes to parental education is a third higher among children raised at home than those who spend their entire childhood in a children's house. The results highlight the role of direct parental influence in generating inter-generational correlation of human capital.

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Jerusalem, November 2018 • Discussion Paper No. 18.03

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I. Introduction

To what extent is the similarity between parents and children driven by their shared genes versus the influence of parents over their children's upbringing? The popular 'nature-nurture' debate draws the attention of social scientists, policymakers, and even parents, as it pertains to the fundamental understanding of what determines an individual's professional success. A key research question is how important parental involvement is for child development. Insofar as the key ingredient to success is more active parenting, efforts to equalize spending on public goods for disadvantaged populations are likely to be less important than policies which facilitate more active parenting, such as mandated maternity or paternity leave, or Head Start in the United States, which has a component that promotes parental involvement. However, it is generally unclear the direct role of parent-child interaction in determining child outcomes, and consequently, the potential benefit of these programs.

In this paper, we examine the role of parental influence on child outcomes in the context of a unique social experiment conducted on Israel's kibbutz: the *batei yeladim*, or "children's houses". The kibbutz required that all members collectivize both their economic resources and their childrearing duties, and thus dictated that children be taken away from parents shortly after birth to be placed in the care of a group nanny. This implied that all children on the kibbutz received a similar level of attention and investment - a relatively homogenous "nurture". For several decades this was the dominant mode of child-rearing on the kibbutz, with nearly all kibbutz children born in the 1950s and 1960s raised in this unconventional setting. However, over time, a backlash against the children's houses developed, and less ideologically extreme kibbutzim (plural of kibbutz) began to allow children to co-reside with their parents. The era of children's houses was finally brought to a close in 1991, when the Gulf War spurred nearly all

the remaining kibbutzim to dissolve their children's houses in response to pressure from parents. As we will describe, the variation in closure timing allows us to estimate the impact of the 'children's houses' on academic outcomes and how closure affected the similarity of outcomes among parents and their children.

In our empirical analysis, we identify three key findings which suggest that parental involvement is a significant factor driving the inter-generational correlation in human capital. First, we find that the inter-generational correlation is markedly higher for children raised with parents than those raised in the children's house. Second, we find that the houses raised the education levels of children for parents of low education, but lowered education levels for children with more educated parents. This suggests that the houses promoted equality, but with negative consequences for the offspring of the best and brightest kibbutz members. Third, we find that the similarity of academic outcomes between parents and children is monotonically decreasing in time spent in a children's house, implying a 'dose-response' relationship between parental exposure and parent-child similarity. In particular, we find that the elasticity of child outcomes to parental education is a third higher among children raised at home than those who spend their entire childhood in a children's house. As a policy implication, it may be that programs geared towards fostering more parent-child interaction could have beneficial effects on children, especially for well-educated parents.

The rest of the paper proceeds as follows. Section II presents background information on the kibbutz movement, the children's houses, and how our study fits into the existing literature on the 'nature-nurture' debate. Section III presents our data and empirical results. We conclude in Section IV.

II. Background

A. The Kibbutz Movement and the 'Children's Houses'

The Israeli kibbutz has attracted the attention of researchers in several disciplines, including sociologists, anthropologists, and social psychologists. The kibbutz members shared their salary, their costs of living, and in many cases, even personal items such as clothing. This has provided a natural experiment that has been exploited by researchers across the social sciences. However, no single feature of the kibbutz has generated more controversy than the children's houses. Shortly after birth, children would be separated from their parents and brought to a children's house. They would then be entrusted to the care of a single caregiver, or *metapelet*, who was of no biological relation to the baby but was responsible for the child's welfare. Parents were only allowed to visit the child during afternoons, following the completion of their kibbutz-assigned tasks.

This unorthodox context for raising children has attracted intense scrutiny from psychologists interested in the potential attachment disorders related to early separation from parents. Studies of kibbutz children - and follow-up studies of them as adults - found that they lagged behind other Israeli children developmentally and exhibited higher incidence of attachment disorders (eg. Rabin 1958, 1965; Rabin and Beit-Hallami 1982, Sagi et al. 1985). Berman (1988) summarized these studies findings with the conclusion that the children's houses had an impact on personality development by causing "a consistent interference with emotional experience, creativity, and the quality of object relations as expressed in intimate relationships" (p. 327). These studies spurred a backlash against the children's houses and contributed to their closure during the 1980s and early 1990s.

During this period of challenges to the old-style kibbutz's ideology for child rearing, the movement faced economic crisis as well as the left-leaning Labor party's defeat in the 1977 election led to a significant decline in the economic solvency of many kibbutzim. Large reductions in governmental subsidies forced many to consider privatizing the costs of childrearing and allow members to earn differential pay so as to stabilize their budgets and prevent the exit of their most talented members.[1] The movement towards privatization represented a fundamental ideological capitulation of the kibbutz and generated heated debates among members, with many kibbutzim eventually voting to privatize but not without tremendous internal conflict (Abramitzky 2008). The debate over privatization mirrored the kibbutz's internal debate over dissolving the children's houses. On the one hand, the houses had the benefit of promoting an egalitarian lifestyle that was central to the ideology of the movement. On the other hand, the houses reduced the ability of parents to influence their children's outcomes, potentially reducing welfare for the best and brightest parents and their children. In this paper, we examine the impact of the children's houses and their closure on child academic outcomes. Did the children's houses achieve the intended goal of leveling adult outcomes? Which children benefited and which were harmed by this alternative parenting style? And what are the more general lessons from this social experiment on the determinants of human capital outcomes? In the next section, we present our framework for empirically assessing the influence of the children's houses on later-life outcomes, and the implied importance of nature versus nurture.

[1] Economists have exploited these changes to examine how human capital formation responds to increases in the private returns to wages (Abramitzky and Lavy 2017), and the impact on fertility of privatizing the costs to childbearing (Ebenstein et al. 2016); both studies find large shifts in behavior, with kibbutz membership increasing their human capital and reducing their family size, in line with economic theory that their behavior would become more similar to the overall Israeli population when faced with traditional economic incentives.

B. Nature, Nurture, and the Inter-generational Correlation in Human Capital

The connection between parent and child human capital outcomes can be thought of as operating through three distinct channels. First, parents and children share genetic material, and this effect is 'nature'. Second, parents who are more professionally successful are able to provide their children greater opportunities than less successful parents. This can take the form of enrollment in better schools, participation in after-school enrichment programs, or access to social connections to secure internships and full-time jobs. This effect we will refer to as 'professional or financial nurture', as it relates to all the benefits accruing to a child of having access to their parents' connections or financial resources. The third channel, and the focus of our study, is the interaction between parents and children one on one, or 'personal interaction'. This channel captures all the ways that more successful parents are able to influence their children to promote similarity (and success) other than through access to money or social networks. This occurs through the transmission of values (e.g. stressing the importance of hard work), through different parenting styles, such as more frequent reading of 'bed time stories' or discouraging the children from watching too much television. This effect may also be quite subtle, as children in their formative years hear their parents speak amongst themselves about politics, art, or other ideas that directly facilitate cognitive development.

By focusing on the Israeli kibbutz, we are able to make progress on examining the importance of this third channel. Our study design has several significant advantages for this purpose.[2] First, since we rely on Israeli administrative data, we have the universe of children and their biological parents. In many studies (e.g. Chetty et al. 2014), parent-child linkages are

[2] See Solon (1999) for a review of the early empirical evidence on inter-generational mobility in the US and Sacerdote (2011). Chetty et al. (2014) examines this issue using more recent and comprehensive data.

determined indirectly, such as through tax records.[3] This generates some slippage, as not all adult household members will be genetically connected to dependents and not all genetically connected children of the household head will be claimed as dependents. We overcome this challenge by relying on data from Israel's Ministry of the Interior, which carefully records the biological mother and father of all Israelis. Therefore, 'nature' can be very well measured in our universal sample of Israelis and their birth-parents. Second, since the kibbutz collectivized parental financial resources, the 'financial nurture' channel is essentially non-existent. While some kibbutzim had greater financial resources than others, within the same kibbutz, the financial resources available to children were equivalent across all the children. Therefore, the 'natural experiment' of the children's houses and their closure presents an opportunity to assess the direct influence of parenting on child outcomes that operates only through personal interaction.

An additional attractive feature of analyzing the children's houses is that alternative empirical strategies for disentangling nature and nurture have significant drawbacks. The two primary alternative strategies are comparisons of (1) the correlation between fraternal versus identical twins, who differ only in terms of their genetic similarity, and (2) studies on adopted children, who are genetically unrelated to their foster parents, and so the role of nurture alone is identified (Behrman et al. 1980, Plomin et al. 1988, Plug and Vijverberg 2003, Sacerdote 2007). Our study has several significant advantages over each. First, twin studies are generally on small samples and rely on reported information by the survey participants, whereas our study is on a large administrative data set. Second, twins studies assume that the similarity of 'nurture' is equivalent for identical and fraternal twins, and so if identical twins are more similar than

[3] Note that Chetty et al. (2014) estimates that over 95% of children are claimed on a parent's taxes at some point, implying that some children are excluded from his analysis. Their method also leads him to focus only on children born post 1980, since his method is only feasible for children claimed after the 1986 tax reform.

fraternal twins, this is attributed to having more similar genes. But it may be that identical twins have a more similar environment than fraternal twins. First, they are likely to be treated more similarly by their parents, teachers, and friends than fraternal twins. Second, because twins spend time together, identical twins will have more similar nurture than fraternal twins because they are exposed to a twin who is more similar to themselves. All this extra similarity in nurture will be mis-attributed to the role of shared genes, and so the studies may overstate the importance of genetics. Third, twin studies do not examine the consequences of varying nurture, only nature, and thus are not well-suited for understanding the gradient between parental nurture and child outcomes. Put differently, they can only provide information on the importance of what is not shaped by policy, so even if these studies are important, they fail to provide actionable policy implications (Sacerdote 2011). Therefore, while the results of these studies are often thought provoking, the variation generated by the children's houses is of potentially more relevance to understanding how parents shape child outcomes and where resources should be allocated to improve child outcomes.

In adoption studies, scholars compare the similarity between parents and their biological children versus their adopted children. Provided the adopted children are assigned randomly to the parents, this allows the econometrician to compare (a) how similar adoptees are to their parents relative to biological children and (b) the gradient between adoptee outcomes and parental features that should be attributed entirely to nurture. While adoption studies can provide useful insights, they suffer key limitations in terms of internal and external validity. First, adopted children are abandoned by their birth parents due to (presumably) difficult circumstances, which may imply that they are not representative of the overall population of children. Second, adopting parents may treat their adopted children differently than their

biological children, or have idiosyncratic features themselves which leads them to choose to adopt but be quite different than the average parent.[4] These two issues are not relevant for the kibbutz, where the handing over of newborn children to the care of the children's houses was compulsory for all children and all parents. Moreover, in contrast to adopted children, the children born on the kibbutz were relatively similar in ethnic makeup and other dimensions to other Israelis, making the lessons potentially more valuable in terms of external validity than studies relying on adoption or comparison of twins.

C. Early-life Exposures and Adult Outcomes

Understanding how early-life experiences affect success later in life is of interest both to academics and to policymakers. In a landmark series of studies, Barker (1989, 1995) found that people with low birth weight are at greater risk of developing coronary heart disease as adults. The "Barker Hypothesis" is now widely accepted and has led to a rich literature examining how very early conditions can affect health. These results have spurred a growing literature in economics regarding the impact of early life investments on educational and economic outcomes among children. Heckman (2006, 2007) argues that the payoff to investing in children is extremely large at young ages. He presents evidence from experimental interventions among 3-4-year-old children. This evidence has increased support for Head Start in the United States and for other programs aimed at helping children prior to kindergarten. However, there is very little evidence regarding the impact on children of large and abrupt changes in parental investments at

[4] For example, Sacerdote relies on data taken from Holt International Children Services. The program places Korean children given up for adoption with foster parents in a quasi-random fashion, which has the desirable consequence of eliminating any correlation between parental features and child quality. However, parents are carefully screened and self-selected to participate in this program, and so they may be unrepresentative of the overall population. Likewise, it is unclear where these children would rank in the overall skill distribution otherwise, in light of the fact they were given up for adoption.

a young age. The closure of the children's houses represents an opportunity to examine this question, provided that the 'treatment' status of being raised in a children's house can be treated as an exogenous variable. This is discussed in the next section.

III. Empirical Results

A. Data

Our data are compiled through merging several data sets. Our core sample is composed of all children who were born between 1974 and 1993 and who were observed living on a kibbutz in the first census following their birth - which was in either 1983 or 1995.[5] These data are combined with administrative data from several government ministries, including the ministry of interior, the ministry of education, and the tax authority. Together, these provide us with detailed information on demographics, educational outcomes, and exact wages information for all individuals in the sample, as well as that of their parents. The data on the timing of closure of children's houses were compiled by the authors for the purpose of this project by directly communicating with 264 kibbutzim. As shown in Figure 1, the kibbutzim closed their houses at different points in time, with a modal closing date of 1991 due to the Gulf War,. Widespread fear that a Scud rocket could land on a children's house led 14% of kibbutzim to dissolve their children's home in 1991 alone. This led to a rapidly shrinking share of the kibbutz population that was raised in a children's home. The decline was from nearly 80% of children born in 1975 to 25% by 1985, and then to almost zero by 1991. This rapid decline allows us to exploit comparisons between children of the same generation who differ in their assignment status.

[5] For children with no location information in 1983, we use the 1995 response to identify whether the child lived on a kibbutz.

In Table 1, we present the summary statistics for a sample of children from the kibbutzim. The sample is composed of 36,369 children who were born on a kibbutz. In Panel A, we report sample means for their demographic outcomes; their age in 2015, their sex - and since we are interested in understanding how the children's houses affected the inter-generational transmission of human capital - the educational attainment of the parents. Note that the fathers and mothers of the children in the sample have on average 13.7 and 13.9 years of education, respectively. This reflects the relatively high educational attainment among kibbutz members (Rosner 1990). In Panel B, we report the available academic outcomes for the children: whether they studied at a post-secondary institution, whether they qualified for higher education (*zakaut*), and their scores on their *Bagrut* exams in Math and English. The *Bagrut* scores are used both to determine *zakaut* status, and as a gatekeeper for elite institutions and selective fields of study at higher education institutions in Israel. In Panel C, we report the time spent in children's houses among the children in our sample, including whether a child ever lived in a children's house, the number of years spent in the house, and the year in which the house at the kibbutz was closed. We also report the log of kibbutz wealth in thousands of shekels in 2001. This was collected by the *Matei Hesder Hakibbutzim*, the organization which was responsible for the financial restructuring of the kibbutz when many were forced to privatize and which collected this information in 2001. These data were provided by the Kibbutz Research Center of Haifa.

B. Closing the Children's Houses: Was this exogenous to other factors determining the relationship between parent and child outcomes?

A natural concern is that the children raised in kibbutzim with children's houses were different than those raised in their parent's home. For example, the more ideologically extreme kibbutzim were more likely to have a children's house and were more likely to resist its closure.

If the strength of a kibbutz's ideological zeal is correlated with their preferences related to our outcomes of interest, our treatment variable will be endogenous. We address this issue empirically by estimating models with kibbutz fixed effects. By doing this we are exploiting the *timing* of the closure. Provided that a kibbutz's ideology did not change dramatically during the time that the children's house was dissolved, the children born before or after should be drawn from similar populations. Note that the houses were closed immediately following a kibbutz-wide vote, so two consecutive cohorts of children born on the kibbutz were likely to have very different childhood experiences. Ideology and preferences would have to change very abruptly to invalidate our empirical strategy. Second, we demonstrate that the timing of closure is not related to kibbutz wealth. As shown in Figure 2, we show that there is no statistically significant relationship between either (Panel A) kibbutz wealth or (Panel B) parental education and the timing of the children house's closure. While this does not entirely rule out the possibility that unobserved determinants of child outcomes are correlated with the decision to close the children's home, it is compatible with our qualitative evidence that the decision to close the home was related to ideology rather than factors that would influence the correlation between parent-child outcomes. Third, as mentioned, 14% of kibbutzim closed their children's house in response to the Gulf War. Insofar as the war's timing does not directly affect any of our outcome variables except through its impact on growing up in a children's hosue, children born on a kibbutz in a children's house in the years before and after the Gulf War should be otherwise similar. While we only have three birth cohorts born following the war, for this sub-sample, the claim that closure was exogenous to outcomes is very plausible.

C. Children's Houses, Parental Education, and Qualification for Higher Education

In Table 2, we examine how a child's qualification for higher education (*zakaut*) varied by child exposure to the children's house, and how this varied for children with more or less educated parents. In all the regressions, our dependent variable is whether an individual child qualified for higher education (1=yes), and so the coefficients can be interpreted as a Linear Probability Model. Note also that in all specifications we include birth year and community (or kibbutz) fixed effects, so the variation we are exploiting is due to differences in the timing of the closure of children's houses. In column 1, we demonstrate that children are significantly more likely to qualify for higher education if their parents are more educated, with an additional year of father or mother's education increasing observed qualification rates by 1.5 and 1.0 percentage points respectively.

In column 2, we add a control for whether the child was born in a children's house. Interestingly, it has almost no effect on the average rate of matriculation. The coefficients on parental education remain unchanged as well, and it seems that children on average were not significantly affected by being raised in a children's house. However, in column 3 - where we interact having been raised in a children's house with parental education - all the coefficients change, and a striking pattern emerges: the coefficient's on parental education increase slightly, the main effect of being raised in a children's house becomes large and positive, and the coefficient on the interaction between parent's education and being raised in the children's house is large, negative and significant. This implies that the children of better educated parents would have been better served growing up with their parents, whereas the children with low educated parents had more success growing up in the children's house. While on average the children's house was not a major factor in determining child success, it benefitted the children from less

educated parents and harmed those from more educated parents, relative to having grown up in a conventional living arrangement.

In columns 4 and 5, we consider this relationship broken down for boys and girls separately. The results are similar qualitatively to the results in the overall sample, but reveal that boys are more responsive to parental education than girls; the coefficient on both father's and mother's education is higher for boys. Furthermore, the result that the children's house was detrimental for children from high-educated parents is stronger for boys than girls, suggesting that the children's house had less impact on the outcomes of girls relative to boys. Interestingly, the one interaction coefficient that remains significant at the 5% level is that boys remain very sensitive to mothers' education, with boys in the children's house having a 0.71 lower percentage point chance of qualifying for higher education for every additional year of mother's education, relative to children raised at home.

In Table 3, we repeat this exercise using *Bagrut* exam scores. We focus on Math and English scores, and find that the results line up well with those found in Table 2. Again, the children's house appears detrimental to children with high-educated parents, with somewhat greater sensitivity reported for boys relative to girls and on English relative to Math. This is somewhat logical, since the English skills a child develops are presumably more closely tied to parental influence than math. English skills are a significant component of higher education in Israel, and so it may be that exposure to more educated parents has a more significant positive impact on a child's English development than for math. Alternatively, it could be that language exposure is more related to parental involvement than math skill, which might be more innate, or that math skill development is more easily provided by schools rather than at home.

D. Dose-Response: Does the length of time spent in the children's home affect the magnitude of the impact?

A natural way to examine whether an intervention has a significant impact is to test whether a more severe version of the intervention yields larger results. Indeed, as shown in Figure 3, we find that the longer the child spent in the children's house, the weaker the relationship between parental education and qualifying for higher education. The figure plots the coefficients from a set of regressions where the outcome is qualifying for higher education, and the explanatory variable of interest is combined parental education, with controls for birth year and community fixed effects. The sample is stratified into six categories: children raised at home, those with 1-2 years in a children's home, and those with increasingly greater exposure to the children's home (3-5 years, 6-9 years, 9-12 years, 12+ years). The figure reveals an almost monotonically decreasing relationship between the impact of parental education on child qualification rates and the time spent in the parents' home. The coefficient estimates indicate that a child raised entirely at home is 1.5 percentage points more likely to qualify for higher education for each additional year of parental schooling. However, for children raised entirely in the children's house, this coefficient is roughly 1.0, implying that each additional year of parental schooling drops by a third in its effectiveness. This is strong evidence that children's direct exposure during their formative years is partly responsible for the traditional observation that parents and children exhibit a correlation in their academic outcomes.

E. Parental versus Peer Effects: Comparing Children Raised at Home versus those Raised at the Children's Houses

Children are presumably influenced by their parents, and their peer group. One

interpretation is that the children's houses reduced the first exposure and increased the second. If this is indeed the case, we would anticipate that outcomes among children growing up in the group context would become more weakly correlated with parental outcomes and more strongly correlated with the group's average. We test this hypothesis in Table 4, where we estimate 'horse race' regressions. This means that we predict a child's qualification for higher education using both the parent's combined education, and the average qualification rate among children raised in close proximity to their peers in the same children's house. As a proxy for this peer group, we consider all children born in 3-year bins at a particular kibbutz. We calculate this group's average qualification rate, excluding the child herself, and drop all children in a 3-year cohort with fewer than 10 children. The results in Table 4 demonstrate that indeed, children raised in the group context have outcomes more weakly correlated with their peer group's success and more strongly correlated with their parents education. For example, for boys, the impact of an additional year of parental education declines from 1.8 to 1.1 percentage points, but the impact of peer matriculation rates *increases* from 30.1 percentage points 42.6 percentage points. This suggests that the children's house increased the strength of peer effects while lowering the impact of parental effects. The results are qualitatively similar for girls, with children's houses reducing the impact of parental education and increasing the relevance of the birth cohort's success for predicting one's own success. The implication is that the children's house arrangement reduced child exposure to parents and increased child exposure to peers. This is manifest in their qualification rates. A slightly different interpretation is that the shift was away from parental exposure to the *metapelet*, who was charged with many child-rearing responsibilities that are usually handled by parents, and the shared impact of the *metapelet* for children in the same birth cohort results in a stronger correlation between peer and child

outcomes.

IV. Conclusion

One of the hallmarks of the kibbutz was the children's house, an institution which was intended to create equality of opportunity for the next generation of kibbutz members. The results presented here that indicate that it was indeed successful in lowering the correlation between parent and child outcomes, thereby reducing inter-generational persistence in inequality. However, our results also suggest that this was accomplished at the expense of children with highly educated parents. As the kibbutz's ideology weakened over time, the children's houses were dissolved, and the kibbutz became more similar to the rest of Israel - with tighter relationships between parents and children, and with weaker relationships between children and their peer group. More broadly, the results highlight the importance of parent-child interaction in generating a correlation in outcomes. The children's houses, which reduced parental time exposure with their children, significantly reduced the similarity of education outcomes between parents and children. Among children raised entirely in the children's house, they appear a third less responsive to parental education than their peers raised in traditional living situations providing strong evidence that the inter-generational elasticity between parents and children has a significant component that can be attributed to how parents interact with their children. As a policy implication, programs geared towards increasing parental investment in children in terms of time and education can have significant impact on child outcomes, especially for well-educated parents.

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Table 1

Sample Means of Children Raised on a Kibbutz, Birth Cohorts 1974-1993

	Mean	Standard Deviation	Min	Max
	(1)	**(2)**	**(3)**	**(4)**
Panel A: Demographic Variables				
Age in 2015	31.7	5.6	22.0	41.0
Male (1=yes)	0.50	0.50	0.0	1.0
Father's Education (years)	13.7	2.8	0.0	20.0
Mother's Education (years)	13.9	2.7	0.0	20.0
Log Wage (in 2013)	10.8	1.3	0.0	15.7
Panel B: Academic Outcomes				
Post-Secondary Education	0.34	0.47	0.00	1.00
Qualification for Higher Education (*zakaut*)	0.67	0.47	0.00	1.00
Math Test Score (*Bagrut*)	82.6	20.3	50.0	120.0
English Test Score (*Bagrut*)	95.2	17.4	50.0	120.0
Panel C: Kibbutz Variables				
Ever Lived in a Children's House	0.46	0.50	0.00	1.00
Years in Children's House	3.25	4.68	0.00	18.00
Year Children's House Closed	1982.1	8.2	1952	1997
Kibbutz Wealth (log)	8.98	1.04	6.63	11.85

Source : Israel Central Bureau of Statistics, Ministry of Interior (2015), Ministry of Education (2015), Tax Authority (2013), Kibbutz Research Center of Haifa (2005)

Notes : N=36,369. Sample is composed of children born between 1974-1993 who were recorded as living on a kibbutz in the 1995 census. Age is reported for 2015 from the Ministrity of Interior population roster. Academic information is provided by the Ministry of Education and wage information is provided by the Tax Authority. Information on the kibbutz wealth is provided by the Kibbutz Research Center and informatin on closure timing was collected directly by the author through consultation with the kibbutzim directly. The math and english test scores are from the *Bagrut* exam, and are adjusted to account for bonuses given to students for taking more difficult versions of the tests.

Table 2

Children's Houses, Parental Education, and Predicting Qualification for Higher Education

	(1)	(2)	(3)	(4)	(5)
Father's Education	0.0147***	0.0147***	0.0181***	0.0202***	0.0159***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Mother's Education	0.0103***	0.0103***	0.0137***	0.0142***	0.0131***
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Children's House Main Effect		0.0043	0.1617***	0.1698***	0.1504***
		(0.009)	(0.031)	(0.046)	(0.042)
Children's House * Father's Education			-0.0058**	-0.0049	-0.0058*
			(0.002)	(0.004)	(0.003)
Children's House * Mother's Education			-0.0057**	-0.0071**	-0.0050
			(0.002)	(0.004)	(0.003)
Constant	0.2864***	0.2826***	0.1816***	0.0993**	0.2587***
	(0.017)	(0.019)	(0.027)	(0.039)	(0.036)
Observations	33,107	33,107	33,107	16,548	16,559
R Squared	0.050	0.050	0.050	0.061	0.058
Sample	All	All	All	Boys	Girls

Notes : Dependent variable is qualifying for higher education (1=yes), or *zakaut* . The variable "Children's House" is defined as 1 for any children which were born before the closure of the Children's House. All regressions include birthyear and *yishuv* (community) fixed effects. The regressions exclude children who lived on a kibbutz which never had a Children's House.

Table 3

Children's Houses, Parental Education, and Predicting Bagrut Scores

	Math		English	
	Boys	Girls	Boys	Girls
	(1)	(2)	(3)	(4)
Father's Education	1.14***	0.93***	1.00***	0.82***
	(0.104)	(0.098)	(0.089)	(0.080)
Mother's Education	0.63***	0.61***	0.73***	0.60***
	(0.107)	(0.102)	(0.092)	(0.084)
Children's House Main Effect	9.10***	7.87***	10.94***	7.18***
	(2.010)	(1.840)	(1.725)	(1.517)
Children's House * Father's Education	-0.24	-0.34**	-0.44***	-0.46***
	(0.152)	(0.140)	(0.131)	(0.115)
Children's House * Mother's Education	-0.36**	-0.23	-0.30**	-0.08
	(0.157)	(0.146)	(0.135)	(0.121)
Observations	16,093	16,264	16,093	16,266
R Squared	0.079	0.098	0.100	0.122

Notes: Dependent variable is qualifying for higher education (1=yes), or *zakaut* . The variable "Children's House" is defined as 1 for any children which were born before the closure of the Children's House. All regressions include birthyear and yishuv (community) fixed effects. The regressions exclude children who lived on a kibbutz which never had a Children's House.

Table 4

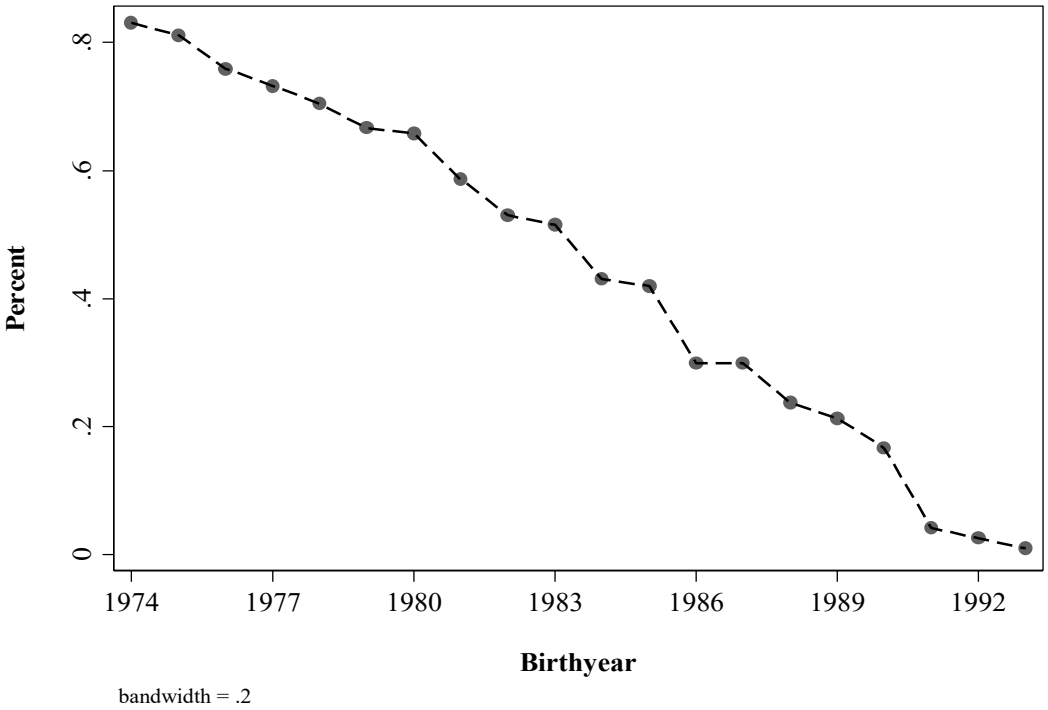
Parental versus Peer Effects: Comparing Children by Whether They Were Born in a Children's House

	Boys		Girls	
	No Children's House	Children's House	No Children's House	Children's House
Parent's Education	0.0175***	0.0112***	0.0156***	0.0085***
	(0.001)	(0.002)	(0.001)	(0.001)
Average Outcome of Community Birth Cohort	0.3073***	0.4257***	0.2615***	0.3646***
	(0.050)	(0.056)	(0.044)	(0.045)
Observations	8,659	7,301	8,491	7,423
R Squared	0.036	0.039	0.035	0.034

Notes : Dependent variable is qualifying for higher education (1=yes), or *zakaut* . The parents education is the sum of the mother and father's years of education. The Average Outcome of Community Birth Cohort is the average higher education qualification rate (*zakaut*) for children born in 3 year birth intervals at the same kibbutz, excluding the individual. All children born in cohorts with fewer than 10 children are excluded from this analysis. All regressions include birthyear fixed effects.

Figure 1

Proportion of Kibbutz Members Born into Children's House by Cohort

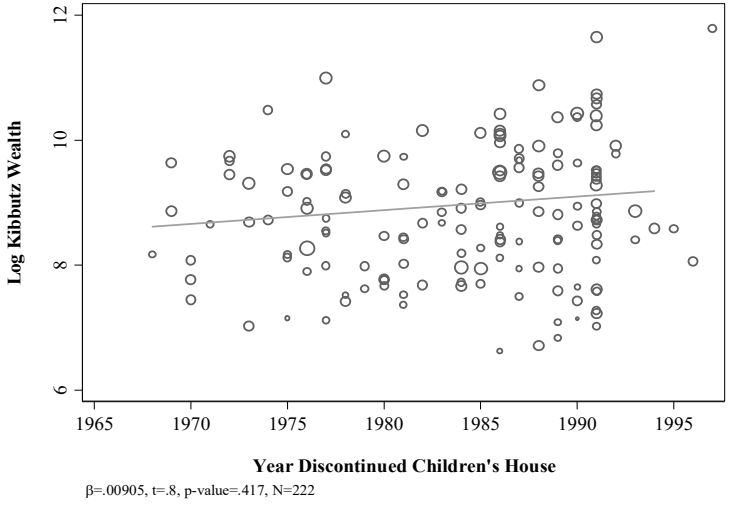


Notes : The figure displays the fraction of kibbutz children who were born into a children's house among kibbutzim that ever had a children's house. The plotted line is generated using the lowess smoothing function (bandwidth .20).

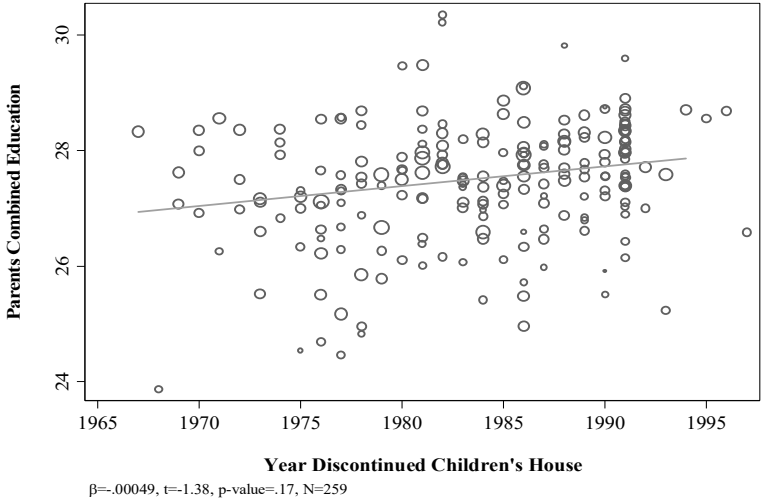
Figure 2

Relationship between Kibbutz Wealth, Parental Education and Year the Children's House was Closed

Panel A: Closure and Kibbutz Wealth



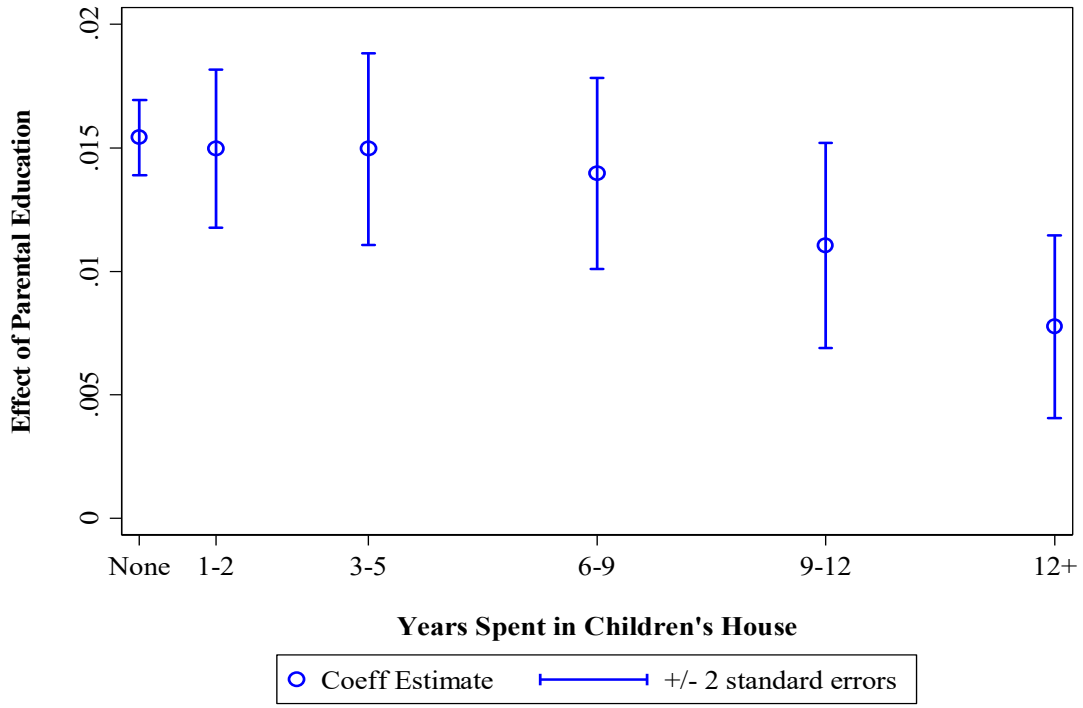
Panel B: Closure and Parental Education



Notes : The figure displays the year the relationship between kibbutz wealth, parental combined education (in years) and when the children's house was eliminated. Kibbutzim are weighted by the number of children born between 1974 and 1993. Kibbutzim where the children's house was closed before 1965 (or never existed) are excluded.

Figure 3

Effect of Parental Education on Child Outcomes by Years Spent in Children's House



Notes : The figure plots the coefficients from a regression with qualification for higher education (1=yes) as the dependent variable, and parental combined education as the regressor of interest. All regressions include community (*yishuv)* and birth year fixed effects.