



Maternal child socialization values and children's time in unstructured play and studying

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Abstract

Using time diary data from the 1997 PSID CDS-I, the present study assesses the association between mother's values concerning qualities they see as good for their children to possess for their future lives and the amount of time children spend in unstructured play and studying. The importance of everyday activity of parents in shaping these child socialization values has long been established. Previous research however has largely been unable to establish a clear association between these parental values and the structure of children's lives. This research demonstrates such a linkage, independent of measures of socioeconomic status, family and child characteristics.

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1 Introduction

How children spend their time and the activities they participate in most likely have important implications for the type of adults they become. Differences in time use across activities that represent the routinized structure of children's daily lives may constitute a structural influence on the accumulation of social, cultural, human and economic capital, enabling and constraining future behavioral choices. Since parents have the most influence on how young children spend their time, it is possible that the activities children engage in and the amount of time devoted to them is a fundamental if potentially indirect mechanism for intergenerational transmission from parents to children.

A growing body of research has detailed numerous associations between parental and family demographic characteristics and children's time use. Previous research however has largely neglected the association between ideational characteristics of parents and children's time use. This research tests for one such association: beliefs parents hold about qualities desirable for their children to have, and time their children spend studying and in unstructured play.

Such child socialization values are of particular theoretical importance because a wide and consistent body of research has previously shown that occupational conditions associated with socioeconomic status and social class— a large part of the routinized structure of adult lives — are associated with them. If an association between parental child socialization values and the structure of children's daily lives in terms of time use can be established, it may suggest at least one way in which ideational elements function in transmission of differences from one generation to the next.

2 Background

2.1 Time use and children's development

What activities children participate in, and how much time they spend in them is believed to have important implications for their social and cognitive development and at least partially through this, their lives as adults. Time spent participating in different activities can be seen as a primary domain across which learning takes place, the 'contexts of development' (Larson and Verma, 1999), or 'proximal processes' (Bronfenbrenner and Morris, 1998) in which the acquisition of skills, cognitive and social, takes place.

Though there are many potential influences shaping how children spend their time and what activities they participate in, primary among these is possibly parental direction. Parents play a key role in how children spend their free time. This may be especially true of young children. By demanding or prohibiting, encouraging, discouraging, or modeling particular activi-

ties parents can and do influence the frequency, duration, and context of activities children participate in. A clear behavioral choice is being made, (whether they are conscious of it or not) for example, when a parent tells their child to go watch television, turns it off, tells them to go outside and play, do their homework, or sets a book, puzzle or art project in front of them.

A relatively large amount of recent research has investigated the relationship between children's time use in the United States and parental characteristics such as maternal employment, family structure, ethnicity and educational attainment (Bianchi and Robinson, 1997; Yeung et al., 2001; Hofferth and Sandberg, 2001). There is also a growing literature in psychology that examines how expectancies, beliefs and specific achievement related values are associated with activity choices (Eccles and Wigfield, 2002). Despite this, and ethnographic work indicating parents explicitly choose activities to instill desired values in their children (Dunn et al., 2003), no attention has been given to the potential association between core ideational factors such as what parents feel is best for their children and how children spend their time using large scale, representative data sources.

2.2 Child socialization values

One important value system in any society relates to qualities, or traits parents see as desirable for their children to have to prepare them for their future lives. A remarkably consistent cross-disciplinary literature has identified a central dimension of parental values for children in the United States involving a contrast between obedience and autonomy (Alwin, 2001). A wide and fairly consistent empirical literature from North America has shown that these values are shaped in part by differences in the 'conditions of life' (work in particular) experienced by those in different social classes (Kohn, 1963; Kohn and Schooler, 1969). Working class parents are seen in this framework to experience work roles bounded by explicit rules set down by authority which in turn lead them to value obedience in their children more than other traits. Middle class parents in contrast experience a less rigidly hierarchical work environment that places a premium on individual achievement and initiative. Such parents on average place a greater value on autonomy, or independent thinking from their children (Pearlin and Kohn, 1966; Kohn and Schooler, 1969; Ellis et al., 1978). Though ultimately Kohn (1959) was interested in how, in turn, child socialization values influenced parenting behavior and through this children's lives, little consistent evidence has supported such a connection (Kingston, 2000). It is possible that such a mechanism has not been found because previous research has generally utilized an overly constrained conceptualization of what childrearing behaviors entail. For the most part previous research has attempted to establish associations between parental values and children's lives only through a limited number of direct interactions such as disciplinary strategies and the use of punishment (Gecas, 1979; Lareau, 2002), and not with the wider organization of how children experience their everyday lives (for a notable exception see Morgan et al., 1979).

Qualitative research has demonstrated, however, that there are behavioral differences in parenting styles between middle and working class parents influencing the structure of children's daily activities beyond such direct interactions. Children of middle class families have been seen to participate in more structured, adult supervised and achievement oriented activities, while working class children participate in fewer structured activities or achievement oriented activities that are specifically aimed at increasing their human capital (Lareau, 2002; Lareau, 2003).

The combination of these two lines of research suggests a potential mechanism linking parents' child socialization values and what kind of people their children become operating not necessarily solely through direct parenting behaviors but through the more pervasive influence parents may have in structuring the conditions of children's lives in terms of activities engaged in and time spent in them. Such a mechanism, should it exist, would lend support to a more general ecological process of development over the life course through routinized activity as posited by Bronfenbrenner (1989; Bronfenbrenner and Morris, 1998) operating both in the formation of parental values and through these values on children's development.

3 Current investigation

The present investigation focuses on identifying one necessary element of such a mechanism, an independent association between parental (in this case, maternal) child socialization values and children's time use. Two specific aspects of the structure of children's everyday lives that may have important developmental implications are considered here. These are time spent studying and in unstructured play. Time spent in achievement oriented activities such as studying may be associated with higher achievement on standardized verbal test scores (U.S. Department of Education, 1999) and better academic performance (Fulgini, 1997). Time in unstructured play may be also associated with the development of cognitive and social skills (Larson and Verma, 1999; National Research Council and Institute of Medicine, 2000).

Though identifying associations between child socialization values on children's time use in these activities is the primary focus of this research, the modeling strategy employed also allows an indirect assessment of the degree to which differences in time spent in these activities attributable to child socialization values may at least in part due to the relationship between these values and socioeconomic status. If childrearing values in part explain any of the association between measures of socioeconomic status and time use in these activities this will provide evidence consistent with a causal path from parental status to the structure of children's experience operating through values.

Using detailed time-diary data, a two stage modeling approach is taken for both activities. The first stage assesses the association between maternal child socialization values on the likelihood that a child participates in each activity. The second assesses the association between

child socialization values and children's time use in each activity for those children who participated in it.

Child socialization values are measured here through a well-known survey question concerning the character traits parents value as most important for their children's future lives. These include the ability to think for oneself, obedience, hard work, and helping others when they need help. Since no theoretical or empirical work to date has focused on how these central child socialization values might be associated with children's time use, we do not have a strong conceptual base from which to make predictions about their relationships. We can speculate, however, in a general sense, as to what these relationships might be.

Before proceeding to specific hypotheses concerning child socialization values and time in these activities, it is important to note that qualities parents see as desirable for their children have been seen to vary with children's age (Alwin, 2001), and that parents believing it best for their children to have a certain quality may encourage participation in different activities at different ages. At the same time, patterns of children's time use vary dramatically with age (Timmer et. al., 1985; Bianchi and Robinson, 1997; Hofferth and Sandberg, 2001). Because of these relationships, it is necessary and desirable to account for the possibility that the relationship between maternal values and children's time use varies in interaction with the child's age.

Following Lareau's (2002) work suggesting children of working class parents spend more time participating in unstructured activities than children of middle class parents, if valuing obedience is also associated with parental class as in Kohn's work one implication is that a parental value for obedience will be associated with time children spend in unstructured play. This is the first hypothesis to be tested here.

H1: Children whose parents value obedience over other traits will spend more time in unstructured play.

In part, this may be because parental participation and guidance are less necessary. Children of parents valuing the ability to think for oneself above other traits on the other hand may potentially also spend more time in unstructured play, especially at younger ages. This is because play in a general sense is popularly thought to be important for developing a curiosity about the surrounding world. If this was the case the level of play may be relatively stable across ages for children of parents emphasizing obedience because unlike parents valuing the ability to think for oneself, they may not have a developmental motivation that would change with age. We may frame two ancillary hypotheses directly from these observations.

H1a: Children of parents prioritizing the ability to think for oneself will spend more time in unstructured play at younger ages, but less at older ages.

H1b: The amount of time spent in unstructured play will not differ by age as much for children of parents valuing obedience as for children of parents valuing the ability to think for oneself.

Though no theoretical background linking a parental value for hard work and time spent in unstructured play exists, it is expected that children of parents placing primary importance on this trait would be the least likely to play relative to others at any given age. They also may be likely to spend less time playing because play is not often seen as hard work (or work at all), and these parents may encourage their children into more structured activities. This leads to the next hypothesis concerning childrearing values and time in unstructured play.

H2: Children whose parents prioritize hard work will spend less time than others in unstructured play.

The linkage between studying and parental values though less theoretically obvious from Kohn's and Lareau's work can also be viewed through this perspective. Studying, in contrast to the types of play we're concerned with here is a relatively highly structured activity often implying parental or other adult supervision. It is additionally both an intellectual activity and to a certain extent work for children of school age. Following Lareau's and Kohn's observations concerning differences between middle and working class parents we arrive at the third hypothesis to be tested here.

H3: Children of parents placing emphasis on the abilities of children to think for themselves and to work hard will spend more time studying than children of those emphasizing other qualities.

Additionally, though both the likelihood of studying and time spent studying are probably greater for older than younger children, an ancillary hypothesis here is that differences by age will be most pronounced for children whose parents place primary importance on these two traits.

H3a: Differences in time spent studying between children of parents emphasizing the ability to think for oneself and hard work and children of parents valuing other traits will be more pronounced at later ages.

In the case of values for obedience, the ability to think for oneself, and hard work, the derivation of the hypotheses concerning time spent studying and in unstructured play is relatively straightforward. It is unclear, however, how a parental value for helping others may be associated with time spent in these activities. This is in part because there is no obvious relationship between this trait and either achievement orientations or developmental concerns as there are with the others. There is also no theoretical or empirical work detailing structural reasons parents might choose this trait over others as there is with obedience and the ability to think for oneself. Because it is an offered response in the question used here, however, children of mothers choosing helping others as their most valued trait for their children's future need to be included in the analysis. No explicit hypotheses are forwarded concerning how these children differ from others in terms of time spent studying or in unstructured play and therefore results concerning this trait should be treated descriptively though inferential results will be presented to aid interpretation.

Finally, it should be noted that if the indirect causal mechanism linking social class and children's activities through parental values implied by the combination of Kohn's and Lareau's work is valid, we would expect to see a mediation effect in nested models whereby specifications including indicators for maternal values should decrease (or completely eliminate) any direct effect of measures of socioeconomic status identified in specifications in which they are not included. To formalize this in hypothesis 4;

H4: Child socialization values will mediate the association between indicators of socioeconomic status in children's unstructured play and studying.

In contrast, it is possible that the indirect causal linkage between socioeconomic status and children's time use through child-rearing values does not exist and in fact both are explained by socioeconomic status. If this were the case we would expect to see a reduction in estimated associations between child-rearing values and children's time use when socioeconomic status is controlled relative to zero-order associations between them when it is not.

In all of the multivariate analyses presented here differences in effects associated with controls for maternal education and total family income (roughly operationalizing socioeconomic status) across models are assessed with the inclusion of measures for maternal socialization values. This will suggest the degree to which values mediate the relationship between socioeconomic status and time children spend studying and in unstructured play. Zero order bivariate models of both the likelihood of participating in each activity and the time spent in them by those who did and childrearing values provide a point of reference with which to evaluate the possibility that time use and values can be simultaneously explained by socioeconomic status.

4 Data and methodology

Data for the analyses here come from wave I of the Child Development Supplement to the Panel Study of Income Dynamics (PSID CDS-I) and the PSID family file. Interviews were conducted for the CDS-I in 1997 in 2,380 households with children under the age of twelve, and up to two children age 12 and under in the household were sampled. The Panel Study of Income Dynamics is a longitudinal survey of a representative sample of U.S. men, women, children and the families in which they reside. Child development supplement panels were collected in 1997 (CDS-I), 2002 (CDS-II) and 2007(CDS-III). The decision to use only the CDS-I in this investigation was motivated by two primary concerns. First, while the multiple panels in the CDS lend themselves to models of change over time, it is not clear theoretically how or if change in time use would be effected by childrearing values controlling for child age and other developmental change. Second, it is likely that estimates of change in time-use across panels would be strongly influenced by initial values and exhibit regression to the mean. For example, following the hypotheses detailed above, parents emphasizing the ability to think for oneself in the first panel may influence children to spend more time studying. For

this reason, however, the potential increment in change in time studying between panels (controlling for age) associated with this child-rearing value may be small, while time studying for children of parents holding other values placing less emphasis on it in the first panel might increase relatively more as their children age because it started from a low initial value. This is less of a problem in cross-sectional analyses such as the one here simply because any such differences are absorbed to some degree by absolute time use in activities, which incorporate both initial values and change over time. This is not to suggest that models of parental values and change in time use are not viable or potentially important for future investigation, but simply that the cleanest starting point is the cross-sectional model presented here.

Children's time use data come from 24 hour time-diaries. Data concerning maternal child socialization values come from the primary caregiver household instrument. The response rate for the time diaries was 82% and that for the primary caregiver household instrument was 63%. All analyses presented here are based on techniques appropriate for the complex survey design, with the primary sampling unit specified as the household and weighted for non-response in the primary caregiver household instrument. Statistical significance as discussed in the text is set at the .05 alpha level for two-tailed tests unless otherwise specified regardless of whether predictions concerning the direction of a particular relationship were made.

The analytic sample is restricted to children between the ages of 3 and 12 years old for whom both weekday and weekend day time diaries were available. The age constraint was employed because the time use patterns of very young children outside of major activities such as eating, sleeping and playing are expected to largely mirror the time use patterns of their caregivers. The sample was further restricted to children who were the biological or adoptive child of the household head and whose primary caregivers were their biological or adoptive mothers. Both of these restrictions were employed to avoid the potential for unobserved heterogeneity due to differences in respondents' relationships to children in the primary caregiver instrument from which the question concerning child socialization values was taken. The total analytic sample size after imposing these restrictions is 1170 children from 852 families. Since the number of children actually participating in a given activity varies, the sample sizes for the regressions of time spent in each do as well. For the analysis of studying, the sample size is 544 and for play it is 1049. In all analyses presented, standard errors are corrected for primary sampling at the household level.

4.1 Dependent variables – Children's time use

Children's time use data was collected from time-diaries for one randomly selected weekday and one randomly selected weekend day which asked about the child's flow of activities over a 24 hour period beginning at midnight. Respondents were asked to give detailed information concerning each activity engaged in, when it began and ended, with whom the child did it, and what activity came next. Activities coded as studying include homework and non-homework related research, as well as miscellaneous other educational activities. The category for play is composed of a number of activities including unstructured indoor and outdoor

activities, playing with toys, pretend, and board games (a complete list of activities aggregated into each of these categories is presented in Appendix A).

The aggregate times in each activity were recoded into two variables. The first of these is a binary indicator for whether or not a child participated in the particular activity on either the weekend day or weekday sampled. The second is a continuous variable measuring weekly time in each activity which is imputed by multiplying the weekday aggregate time by 5 and the weekend day aggregate time by 2 and summing these products.

4.2 Independent variable – Maternal child socialization values

Children's primary caregivers in each household were shown a list of traits, or qualities children might exhibit which included "to obey", "to be well liked or popular", "to think for himself or herself", "to work hard", and "to help others when they need help". They were then asked the following question:

"If you had to choose, which thing on this list would you pick as the most important for a child to learn, to prepare him or her for life?"

In an unfolding series of questions respondents were asked to rank each value in this way, from most important to least, at each step choosing from those remaining after the previous question. Though conventionally responses to these questions have been integrated into a summative index of the average ranking of each trait, this is not unproblematic. The remaining choices at each iteration of the question are restricted by choices made in earlier ones while an index measure assumes that ranked choices are of equivalent weight between respondents and that response categories are equidistant. To avoid these problems, the independent variable used in the following analyses is a simple categorical indicator of the trait deemed by mothers to be the most important for their children's future lives, excluding the category for 'to be well liked and popular' which was chosen to be the most important trait by less than 1% of mothers.

In evaluating the possible association between maternal values and children's time use, it is important to consider the possible directions of causality implied. In order for the theoretical linkage between values and time use outlined above to be supported, the causal effect must clearly be from values to children's behavior. However, it is also possible that an opposite causal effect occurs; that children's behavior influences parental values. One might hypothesize, for example, that parents of a child who studies more than average would be more likely to choose 'to think for oneself' or 'to work hard' as their most important child socialization value for this reason. Such child effects are in general plausible and there is no way to test for their potential influence here. It is important to note however that the question concerning these values is phrased in general terms, not referring to a specific (sample) child. Further, this data was gathered at the household level, with households in the analytic sample having on an average of 2.4 resident children under the age of 18, and less than 15% of households had only 1 child. For these reasons the child socialization values which are measured here are

likely not specific to the sample children and as such the possibility of child effects influencing them is reduced.

4.3 Control variables

Controls in the analyses to follow include maternal education, maternal work status, family income, whether or not children resided with a single parent, the child's age, sex and race as well as the number of children in the family under 18 years of age and the age of the youngest child in the family.

Maternal education and family income are included as indicators of socioeconomic status. For this reason, it is especially important to consider their role in the association between child socialization values and the structure of children's daily activities. Maternal education has been seen in at least one study to have the strongest influence on child socialization values (even stronger than occupational category), with more educated mothers expressing on average a greater preference for autonomy than mothers with less education, who are more likely to prefer obedience in children (Wright and Wright, 1976). At the same time, maternal education levels are associated with differences in children's time use (Bianchi and Robinson, 1997; Timmer et al., 1984). For the purposes of this study maternal education is measured as a binary indicator dichotomizing years of education completed and is intended to proxy whether or not the mother had a college degree. Previous research has suggested this contrast is important in terms of maternal education's association with children's time use (Bianchi and Robinson, 1997; Sandberg and Hofferth, 2001). This measure is coded as 1 where mothers had 16 years or more of education and 0 otherwise. In the pairwise comparisons of maternal education measured in this way and childrearing values the full analytic sample, in concordance with results cited above a significantly higher percentage of mothers who value the ability to think for oneself (30%) have higher education compared to those valuing obedience in their children (17%, $p=.027$) and additionally also relative to those who value helping others (16%, $p=.039$). Mothers valuing hard work had an intermediate percentage relative to these (23%) with higher education.

Family income is also a critical indicator of socioeconomic status and thus may be associated with child socialization values. Income has also been associated with differential children's time use in a number of activities (Bianchi and Robinson, 1997; Hofferth and Sandberg, 2001). Family income is operationalized as the natural log of total taxable and transfer income of all family members in the household. Education and income are obviously associated ($r=.39$), though not perfectly in the analytic sample and hence concerns of potential multicollinearity are minor.

Having a mother who works outside of the home may also be important in shaping their value orientations concerning children and potentially children's time use as well. In the data used for the present analysis, mothers who did not work at the time of the study preferred obedience about twice as often as mothers who worked, while mothers who were working preferred the ability to think for oneself more than those who were not. Whether a mother works may

also influence children's time use. Again in the data used for the present study, children of working mothers spent significantly less time in unstructured play. Maternal work is operationalized as a binary indicator coded as 1 if the mother worked at all at the time of the survey, and 0 otherwise.

Whether or not the mother of the child used as the unit of analysis is living with the child's father or another partner may also influence the structure of her values for desirable traits in children. Children of single parents may need to take more responsibility for household tasks, their own care or care for other children in the household. This may cause these mothers to place higher value on independence, or autonomy in children. Not having a secondary source of discipline in the house however may cause single parents to value obedience most. Single parent status is also coded with a binary indicator, taking a value of 1 if children's mothers are not married or in long-term cohabiting relationships, and, 0 if they are. In all analyses, a simple multiplicative interaction term between maternal work and single parent status is also included to control for potential variation in the association between child socialization values and children's time use across different family/work types.

There may also be significant differences in cultural value systems regarding childrearing that will be reflected by race or ethnicity. Such differences in parenting values have been found in previous research, both within the U.S. (Jambunathan, Burts, and Pierce, 2000) and in international comparison (Xiao, 1999). At the same time, race and ethnicity have been found to be associated with differential patterns of children's time use (Bianchi and Robinson, 1997; Hofferth and Sandberg, 2001). Race and ethnicity are operationalized here as a set of binary indicators, one for Hispanic origin, one for non-Hispanic Black, and one for other races/ethnicities. The comparison group is non-Hispanic Whites.

Though there is no a priori reason for assuming that a child's gender, the number of children in the family, and the age of the youngest child are associated with maternal values, they have all previously hypothesized or shown to impact children's time use and as such are included as controls here. Gender is coded as 1 if a child was female and 0 if male. The number of children less than 18 years of age and age of the youngest child in the family are both measured continuously.

5 Results

The majority of children in the analytic sample (64%) had mothers who chose as their most important child socialization value 'To think for himself or herself'; 14% had mothers who chose 'to obey', 12% 'to work hard' and 10% 'to help others when they need help'. Overall 44% of children spent at least some time studying and these children spent on average 4.6 hours during the week doing so. Almost all the children in the sample (92%) participated in some form of unstructured play, with an average of about 13.5 hours weekly.

5.1 Bivariate comparisons

We begin the analysis with simple regressions of the likelihood of participating and time spent in each activity on the indicators for child-rearing values. As expected, children whose mothers chose obedience and the ability to think for oneself were estimated to be the most likely to spend time in unstructured play during the week (94% and 93%, respectively) though the differences with the other two groups were minimal and not statistically significant. Children of mothers who chose the ability to think for oneself and helping others as their most valued trait spent the most time playing (14 and 14.6 hours respectively) during the week, compared to children whose mothers valued obedience (12.7 hours) and hard work most (11.2 hours). As hypothesized, this latter group clearly spent the least amount of time playing; significantly less than children of mothers valuing the ability to think for oneself and helping others.

Children of mothers who prioritized helping others and hard work were estimated to be most likely to spend at least some time studying during the week (54% and 51%, respectively). Children in the former group were significantly more likely to study than children whose mothers chose obedience (38%) and the ability to think for oneself (42%). Children of mothers who chose the ability to think for themselves as their most valued trait and who spent any time studying however, were estimated to have spent the most time doing so, 4.8 hours per week. Children of mothers valuing hard work and helping others, however, spent only slightly less time studying during the week, about 4.5 hours each. As expected, children of mothers who chose obedience were estimated to spend the least amount of time studying, 3.7 hours, significantly less ($p=.010$) than children of mothers who chose 'think for self'. Though not significant by conventional standards, the difference between children whose mothers valued hard work and those whose mothers chose obedience would be using the .1 alpha level under a one tailed test.

5.2 Multivariate analysis

The multivariate analysis separately addresses the likelihood of participating in each activity and time spent in them among those who do, employing a nested modeling strategy. The first model in each set includes only the control variables. The second adds to this specification the categorical variable for mother's most important child trait. The third and final model in each set refines the second with the inclusion of a multiplicative interaction between maternal child socialization values and child age. In addition to identifying any effects of maternal values on time spent studying and playing independent of the control variables, any changes in the estimates of maternal education and family income in Models 2 and 3 relative to Model 1 may be interpreted as due to the relationship of social class and values.

Table 1 presents the means and standard errors adjusted for the complex sampling scheme for all independent and control variables used in the logistic and OLS regressions.

Table 1
Means, proportions and standard errors for variables used in analyses

	Logistic regression n=1170		Weekly hours studying n=544		Weekly hours playing n=1049	
	Mean	Std.error	Mean	Std.error	Mean	Std.error
Time spent in activity			4.59	0.203	13.54	0.364
Child age	7.49	0.105	8.69	0.130	7.32	0.106
Child sex (0=male)	0.48	0.019	0.46	0.030	0.47	0.020
Mother has college degree (0=No)	0.26	0.021	0.30	0.031	0.26	0.021
White	0.76	0.021	0.75	0.031	0.78	0.020
Black	0.17	0.018	0.22	0.030	0.15	0.016
Hispanic	0.02	0.006	0.02	0.007	0.01	0.005
Other ethnicity	0.05	0.011	0.02	0.008	0.05	0.011
Proportion single parent	0.25	0.021	0.26	0.032	0.24	0.021
Proportion mother working	0.75	0.021	0.76	0.030	0.75	0.022
Total family income (ln)	10.59	0.048	10.66	0.067	10.60	0.049
Number of children under 18 in the family	2.41	0.051	2.45	0.082	2.37	0.047
Age of youngest child in the family	5.79	0.138	6.74	0.214	5.60	0.140
Proportion mothers choosing 'to think for self'	0.64	0.023	0.61	0.034	0.64	0.024
Proportion mothers choosing 'to obey'	0.14	0.016	0.12	0.020	0.14	0.017
Proportion mothers choosing 'to work hard'	0.12	0.017	0.14	0.027	0.12	0.015
Proportion mothers choosing 'to help others'	0.10	0.015	0.13	0.024	0.10	0.015

Note: Standard errors adjusted for multiple children in household.

Source: Panel Study of Income Dynamics Child Development Supplement, CDS I, own calculations.

5.2.1 Unstructured play

The first panel in Table 2 presents the regressions for the likelihood of participating in unstructured play. Model 1 is the baseline model for this analysis including only the control variables. Among these, race/ethnicity, the number of children in the family and the age of the youngest child have significant effects. Measures of socioeconomic status were not significantly associated with the likelihood of participating in unstructured play in any of these models.

Model 2 adds to this specification the maternal value indicators. In support of the first hypothesis above, children of mothers valuing obedience were significantly more likely to engage in unstructured play during the week than children of mothers valuing the ability to think for oneself and helping others. It is important to realize however, that all of these differences are substantively small. All four groups of children are likely to play at some point in the week, with all predicted probabilities being above .95.

Table 2
Regressions of the likelihood of engaging in and weekly
hours in unstructured play by most important maternal child trait and control variables
– Children age 3-12

	Logistic regression of			OLS regression of weekly		
	participating in activity (n=1170)			hours spent in activity (n=1049)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Child age	-0.136	-0.149	-0.285	-1.231 **	-1.236 **	-1.261 **
Child sex (0=male)	-0.137	-0.149	-0.199	-1.194	-1.102	-1.100
Mother has college degree (0=No)	-0.078	-0.062	-0.166	-0.375	-0.411	-0.388
Black (non-Hispanic White=0)	-1.184 **	-1.367 **	-1.377 **	-1.338	-1.023	-1.070
Hispanic	-2.685 **	-3.034 **	-3.128 **	-4.780	-4.623	-4.538
Other ethnicity	-1.378 **	-1.380 **	-1.352 **	-2.431	-2.496	-2.509
Single parent (0=No)	-0.148	-0.081	-0.153	-6.253 **	-6.120 **	-6.003 **
Mother working (0=No)	-0.126	-0.105	-0.093	-2.388 **	-2.328 **	-2.280 **
Maternal work status*single parent	-0.497	-0.520	-0.463	5.698 **	5.58 **	5.442 **
Total family income (ln)	-0.095	-0.082	-0.036	-0.792 *	-0.772 *	-0.775 *
Number under 18 in the family	-0.609 **	-0.605 **	-0.520 **	0.862 *	0.954 *	0.952 *
Age of youngest child in the family	-0.245 **	-0.238 **	-0.222 **	0.033	0.047	0.052
Obeys (think for self omitted)		0.748 *	0.533		-0.737	-1.700
Work hard		0.163	-3.857 **		-2.444 **	-3.647
Help others		0.216	-2.740		0.566	2.520
Obeys*age			0.031			0.134
Work hard*age			0.464 **			0.158
Help others*age			0.266			-0.244
Constant	8.773 *	8.613 *	9.129 *	31.966 **	31.69 **	31.834 **
F	5.25	5.03	4.19	15.49	12.96	11.11
Prob.	.0000	.0000	.0000	.0000	.0000	.0000
Prob, Joint F		.155	.018		.042	.823
R ²				.187	.195	.196
ΔR ²					.008	.001

Notes: Asterisks for significance with regard to child socialization values refer to the contrast to the omitted category, 'think for self'. Other contrasts are discussed in the text. *p<.05, **<.01

Source: Panel Study of Income Dynamics Child Development Supplement, CDS I, own calculations.

The results from Model 3 indicate that some of this homogeneity is masking important differences in the likelihood of unstructured play by age. Including the interactions between maternal values and age significantly increases model fit over the main effects specification. In this model the predicted probability of playing is significantly less as age increases for children of mothers valuing both the ability to think for oneself (in support of ancillary hypothesis H1a) and obedience. This effect is more pronounced for the former group than the latter. This was

expected to be the case if the mechanism linking the likelihood of play and an emphasis on obedience was one that was potentially less closely related to developmental concerns than that linking a high value for independent thinking to play, as formalized in ancillary hypothesis H1b. While the predicted probability of play among children of mothers who choose either trait is .99 at age 3, by age 12, the predicted probability of engaging in unstructured play is significantly higher ($\hat{\pi}=.95$) for children of mothers choosing obedience compared to children of mothers prioritizing the ability to think for oneself ($\hat{\pi}=.89$). The predicted probability of engaging in unstructured play remains relatively low, and constant (about $\hat{\pi}=.93$) across the ages here for children of mothers choosing helping others as their most valued trait, and from a similar level increases, though insignificantly, among children of mothers valuing hard work.

For children who spent any time playing during the week, among the controls in Model 1 of the second panel of Table 3, we see that unlike the models for the likelihood of playing, race/ethnicity and the age of the youngest child in the family have no significant association with time spent playing. Single parent status, maternal work status and their interaction as well as family income also all have significant effects, where they did not concerning the likelihood of playing.

The inclusion of the values measures in Model 2 results in a slight but significant improvement in model fit over the baseline model. This is clearly driven by the relatively lower estimated amount of time spent playing by children of mothers valuing hard work as their most important child socialization trait (11.44 hours) as suggested in hypothesis 2. This is significantly less time than children of mothers valuing the ability to think for oneself (13.9 hours) and helping others (14.45 hours).

Children of mothers valuing obedience, in contrast to the prediction of hypothesis 1 were estimated to spend the second lowest amount of time playing (13.1 hours). Where these children are more likely to engage in unstructured play than children of mothers prioritizing thinking for oneself and helping others, they spent less time, though not significantly less, doing so.

Model 3, which includes the interactions between age and maternal values does not increase model fit relative to the main effects model. This suggests that the relationship between time spent playing and maternal child socialization values does not vary with age as was the case concerning the likelihood of participating in unstructured play.

It is worth noting that the neither specification of Model 2 or Model 3 substantively changed the coefficients for maternal education or family income. This suggests hypothesis 4 is not supported here. Though maternal child socialization values have a clear association with the likelihood of studying, they may not mediate any association with socioeconomic status.

In addition, since the estimates of the direct association between child-rearing values and unstructured play seen in the bivariate results remain relatively unchanged in the multivariate models presented here, we may conclude that our measures of socioeconomic status do not explain any of the association between values and time spent in unstructured play.

Table 3
Regressions of the likelihood of studying and weekly
hours studying by most important maternal child trait and control variables –
Children age 3-12 years old

	Logistic regression of			OLS regression of weekly		
	participating in activity (n=1170)			hours spent in activity (n=544)		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Child age	0.289**	0.294**	0.281**	0.420**	0.439**	0.598**
Child sex (0=male)	-0.137	-0.114	-0.114	-0.210	-0.195	-0.137
Mother has college degree (0=No)	0.402	0.436	0.433	0.974*	0.904	0.900
Black (non-Hispanic White=0)	0.637*	0.752*	0.759**	0.082	0.363	0.231
Hispanic	0.109	0.321	0.307	0.130	0.404	0.936
Other ethnicity	-1.305*	-1.299*	-1.296*	1.199	1.040	1.045
Single parent (0=No)	0.490	0.554	0.563	-0.814	-0.828	-0.881
Mother working (0=No)	-0.085	-0.041	-0.039	-0.349	-0.393	-0.559
Maternal work status*single parent	-0.277	-0.373	-0.375	0.805	0.849	0.886
Total family income (ln)	0.172	0.165	0.169	-0.157	-0.183	-0.199
Number under 18 in the family	-0.022	-0.064	-0.053	0.210	0.214	0.096
Age of youngest child in the family	0.012	0.005	0.006	0.149*	0.146*	0.125
Obey (think for self omitted)		-0.375	-0.115		-1.114	3.182*
Work hard		0.227	-0.663		-0.760	4.780*
Help others		0.498	0.153		-0.269	-2.222
Obey*age			-0.032			-0.494**
Work hard*age			0.116			-0.612**
Help others*age			0.044			0.210
Constant	-4.379**	-4.301**	-4.286**	1.185	1.551	0.904
F	10.26	8.27	8.27	4.90	4.30	4.54
Prob.	.000	.000	.000	.000	.000	.000
Prob, Joint F		.163	.552		.077	.001
R ²				.134	.144	.170
ΔR ²					.010	.026

Notes: Asterisks for significance with regard to child socialization values refer to the contrast to the omitted category, 'think for self'. Other contrasts are discussed in the text. *p<.05, **<.01

Source: Panel Study of Income Dynamics Child Development Supplement, CDS I, own calculations.

5.2.2 Studying

The first panel in Table 3 presents the logistic regression of the binary variable for whether or not a child studied on either a weekend day or weekday. Among the controls estimated in Model 1, children's age and race are significantly associated with the likelihood of studying. Notably, neither maternal education nor total family income coefficients are statistically significant. This suggests that perhaps socioeconomic status to the degree it is captured by these indicators net of other variables in the model does not play a critical role in shaping whether children study at least for some time during the week.

Model 2 again introduces the binary indicators for most important maternal trait. Overall, the addition of maternal child socialization values does not increase model fit significantly. As estimated the associations between values and the likelihood of studying are nearly identical to those seen in the bivariate analysis. Children whose mothers chose 'work hard' or 'think for self' were slightly more likely to study (with predicted probabilities of $\hat{\pi} = .58$ and $\hat{\pi} = .53$ respectively) than children whose mothers' placed the highest value on obedience ($\hat{\pi} = .44$). Though these differences from the latter group are in the expected direction of hypothesis 3, they are small and not statistically significant. As in the bivariate results, children of mothers valuing helping others are the most likely to study ($\hat{\pi} = .65$), significantly more likely than children whose mothers valued obedience.

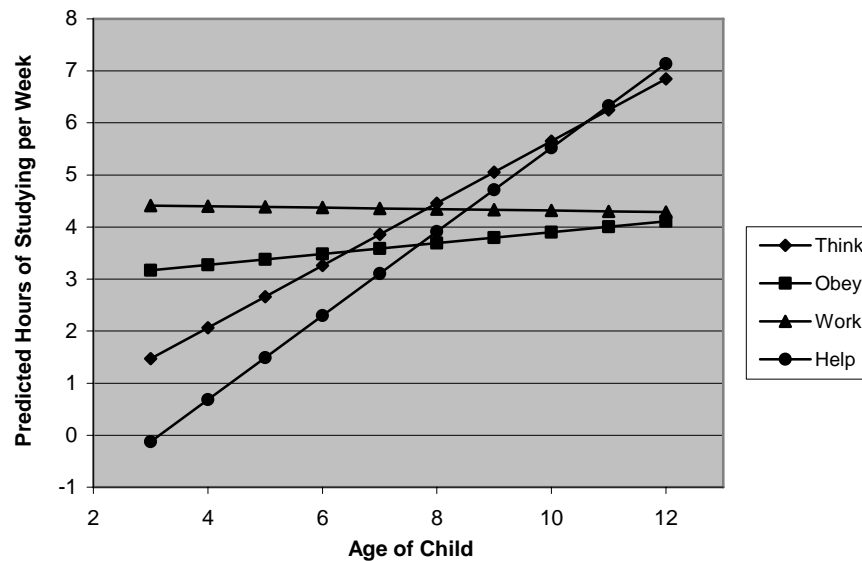
In model 3, where maternal values interact with child age, the probability of spending at least some time studying is greater for older children regardless of maternal values as expected. In partial support of hypothesis 3a, this difference is largest among children of mothers valuing hard work in their children. While at age 6, though most children are equally likely to spend at least some time studying, the predicted probability studying is highest at age 12 ($\hat{\pi} = .84$) among those whose mothers valued hard work most, significantly higher than that for children of mothers valuing obedience ($\hat{\pi} = .61$). Contrary to expectations, children of mothers valuing the ability to think for oneself were not significantly more likely to study at this age ($\hat{\pi} = .72$) than either children of mothers valuing obedience or helping others. The latter group had the second highest predicted probability of studying in this model ($\hat{\pi} = .83$).

The second panel in Table 2 presents analogous models for weekly hours studying by those who spend at least some time doing so. Among the controls in model one, the age of the child, the age of the youngest child in the family, and maternal education are all significantly associated with time spent studying. As estimated, children of mothers with 16 years or more education who spend at least some time during the week studying are predicted to spend approximately one hour more per week doing so than children of mothers with less education. In Model 2, the inclusion of maternal socialization values only slightly increases overall model fit. As hypothesized, in this model children of mothers valuing the ability to think for oneself spent significantly more time during the week (4.9 hours) studying than children of mothers choosing obedience as their most valued trait (3.7 hours, $p = .011$). Contrary to expectations however, children of mothers choosing hard work as their most valued trait were not esti-

mated to spend significantly any more or less time studying (4.1 hours) than children of mothers valuing other traits.

Model 3, which includes interactions between age and maternal child socialization values results in a large, significant increase in model fit. This model reveals two distinct groups, as can be seen in the predicted weekly hours studying as presented in Figure 1.

Figure 1
Predicted hours per week studying by child age and mothers' choice of most important child trait



Source: Panel Study of Income Dynamics Child Development Supplement, CDS I, own illustration.

The first group comprises children of mothers valuing the ability to think for oneself and helping others, who spend relatively few hours studying at earlier ages, but dramatically and significantly more at age 12. This result lends partial support to hypothesis 3a. The other group, with children of mothers valuing obedience and hard work, report spending relatively larger amounts of time studying at early ages (around 4 hours a week) but not more in later age groups. Three year old children in the first group were estimated to spent significantly less time studying than children in the second group, and 12 year olds significantly more time studying. One should likely not make too much of the result at age 3 however. By age six, when studying more likely becomes related to school work, there were no significant differences between children whose mothers valued different traits in their children. The most important result is that the children of mothers who value the ability to think for oneself and helping others were estimated to spend about 3 hours more per week studying than those whose mothers valued the other traits by age 12 than at age 6 controlling for other covariates in the model including maternal education and family income. This suggests that net of maternal education, family income, race, family composition and maternal work status and other family and child characteristics in the model maternal child socialization values had a major

and independent association with this potentially critical component of human capital development.

Finally, it will be noted that as was the case with unstructured play, there seems to be no evidence that time studying is linked to socioeconomic status through childrearing values, nor that socioeconomic status explains away the size of the values coefficients. Change in the estimated coefficients related to both maternal education (falling just above the .05 alpha level here) and family income was marginal. The size of the coefficients associated with childrearing values stayed, as in the analysis of play, relatively unchanged relative to the zero order results in the bivariate analysis.

6 Discussion and conclusion

The analysis presented here documents a number of associations between maternal child socialization values and children's time spent studying and in unstructured play in the United States independent of the controls in the analysis including the measures of socioeconomic status. Children of mothers valuing obedience most were significantly more likely to engage in unstructured play compared to children of mothers valuing the ability to think for oneself and helping others. Though the differences in the probability of engaging in unstructured play is greater across age for these two groups, children of mothers valuing obedience were significantly more likely to play at 12 years of age. This finding is concordant with the hypothesis that these differences may be motivated by differing attention to developmental concerns between the two groups of parents. Finally, as was expected, children of mothers valuing hard work were seen to spend significantly less time in unstructured play during the week than other children.

At the same time, children of mothers prioritizing obedience were estimated to be less likely to study relative to children of mothers valuing the abilities to think for oneself, hard work, and helping others. At age 12, the latter two differences are statistically significant. They also spent significantly less time studying than children of mothers choosing the ability to think for oneself as their most important trait. The values-age interaction model revealed that while children of mothers valuing the ability to think for oneself and helping others spent more time studying at older ages relative to younger children, those whose mothers valued obedience or hard work did not. Combined, this produced a large and significant difference in predicted time spent studying (3 hours) between children of mothers valuing the ability to think for oneself and obedience at age 12.

These findings are important in the first instance because how time use is structured in children's lives has been seen to have important relationships to the basic development of social and academic skills. On a broader level however, they provide empirical evidence of how values might more generally be associated with differential developmental contexts in the experience, or to use Kohn's term, conditions of children's everyday lives. The existence of

such a mechanism would suggest that both processes shaping these values in parents and their influence on children's lives may be special cases of a broader ecological form of socialization taking place through routinization and time use (Bronfenbrenner and Morris, 1998).

Perhaps one of the most interesting ancillary findings here is that inclusion of maternal child socialization values in the models presented did not in any case substantively change the (often minimal) effects on time spent studying and in unstructured play associated with maternal education or family income. This means that at least in this analysis child socialization values can be seen as neither an intermediary mechanism between status and children's lives nor as spuriously associated with time use due to their association with the status measures. This of course is subject to the dual qualifications that the controls for socioeconomic status used were rudimentary at best and that only two limited types of activities were investigated. Kohn's work specifically posited that occupation – not education or income – was a locus of development of child socialization values. It is possible that more refined measures of socioeconomic status and of occupational conditions would reveal a relationship between them and children's time use in these and other activities potentially working through parental values.

There are several other limitations of the present study that need to be kept in mind when evaluating the more direct results presented here concerning the association between child-rearing values and time use in these activities. First, there is no direct connection made here between time spent studying or in unstructured play and outcomes for children. Though previous literature suggests such connections exist, there is no way to gauge how the magnitude of differences in time use documented here will make substantive differences in children's lives. Second, some have argued values such as those described here may not have a causal relation to behavior, but rather simply be a reflection, or rationalization of routinized behavior (Homans, 1974, cited in Alwin, 2001). We cannot empirically rule out the possibility that the association between maternal values and children's time use identified in these activities may be at least in part due to the effects of children's behavior on their parent's values. Such hypothetical child effects could produce the same results seen here, but completely negate any potential causal influence of parents on children's time use through their values. There are several reasons however, to think such effects are less likely here than they otherwise would be. As described previously, the particular question employed does not refer to a specific child in the family, and is taken from a household level instrument. Both of these factors mitigate the likelihood that mothers' responses are specific to a particular sample child. Further, the strong and consistently demonstrated structural influence of parental experiences on these values also reduces the likelihood that they can be simply explained as rationalizations of children's behavior.

Despite these limitations, this research for the first time demonstrates an important potential mechanism by which values parents hold for the kind of people their children will become may influence the patterning of children's everyday activity. Future research aimed at elucidating the effect of such a mechanism should address how child socialization values are associated with these and other types of activities while attempting to rule out potential child ef-

fects definitively. One promising avenue for such work will be models of change in both children's time use and parental values over time. As noted above, this type of model is possible using data from the PSID-CDS. Once the scope of any such effects are identified, it may be possible to step back further to Kohn's original objective and identify an empirical linkage between parental social class and the context of child development (and potentially child outcomes) that occurs, at least partially through ideational structures - particularly child socialization values.

Appendix

Table A1
Coding for playing and studying from CDS

Category	Description of activity
Playing	Walking for pleasure, crawling (for babies). Playing card games (bridge, poker) Playing board games (Monopoly, Yahtzee, etc.) , Bingo, Playing social games (scavenger hunts); jump rope, handclap games Puzzles/word or educational games Indoor playing other indoor activities with children including games, "playing" unless obviously outdoor games. Outdoor playing; outdoor activities with children Playing computer games Other recreational computer activities, "surfing the net" -non-games. Pretend, dressup, played house, played fireman. Played with toys Unspecified play outdoors Unspecified playing indoors; getting into stuff, making a mess. Unspecified playing games, "played a game." Electronic video games (Nintendo, Sony, Game Boy, Sega.) Other active leisure
Studying	Using the computer for homework, studying, research, reading related to classes or profession, except for current job Library functions (using computer/internet to acquire specialized information) Homework (non-computer related), studying, research, reading, related to classes or profession, except for current job; "went to the library", homework non- computer Other education; "watched a slide program"

Source: Panel Study of Income Dynamics Child Development Supplement, CDS I.

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