Independence Giving or Autonomy Taking? Childhood Predictors of Decision-Sharing Patterns Between Young Adolescents and Parents

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Abstract

This article reports on a study of whether young adolescents make decisions autonomously, share decisions with their parents, or have decisions made for them by parents. Using a sample of 2,620 12- and 13-year-olds from the National Longitudinal Survey of Youth – Child Study we examine how childhood behavior and competence influence decision patterns in young adolescence. Individual models are used to test whether traits predict decision patterns and sibling fixed-effects models allow us to estimate effects of child characteristics net of stable family contributions. In both individual and sibling fixed-effects models, children with higher verbal ability share more decision-making with parents. Children with greater mathematical aptitude and children who are impulsive are more likely to make decisions without consulting parents. The impulsivity effect is stronger in families with fewer resources. These results suggest that children directly and indirectly influence household decision-sharing patterns.

[142 words]
Independence Giving or Autonomy Taking? Childhood Cognitive and Behavioral Predictors of Decision-Sharing Patterns Between Young Adolescents and Parents

How young adolescents and parents share – or do not share – decisions about aspects of youth and family life is considered an important indicator of family process and contributor to later development (Dornbusch et al., 1985). Although its relational and interactive aspects are recognized, decision-making is considered part of the set of family processes that comprise parenting. The processes whereby parents and children negotiate decisions are characterized as “autonomy granting” or “independence giving” (Bulcroft et al., 1996; Bumpus et al., 2001), reflecting a normative assumption that the right and power to make decisions is initially held by parents and then transferred to children via a parent-controlled process. Accordingly, research on the determinants of decision patterns has largely focused on parental, family-level and environmental factors, and the assumed relationship with subsequent child behavior is that the decision-making patterns shape, rather than reflect, children’s behavior (e.g. Bulcroft et al., 1996; Dornbusch et al., 1987; Lamborn et al., 1996; Smetana et al., 2004). Recent attention to the role of children as active agents within their environments (e.g. Crouter & Booth, 2003; Maccoby, 2000; Magnusson & Stattin, 1998; Sameroff, 1994, 2000) suggests that questioning the assumption that sharing of decisions is a parent-led process is warranted. This brief report summarizes a study of the ways in which children’s characteristics and actions may shape family decision-making processes. Specifically, we examine how family decision patterns reported by young adolescents vary as a function of prior socio-cognitive functioning and behavior.

Framework and hypotheses

This study’s outcomes of interest are whether decisions about young adolescents’ lives are made autonomously by the young adolescents, jointly by parents and youth, or solely by their parents. Children may influence who makes decisions indirectly or directly, and the indirect and direct pathways may interact. First, parents may respond to their child’s traits or actions, choosing whether to take part in decision-making based on a parental assessment of the child’s cognitive ability, maturity, or worthiness.
For instance, parents may allow a child to make decisions about some matter autonomously if they judge that child to be competent for the task. Parents may judge competence based on children’s cognitive functioning or moral reasoning. Physical maturity also may matter if parents are more likely to allow autonomy for youth who appear more adult-like. Bumpus and colleagues (2001) found that pubertal advancement positively predicted girls’ autonomous decision-making in some families. Finally, parents and children may engage in a quid pro quo, in which autonomy is granted as a reward for desired or helpful behavior. These pathways, while clearly influenced by the child, remain consistent with the interpretation of decision-making as a parent-controlled process, although the last, autonomy as a reward, does require some purposeful action from the child.

A second way that children may influence decision-making is through direct assertion of autonomy in which a child claims the right to make a decision. Such a claim may be followed by a period of child-parent negotiation. Alternatively, children can also act without seeking parental input, in which case they claim decision power by default. This may happen in cases in which parents choose not to exert preferences (for instance, the child turns on the television in the presence of a non-objecting parent) or are not given the opportunity to weigh in (a child turns on the television while parents are not present). Finally, children may act in knowing defiance of parents’ preferences, succeeding by fiat if parental capacity to intervene is hindered by availability or power. Children’s reasons for autonomy-claiming likely vary. In some cases, children may base their claim for power on the same types of capacities or behaviors that parents would use to judge their worthiness. For instance, children who help around the house may feel justified in asking for additional power. Alternatively, children’s desire for autonomy may stem from a distaste for authority and may be related to other anti-social behavior.

We believe that parent decision-ceding and child autonomy claiming are more often interactive, rather than independent, processes. Parent reaction to child assertion of autonomy may itself depend on child characteristics. For instance, if a child demands control, the parent may assent to this assertion if the child is likely to make what the parent deems a “good” decision or if the parent feels the child has earned
the right to make a decision. On the other hand, parents resist relinquishing power to a child who exhibits troublesome behavior or poor reasoning skills. In the empirical work that follows, we test whether decision-making patterns vary in relation to children’s personal traits and behavior. Our approach cannot clearly distinguish between the parent judgment, child assertion, or child assertion-parent reaction pathways, but it can provide some suggestive evidence by testing whether decision patterns vary systematically by factors likely to be associated with capable – or less capable – decision-making. We predict greater cognitive capacity, physical maturity, and pro-social behavior will be related to more autonomy; while problem behavior and impulsiveness will be related to less decision autonomy. We will examine whether decision-sharing patterns are moderated by gender, as has been found in previous research (Bumpus et al., 2001). Parent SES may also moderate any effects because parents’ possible responses to children’s characteristics and demands will vary across families with different levels of resources. Parents with more resources (more education, greater income, two parents relative to one) may be more able to respond to inappropriate assertions of autonomy.

This study makes two unique contributions to our understanding of decision-making patterns within the dynamic and bidirectional nature of parent-child relationships. First, to our knowledge it is the first use of longitudinal data on the childhood determinants of decision-making during early adolescence. We show how childhood characteristics are related to later decision-making patterns. Second, the data contain multiple siblings with the same mother, allowing us to compare children with different personal characteristics who face similar family-level environments. This allows for the use of fixed-effects models that can separate parent-effects from child- and transactional contributions. This is particularly helpful at drawing conclusions about how family resources, such as higher socio-economic status or the presence of a second parent, affect parents’ ability to respond proactively to child capabilities or demands.

Method

Sample

The sample consists of young adolescents whose mothers are respondents of the 1979 National Longitudinal Survey of Youth (NLSY79). The NLSY79 began with a nationally representative sample of
Decision-making patterns 4

men and women who were age 14 to 21 in 1979. Beginning in 1986, data have been gathered about the
children of the women in the 1979 cohort; these data are known as the NLSY79 Child Data, or NLSY-C
(Chase-Lansdale et al., 1991). Interviews take place every two years and include parent reports on
children’s environments and well-being, some brief developmental measurements of children, and young
adolescent self-reports. The present sample is drawn from 3202 children who were of age 12 or 13 when
their mothers were interviewed in the 1994 through 2000 waves. Of those, 2804 (87.6%) completed the
portion of the survey containing the key dependent variables of interest. Eliminating cases with missing
variables on other key covariates (n=172) gives a final analytic sample of 2632 young adolescents. Analysis
of selection shows that youth excluded from the sample because of missing data are marginally more likely
to be boys, are half a month older on average, have an average of 1.81 siblings relative to the included
cases’ 1.74 siblings, and have mothers who scored lower on the Armed Forces Qualifying Test (AFQT, a
measure of intellectual abilities administered in 1980) and are less likely to be employed. There were no
significant selection differences in race, family structure or mothers’ completed education. Because the
NLSY-C tracks children born to a sample of women, it includes many sibling groups. For 648 families the
data contain observations at age 12 or 13 for two or more children.

Although the original NLSY79 data could be weighted to represent the young persons living in the
U.S. in 1979, the NLSY-C is not a nationally-representative sample. The current sample consists of
children born to women in their early years of fertility, ages 16 to 32. First-born children and children of
young mothers are over-represented relative to their population prevalence. Additionally, the sample does
not include any children of immigrant women who have arrived since the sample began. This means that
the Hispanic children in the current sample are born to long-term residents or US-born women, and
findings based on this sample cannot be generalized to the current population of Hispanic youth. Despite
these limitations, the longitudinal and national nature of the data and its economic diversity make this a
valuable sample for developmental questions (Chase-Lansdale et al., 1991).

Decision-Making Indexes

Our dependent variables are three indexes created from child self-reports about decision-making
within the household. These questions, included in the NLSY-C after use in the National Health
Examination Survey (Dornbusch et al., 1985), cover six areas of children’s lives: buying clothes, spending money, friends to go out with, curfew, television watching, and religious training. For each area, youths responded to the question, “Who usually makes the decisions about…” by selecting all applicable responses from the set of “you” (the respondent), mother, father, stepfather, friends or someone else. For each domain, we follow the example of Dornbusch and colleagues (1985) in collapsing the possible decision patterns for each domain to one of three options: the child makes the decision and the parent or parents do not (“sole”), both the child and one or more parents make the decision (“shared”), or the parents are the sole decision-makers (“parent”). We then sum the across the six domains to get a count of how often each decision pattern occurs. This results in the sole, shared and parent indexes, each with a possible range of 0-6. Reliability for these three variables was modest (Kuder-Richardson \(\alpha = .64\) for sole child decisions, \(K-R\alpha = .76\) for shared, and \(K-R\alpha = .63\) for parents), but sufficient to allow these indexes to be used as overall measures of child decision power.

**Key Predictors: Child characteristics and Behaviors**

Because the children in our sample have been assessed biennially since birth, we can select measures collected before the decision indexes. Current parenting practices or family circumstances likely simultaneously shape child behavior and decision-making processes, making it hard to parcel out the child’s contribution to decision-making when both are observed at the same time. For instance, suppose a correlation is found between troubled behavior and parent-only decision-making. It might be the case that

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1 A seventh area of decision-making, allowance, was excluded. Because many children do not receive an allowance, responses about this area were not parallel to other decision areas.

2 The choice of “someone else” is coded as a parent and “friend” as a child. Children indicated that “someone else” took part in decisions very rarely for television (.38%) and most frequently for clothing choices (6.12%). Analyses of more detailed measures available in later waves of data suggest that in most cases, “someone else” refers to an adult relative, typically a grandmother. Participation of friends is also rare, ranging from .64% for how late you can stay out to 7.94% for which friends you can go out with. In 97.48% of instances in which children selected friends as a decider, they also selected themselves. Our findings are robust to variations in how the “friend” and “someone else” options are treated.
parental authority is causing rebellious action. Or it may be that the youth’s behavior has triggered a recent tightening of parental control. The former would be a negative side effect of parenting; the latter would be a parental reaction to child action. To address this simultaneity, we rely on child measures collected two or more years before the decision indexes. When possible, we tried to use measures collected before entry into adolescence, although data constraints sometimes override this preference. For instance, we use math achievement and problem behavior measures collected at age 6 or 7, an age that precedes pubertal development and transitions into middle school. However, the schedule by which NLSY-C sample members were administered other measures necessitated using responses from age 10-11 for some. Age of measurement collection is given for each key predictor below.

Physical maturity. We include physical attributes of the child that may be correlated with developmental outcomes or that may affect the ability or incentive to act independently. The variable for height is a z-score standardized by month of age and gender using U.S. growth charts. The third maturity variable is an indicator of whether menarche has occurred for girls.

Helpful and problem behavior. Children’s helpful or problem behavior may affect decision autonomy. Parents may reward helpfulness with greater autonomy or the maturity associated with contributing to a household may lead to better decision-making. We use child reports as to whether they do chores or spend time with younger siblings, the latter of which is used as a rough proxy for providing childcare. These reports were collected at age 10 or 11, two years before the decision indexes. Problem behavior may lead to greater parental control or inappropriate demands for autonomy may be part of a larger pattern of problem behavior. We use the Behavior Problems Index (BPI) (Peterson & Zill, 1986), a

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3 The NLSY-C contains questions about whether the child does work as part of a daily routine, either after school and before dinner or during a typical summer day. We use responses about work done on a typical summer day because some children’s after school activities or care situations preclude doing work during that time period. The NLSY-C does not directly ask children if they perform childcare and parent reports of sibling caretaking appear to underestimate casual sibling supervision that may occur (author citation). For this reason, the combination of “spends time with siblings” and having younger siblings is used as a proxy for providing childcare or at least casual supervision.
behavior check-list completed by mothers. We include the externalizing BPI scales collected at age 6 or 7. The BPI scores are standardized by age and sex.

**Cognitive ability.** Children with more developed reasoning ability may choose to or be allowed to make more decisions on their own. To test this, we use two cognitive measures. The Peabody Picture Vocabulary Test Revised (PPVT-R) (Dunn & Dunn, 1981) measures aptitude based on verbal ability. Scores used are from tests administered when the youth were age 10 or 11. The Peabody Individual Achievement Test Math test (PIAT-M, Dunn & Markwardt, 1970) is designed as a measure of math achievement, although scores likely reflect a mixture of achievement and aptitude. We use the scores collected at age 6 or 7. Both the PPVT and PIAT-M scores were age-normed against national samples (Center for Human Resource Research, 2004). We converted normed scores to z-scores for regressions.

**Impulsivity.** Children who tend to make decisions or take actions with little or no deliberation, may be less likely to seek or tolerate parental guidance. To measure impulsivity we use an index created from four items on the child self-administered section of the interview. Respondents were asked how strongly they agree (four choices) with statements including, “I think that planning takes the fun out of things.” These items are similar to questions derived by Buss and Plomin (1975) and Dickman (1990). Numeric values of responses are combined into a single index with higher values indicating greater impulsivity (α = .66). The index is standardized by sex and month of age.

**Covariates**

The main NLSY files permit the inclusion of characteristics of the child’s mother and household composition. The mother’s highest grade completed (three dummy variables, high school only omitted) is included as a rough measure of family SES. We also include the mother’s score on the AFQT and a dummy variable for current employment. Household income and the presence of the child’s father or stepfather in the household are additional indicators of total household resources. The number of siblings is based on children currently in the household, including step-siblings. The year of observation is included in all models to capture trends in children decision-making over time and any otherwise unobserved effects of the over-representation of children born to young mothers in earlier waves. Models
also include dummy variables for missing values. The year and missing dummy coefficients are not reported.

Results

Individual Models

Our first goal was to see if decision patterns in early adolescence are systematically related to individual and relationship characteristics observed earlier in childhood. We predicted the outcomes using negative binomial regressions estimated with a maximum likelihood procedure. In Table 1 we report incidence rate ratios (IRRs), which give the ratio of expected responses for a one-unit change in $x$. When the right-hand-side variable has a standard error of 1, the IRR reflects the change in frequency associated with a one standard-deviation change in the underlying scale. Statistical significance is based on p-values adjusted for the hierarchical structure of data.

Results in Table 1 confirm that the current sample shows the same patterns observed in previous research on decision-making (Bulcroft et al., 1996; Dornbusch et al., 1985; Flanagan, 1990; Lamborn et al., 1996). Girls report sharing more decisions with parents than do boys, in this case about 32% more likely to share decisions in an additional area (IRR 1.321, p<.001). Boys report more decisions are made by parents. Older children report more decision-making autonomy, with a 1.4% increase in sole decision-making associated with each month of age (p<.001), while first children report fewer sole and more parent-only decisions. Relative to non-Black, non-Hispanic children, both African-American and Hispanic children report more parental decision-making and fewer child-only decisions. Living with a biological father means more shared and parent-only decision-making and fewer child-only decisions.

Our main focus is whether childhood behavior and characteristics predict decision-making patterns in young adolescence. Several measures of physical maturity and behavior predict forms of decision-

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4 The negative binomial is appropriate for count variables with too much variation to be fitted by a Poisson model. With these data, goodness-of-fit tests on Poisson models indicated substantial over-dispersion, although the Poisson and negative binomial produce substantively similar results.

5 Because child respondents include siblings in the same households, the independence assumption is violated, potentially leading to mis-estimated standard errors. We correct for this using the “cluster” option in Stata, which performs a Huber-White correction.
making. Taller young adolescents report more autonomous decisions and fewer parent-only decisions. Children who regularly do chores report less decision autonomy and children who spend time with siblings including younger siblings report more shared decision-making. Children’s emotional and cognitive characteristics also predict decision-making. More impulsive children report making more decisions autonomously, with impulsivity associated with significantly lower levels of both shared and parent-only decisions. Higher PPVT scores are associated with fewer parent-only decisions and more shared decisions. Children with higher PIAT-M scores report more sole or shared decision-making.

Separate analyses (not shown) on single-gender sub samples reveal that these main effects are similar for boys and girls.

These findings suggest that child characteristics are associated with patterns of young adolescent decision-making, although the direction of any causal relationship cannot be known. It may be that unobserved parenting or family patterns both shape children’s development and determine how decisions are made. For instance, parents who foster verbal competence in their children may also be more likely to share decisions with their children, in which case the observed relationship between high PPVT scores and shared decision-making is driven by parenting actions rather than child competence or will.

**Sibling Fixed Effects Models**

To the extent that unobserved characteristics of the parents or household are correlated with the independent variables and relevant to the decision-making processes, bias in the coefficients of the cross-section model will be reduced by sibling fixed-effects models (Duncan et al., 2004). These models relate differences between siblings on the outcome measures (the decision indexes) to differences in predictor variables. These models cannot capture the effects of any characteristics that are common to all siblings, such as mother’s education and cannot capture non-shared and unmeasured elements of siblings’ environments. Fixed-effects models also require within-family variation on the left-hand-side variable.

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6 Some family-level characteristics, such as mother’s employment or total household income, vary over time and will hence be different when different children are observed at age 12-13. However, these changes may be associated with disruptions or transitions in the family that affect the decision-making patterns. Because the fixed-effects models only estimate the effect of such changes and cannot capture the effect of stable characteristics of different levels or values, we do not include family-level predictors.
Observations are dropped if a sibling pair has the same response, resulting in different sample sizes across the three indexes.

Table 2 contains parameters from a set of sibling fixed effects models estimated by the conditional maximum likelihood method using a Poisson specification. As in the individual models above, IRRs are reported and have the same interpretation. Estimated coefficients associated with key demographic predictors, namely child sex and age, are comparable in size and significance between the individual and sibling models, suggesting that the fixed effects siblings models are giving reasonable estimates. Note that standard errors are higher in the fixed effects models; fixed effects models are less powerful because they rely on intra-group variation (and are estimated on the smaller “sibling group” sample).

For the key predictors, the direction and magnitude in the individual models is generally maintained in the fixed effects models, although some effects are no longer statistically significant due to the decreased power of the model. As in the individual-level model, higher PPVT scores predict more shared decisions and greater impulsivity predicts more child-only decision-making. The positive relationship between PIAT-M and child-only decision making is stronger in the fixed effect model, with more mathematically competent children 12% more likely to make more decisions autonomously. The preservation of key findings across model specifications suggests there is a causal relationship between these child traits and decision-making, net of any consistent influence of parent or family characteristics.

Family Resource Sub-Samples

Because the fixed effects models cannot capture the effects of any family characteristics that are constant across children we also estimate models (not shown) separately for high or low levels of maternal education and for families with a biological father present versus families with a single mother (models for stepfather families generally fall between these two but were less stable over changes in specification). As in the full sample, PPVT scores predict more shared decisions and PIAT-M scores are positively related to autonomous decision-making. The direction of these results holds across all subgroups although the estimates are not always precise enough to yield statistical significance. The impulsivity effects vary across

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7 Allison and Waterman (2002) find that the conditional negative binomial model for panel data, as implemented by Stata, is not a true fixed-effect model and does not control for all stable covariates.
subgroups. Among mothers with a high school degree or less, impulsive children are more likely to make decisions by themselves (IRR 1.094, p<.10) and less likely to share decisions with parents (IRR .875, p<.10). For children of mothers with at least some college, there is no such impulsivity effect. Point estimates for impulsivity are about twice as large in single-mother families as in two-parent families, but neither of these coefficients are significant due to the imprecision of the estimates.

Discussion

In this study, we tested whether childhood characteristics and behaviors predict decision-making in early adolescence. Three predictors are significant in both the individual and sibling fixed effect models, suggesting that these relationships are robust and exist net of consistent unobserved effects of the parent, family, or environment. Children with high verbal aptitude (PPVT) share more decisions with their parents. Children with high mathematical aptitude (as measured by the PIAT-M) make more decisions autonomously. More impulsive children are more likely to make decisions without consulting parents, an effect that is concentrated among children of less-educated mothers and stronger among single-mother, relative to two-parent, households.

Before considering the meaning of these results, three important limitations should be considered. First, as is often the case when using data sets designed for secondary analysis, we rely on rough or abbreviated measures of key concepts. For instance, the four-item impulsivity index is better thought of as a checklist of beliefs linked to impulsiveness rather than a validated measure of an underlying trait. Second, our decision indexes are based on child reports, which have been shown in other surveys to diverge significantly from parent reports (Bumpus et al., 2001; Dornbusch et al., 1985). We cannot rule out the possibility that the observed relationships stem from reporting differences rather than differences in the underlying phenomena. Impulsive children may be more likely to report being the sole decision-maker (the first option listed). However, it is unlikely that this pattern should be more pronounced in some families than others, suggesting that this possible bias does not influence the findings that family resource levels moderate responses to impulsivity. Finally, while our data are longitudinal, the two-year windows are too wide to meaningfully capture changes in how decision-making power develops and
changes hands over time. We can only say how childhood traits and behavior are related to a point-in-time observation of decision-making at adolescence. Limitations such as these are trade-offs associated with the benefits of having a large, longitudinal sample (McCall & Appelbaum, 1991). This secondary analysis should be considered a complement to more intensive researcher-designed studies.

Despite these data weaknesses, we find strong and systematical relationships between children’s characteristics and subsequent family decision-making patterns. Recall that children’s influence may be exercised either indirectly through invoking parental response, directly through claiming power, or both indirectly and directly. Results linking decision-sharing patterns to math achievement and cognitive aptitude are consistent with the idea that parents cede or partially cede decision-making power based on parental assessment of child capacity. The finding that children who are better at math make more decisions autonomously and their lives are less governed by parent-only decisions makes sense given that math achievement requires logical reasoning and spatial awareness, skills that also lead to good decision-making and may invoke parental trust. Math-competent youth may also be more confident in their decision-making ability and may choose to act autonomously. Controlling for math ability, children who score high on a language-based measure of cognitive ability are more likely to share decisions with parents, a fact that holds both across and within families. It may be the case that these verbal-smart children have skills that make it easier for parents to talk with them or these children may seek out parental consultation. These results are not inconsistent with the interpretation of child autonomy claiming, but it is not possible to distinguish parent-led from child-led processes for these measures of child competence.

The final relationship found in both the individual and sibling models is that impulsiveness leads to greater decision-making autonomy. Children who are one standard deviation above average on our measure of impulsivity make 7% to 10% more decisions by themselves. We believe this reflects autonomy claiming, as it is unlikely that parents want more impulsive children to make more decisions on their own. The extent to which impulsiveness matters is moderated by family resources. For children of less-educated mothers, impulsiveness is strongly and significantly related to making decisions without parental
input. The same is not true for children of more educated mothers. The contrast between math competence and impulsivity is interesting. Presumably parents would want smarter kids to make decisions but would not want more impulsive kids to exercise this autonomy. Both PIAT-M scores and the impulsiveness index predict greater decision-making autonomy in the full sample. The PIAT-M effect holds regardless of maternal education and family structure (two-parent versus single-mother households). However, the impulsiveness effect only holds - and in fact holds more strongly - in families likely to have less resources. We interpret this as meaning that more resources allow parents to keep impulsive children in check through strategies unavailable to resource-strained households.

Our results do not contest the finding in earlier work (Dornbusch et al., 1985; Dornbusch et al., 1990; Lamborn et al., 1996; Smetana et al., 2004) that decision autonomy and subsequent delinquent behavior are linked. However, they do add more information about how decision-sharing patterns may arise and as such suggest that this linkage between autonomy and delinquency may be more nuanced than previously acknowledged. First, because both normatively positive and negative characteristics are associated with greater autonomy in decision-making, it may be the case that the autonomy-delinquency effect may be concentrated in children who claim autonomy out of an unwillingness to accept reason or authority. Because prior research did not consider the heterogeneity of child attributes, the extent to which child-initiated decision autonomy may lead to delinquency may have been understated. Secondly, earlier work on single-parent families and the “control” of adolescents suggested that family structure mattered, and that single-mothers were less likely to be able to “control” adolescents. Our findings reveal that control matters when a counteracting force is necessary. Some claims for autonomy are made by children who are competent to make decisions. When claims for autonomy are made by impulsive children, mothers likely to have lower resources are unable to counteract young adolescents’ desires for autonomy. Through highlighting the influence of children on family decision-making, we hope this work contributes a growing understanding of child agency in development.
References (author references removed for review)


### TABLE 1

Individual-level analyses predicting decision-making patterns at age 12-13

Incidence-rate ratios (IRR) reported, N=2632

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<tr>
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<td>.000 ***</td>
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<td>.000 ***</td>
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<td>less than high school</td>
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<td>.234</td>
<td>.852</td>
<td>.153</td>
<td>1.053</td>
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<td>some college</td>
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<td>.872</td>
<td>.039</td>
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<tr>
<td>college graduate</td>
<td>.896</td>
<td>.057 *</td>
<td>1.040</td>
<td>.683</td>
<td>1.057</td>
<td>.233</td>
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<tr>
<td>AFQT score (year 1981)</td>
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<td>.897</td>
<td>1.003</td>
<td>.047 *</td>
<td>.998</td>
<td>.006 **</td>
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<td>Mother employed</td>
<td>1.024</td>
<td>.454</td>
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<td>Household income ($10,000)</td>
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<td>.156</td>
<td>1.004</td>
<td>.439</td>
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<td>.536</td>
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<tr>
<td>Father in household</td>
<td>.889</td>
<td>.001 **</td>
<td>1.141</td>
<td>.052 *</td>
<td>1.072</td>
<td>.016 *</td>
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<tr>
<td>Step-father in household</td>
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<td>.604</td>
<td>1.066</td>
<td>.460</td>
<td>1.001</td>
<td>.985</td>
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<tr>
<td>Number of siblings</td>
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<td>.822</td>
<td>.905</td>
<td>.002</td>
<td>1.030</td>
<td>.014</td>
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***p<.001, **p<.01, *p<.10  Note: Models are estimated using negative binomial estimated with maximum likelihood procedure. Models also include indicator variables for year of observation and imputed missing values. Robust p-values are adjusted for multiple children within families.
<table>
<thead>
<tr>
<th></th>
<th>Sole Decisions</th>
<th>Shared Decisions</th>
<th>Parent Decisions</th>
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<tr>
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<td>IRR</td>
<td>p&lt;</td>
<td>z</td>
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<td>Age in months</td>
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<td>Height</td>
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<td>Chores (age 10-11)</td>
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</tr>
<tr>
<td>N children (N families)</td>
<td>1422</td>
<td>(627)</td>
<td></td>
</tr>
</tbody>
</table>

***p<.001, **p<.01, *p<.10  Note: Models are estimated using Poisson regression estimated with a conditional maximum likelihood procedure. Models also include indicator variables for year of observation and imputed missing values. P-values are based on robust standard errors, adjusted for multiple children within families. Sample sizes vary by outcome due to lack of within-family variation on outcomes.