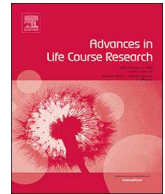




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# Looking homeward with the life course: Early origins of adult dwelling satisfaction?<sup>☆</sup>

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## ABSTRACT

The long-term influence of childhood economic and social exposures on adult health and well-being is well-known. Most childhood circumstances transpire in or near the home, yet research has largely neglected how early exposures shape people's experience of their residential context in adulthood. To help address this gap, we use retrospective longitudinal data from the Midlife Development in the United States (MIDUS) study. Drawing on a life course framework, we test the potential mediating roles of adult social, economic, and mental health processes. Results suggest that childhood parental warmth and maltreatment have an enduring influence on people's satisfaction with their adult home, while there is little indication that childhood economic conditions shape adult dwelling satisfaction. Analyses of average controlled direct effects suggest that the effects of childhood parental warmth are mediated slightly by adult socioeconomic attainment and psychological adjustment but especially by supportive family relationships during adulthood. This pattern is consistent with an attachment-based interpretation of the importance of childhood conditions for adult relationships as well as home satisfaction. Taken together, our results suggest that parent-child bonds cast a long shadow over how people experience their residential context decades later, through a diffuse, multifaceted set of intervening pathways.

## 1. Introduction

Individuals spend countless hours from childhood to old age in their home environments. Homes are where primary relationships—between children and caregivers, married and coresidential adults—evolve over decades (Cornwell, 2016). Home represents the most important site of primary socialization (Aragonés, Amerigo, and Perez-Lopez, 2017; Berger & Luckmann, 1967), while forming a home, especially with a spouse, has long been considered a watershed of adulthood (Benson & Furstenberg, 2006; Goldscheider & DaVanzo, 1985). Losing a home through foreclosure or eviction, on the other hand, is an acutely devastating event (Alley et al., 2011; Desmond, 2016; Downing, 2016). As a physical habitat, home is the space where people store, display, and utilize meaningful artifacts, technologies, and mementos (Ekerdt & Baker, 2014). And particularly in later-life when most adults become less mobile, feeling that a home fits one's needs becomes an acutely important aspect of well-being (Gilleard, Hyde, & Higgs, 2007; Oswald et al., 2007).

Even with abundant interdisciplinary research on the topic of home, little of it has sought insight from a life-course framework. That is, existing studies have not formally considered the early origins of adults' attachments to their homes or dwellings. The current study proposes a basic continuity between childhood material and social conditions and dwelling satisfaction in middle- and older-age. Prior studies show that childhood economic and parental exposures, most of which occur in or near the home, carry strong associations with adulthood outcomes such as mental health, chronic diseases, and mortality (Andersson, 2016; Ferraro, Schafer, & Wilkinson, 2016; Fothergill, Ensminger, Doherty, Juon, & Green, 2016). This suggests that home specifically may matter to durable health inequalities across the life course. However, the life-course origins of home or dwelling satisfaction remain unstudied in their own right.

Using national longitudinal data on middle-aged adults, we investigate whether childhood economic resources and relationships with parents cast a "long shadow" over people's experience of home, by showing links to adult dwelling satisfaction. Drawing on

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multidisciplinary perspectives on mechanisms of place attachment, we investigate whether socioeconomic attainment, psychological adjustment, and family interpersonal relationships during adulthood explain links between childhood factors and adult dwelling satisfaction across the life course.

### 1.1. To be “at Home”?

Scholars from social sciences including human geography, environmental psychology, and gerontology offer a variety of cognate terms to label the bonds between people and the places they inhabit (Lewicka, 2011). Common among these constructs is the assumption that people actively turn material spaces into meaningful places. Scholars also emphasize that place is experienced at multiple scales—nation, city, neighborhood, home—so it is important in theory and in method to specify particular layers of the residential environment under study (Lewicka, 2010).

Here, we investigate residential satisfaction in the context of the home, recognizing that people vary in the extent to which they draw from various locales in forming the totality of their sense of place (Cuba & Hummon, 1993). Still, home is the “most immediate primary environment” whose social, emotional, and cognitive significance for human development and future thriving later in the life course eclipses other parts of the residential environment (Aragonés, Amérigo, & Pérez-López, 2017:314). Satisfaction, the aspect of human-place bonding considered in this study, captures the “overall evaluation of the residential environment from inhabitants’ perspective” and reflects “the experience of pleasure or gratification deriving from living in a specific place” (Bonaiuto and Fornara 2003:42).<sup>1</sup> Besides representing an important dimension of well-being in its own right, satisfaction with one’s residential environment is significant because it is associated with better health (Fernández, Pérez, & Abuín, 2003) and may protect against loneliness (Prieto-Flores, Fernandez-Mayoralas, Forjaz, Rojo-Perez, & Martinez-Martin, 2011). At the collective level, residential satisfaction may promote neighborhood or community stability over time.

### 1.2. Dwelling satisfaction in life course perspective

A life course perspective emphasizes how the fortunes of adult life are decades in the making, carrying profound roots in childhood economic and social exposures. Childhood is marked by rapid social, cognitive, and emotional development that forms a lasting foundation for successes and relationships for the ensuing decades of life (Luecken, Roubinov, & Tanaka, 2013; Sampson & Laub, 2005; Umberson, Williams, Thomas, Liu, & Thomeer, 2014). That is, childhood advantages and misfortunes cast trajectories or shadows, some profound, over later-life outcomes, to a large extent by shaping the timing and success of watershed transitions involving peers, school, work, and relationships. Taken together, the life-course principles of lifelong development and timing and place (Elder, 1998; Elder, Johnson, & Crosnoe, 2003) suggest that situated socialization experiences during early life, which transpire largely in or around the home, are likely to impact adult dwelling satisfaction. We suspect that two aspects of the childhood home—economic or material conditions and social or relational factors—will be formative and consequential for the personalized or idiosyncratic institutionalization (Berger & Luckmann, 1967) of home, showing links to dwelling satisfaction decades later.

Following prior research, we differentiate between direct and indirect effects of childhood exposures (see Shuey & Willson, 2014). Direct effects, sometimes thought to reflect a critical or sensitive period model of development, imply that economic or family conditions experienced early in

life leave indelible marks on people’s minds or bodies. These imprints could ultimately form people’s vision of their adulthood home. Indirect effects, by contrast, focus on how childhood exposures sort individuals into diverse life-course pathways that eventually have consequences for adult home life. That is, indirect effects imply that childhood economic or family conditions lead to later circumstances which themselves shape evaluations of home. A life-course perspective joins both types of effects into a unified conceptual framework.

#### 1.2.1. Childhood economic conditions

Childhood economic conditions have at least two downstream consequences that may indirectly impact adult dwelling satisfaction. First, parental education or social class strongly predicts children’s educational and occupational attainments (Sewell, Haller, & Portes, 1969). Achieving high levels of education and high incomes, in turn, helps people sort into advantaged neighborhoods and increases their odds of purchasing relatively nice homes as adults. In general, individuals tend to live in similar neighborhoods across the life course, in large part because childhood socioeconomic status is strongest predictor of adult socioeconomic attainment, which in turn carries profound consequences for the neighborhood and home environments that individuals are able to attain (Sharkey, 2008, 2013; South, Huang, Spring, & Crowder, 2016). Neighborhoods marked by high poverty, crime, and disorder tend to be the least supportive and cohesive environments (Sampson & Raudenbush, 1999; Sampson, Raudenbush, & Earls, 1997), and such residential destinations may be unlikely to promote a strong sense of dwelling satisfaction for adults who sort into them. That said, disadvantaged people likely adopt as reference group frames others living on modest means or in relatively undesirable housing (see Guillen-Royo, 2011). This implies that indirect effects through adulthood socioeconomic attainment could be modest.

Second, childhood economic disadvantage is associated with mental health problems in adulthood. Adult distress and mental illness are far more common among those growing up with social or economic disadvantages (Gilman, Kawachi, Fitzmaurice, & Buka, 2003; Gilman, Kawachi, Fitzmaurice, & Buka, 2002; Melchior, Moffitt, Milne, Poulton, & Caspi, 2007). Low parental education is likewise associated with greater persistence and severity of adults’ mental disorders (McLaughlin et al., 2011). Distress or chronic negative affectivity in adulthood may, in turn, undermine dwelling satisfaction by impeding relationships with close or significant others who live at home or by making residential evaluations more pessimistic.

**Hypothesis 1.** Childhood economic advantage is positively associated with adult dwelling satisfaction.

**Hypothesis 2.** This association between childhood economic situation and adult dwelling satisfaction is mediated by adulthood socioeconomic conditions and psychological adjustment.

#### 1.2.2. Childhood parental bonds

The early origins of adult dwelling satisfaction also may be rooted in parent-child relationships. Though parent-child bonds are shaped in part by economic conditions (Conger & Donnellan, 2007), bonds still vary amply across socioeconomic status and exert an independent effect on subsequent life-course outcomes, including mental and physical health (Andersson, 2016; Carroll et al., 2013; Felitti et al., 1998; Repetti, Taylor, & Seeman, 2002) and socioeconomic attainment (Hill & Wang, 2015; López Turley, Desmond, & Bruch, 2010; Melby, Conger, Fang, Wickrama, & Conger, 2008).

Parental bonds define the childhood home environment, thus making them potential templates for adult dwelling satisfaction. Morgan’s (2010) developmental theory of place attachment depicts a transactional, reciprocal relationship between child-parent and child-environment bonds. Healthy connection to a primary attachment figure (i.e., parent) produces “emotional arousal, interaction and positive

<sup>1</sup> We refer to ‘dwelling satisfaction’ rather than ‘home satisfaction’, as the latter term has been used in previous research to denote people’s evaluation of family life or of their domestic duties (Gecas & Seff, 1990; Sastry, 1999).

affect”, resources which enable the child to apply a similarly healthy internal working model to the physical environment in which they play, explore, take pleasure, and master (pg. 15; see also Bowlby, 1969). Failure to develop a thriving connection with a parent, however, impedes the development of a healthy working model of self and environment, and so poor parent-child bonds may have an enduring impact on the satisfaction one eventually draws from their adult dwelling.

In distinction to a direct, developmental influence, any overall effects of parent-child bonds on adult dwelling satisfaction may be transmitted indirectly through multiple pathways. Socioeconomic attainments represent a first potential pathway. Emotionally supportive parenting improves performance during high school, apparently through increased academic engagement (López Turley et al., 2010; Melby et al., 2008). Parental warmth also seems to increase odds of college enrollment (Hill & Wang, 2015). The experience of parental abuse, however, has been linked to lower educational attainment, income, and net worth (Covey, Menard, & Franzese, 2013).

Psychological adjustment marks a second potential indirect pathway. Indeed, parental warmth facilitates emotional and psychosocial development that is consequential for mental well-being across the remaining life course (Moran, Turiano, & Gentzler, 2018; Stansfeld, Head, Bartley, & Fonagy, 2008). Harsh parental treatment and detached parenting practices inhibit coping skills and strategies and are linked to mental health problems such as psychological distress in adulthood (Krause, Mendelson, & Lynch, 2003).

A third indirect pathway that may link parent-child bonds to adult dwelling satisfaction is the perceived availability of close social support during adulthood. Children lacking warm, supportive relationships with their parents are exposed to a form of relational stress which proliferates well into adulthood and “degrades relationship quality in adulthood” (Umberson et al., 2014: 22). Mistreated children, for instance, demonstrate elevated endocrine and autonomic activity in response to adulthood stress (Meaney, 2001). This heightened stress reactivity can destabilize relationships with spouses, children, and other family members (Repetti et al., 2002; Taylor, Way, & Seeman, 2011). Indeed, several studies report that physical and emotional abuse during childhood predict lower levels of familial closeness and perceived support availability during adulthood (Parker, Maier, & Wojciak, 2018; Savla et al., 2013; Shaw & Krause, 2002). Lacking support from family members likely hampers dwelling satisfaction, as people’s assessments of their housing conditions are shaped by how their family life is going (Sirgy & Cornwell, 2002).

**Hypothesis 3.** Parental warmth during childhood is positively associated with adult dwelling satisfaction.

**Hypothesis 4.** Child maltreatment by parents is negatively associated with adult dwelling satisfaction.

**Hypothesis 5.** The associations between childhood parental warmth and maltreatment and adult dwelling satisfaction are mediated by adulthood socioeconomic conditions, psychological adjustment, and supportive family relationships.

## 2. Method

### 2.1. Sample

Data used in our analysis come from the Midlife Developmental in the United States (MIDUS) study, a national longitudinal survey of American adults’ health, well-being, and social lives. We use the main random digit dialup sample, which was initially obtained in 1995–1996 and included the sampling frame of all adults English-speaking noninstitutionalized adults aged 25–74 in the contiguous 48 states with a land line. After an initial phone interview, respondents were sent a self-administered questionnaire (SAQ). Respondents who completed both the phone interview and SAQ ( $N = 3,032$  have valid post-stratification weights and comprise our sample. Response rate for the phone interview was 70 % and was 86.6

% for the SAQ, conditional on phone response. Hence, the overall response rate was 61 % ( $.70 \times .87 = .61$ ). Respondents were re-contacted in 2004–2006 and again interviewed by phone and given the SAQ survey. Of the original 3,032 respondents, 1,746 completed both modes of data collection at Wave 2 (58 %). Approximately 16 % of the sample died between Wave 1 and Wave 2. Attrition by non-response was highest among non-white, older, unmarried, and unhealthy respondents. Analyses use both waves and incorporate a weighting procedure to deal with potential bias from attrition (detailed below). A third wave of data collection commenced in 2013–2014; though extra follow-up measures could be advantageous, the relatively long gap between measurement occasions compounds attrition complications (only 37 % of the original 3,032 respondents were followed up at Wave 3. Further, Wave 1 provides information about respondents’ childhoods, and so survey records can cover a long span of the life course by linking retrospective Wave 1 reports to adulthood variables measured in 1995–1996 and 2004–2006. For these reasons, primary analyses use data from Waves 1 and 2 (though supplementary analyses examining a Wave 3 outcome are consistent with those presented below). Missing data was minimal (all variables < 2%), and so main analyses use listwise deletion.

### 2.2. Dependent variable: adult dwelling satisfaction

One section of the MIDUS SAQ was devoted to diverse dimensions of residential evaluation, asking respondents to indicate how much a series of statements characterized their home and neighborhood. Though some prior studies assessing residential satisfaction combine assessments of the home and the neighborhood into a common scale (e.g., Jokela, 2009), we isolate expressions of dwelling satisfaction from other aspects of residential evaluation (e.g., neighborhood safety, neighborhood repair). Impressions of homes and neighborhoods are inevitably intertwined to some degree, but isolating dwellings from the broader contexts in which they are situated is supported by auxiliary factor analyses and item intercorrelations, and allows for more targeted inferences about dwelling satisfaction in particular.<sup>2</sup> Therefore, *dwelling satisfaction* is measured as the summed response to two statements at Wave 2: “I’m proud of my home” and “I live in as nice a home as most people” ( $\alpha = .78$ ). Respondents indicated to what extent these characterized their situation: “a lot” (1), “some” (2), “a little” (3), or “not at all” (4). Scores were reverse coded prior to summation so that higher scores indicate higher dwelling satisfaction.

### 2.3. Independent variables (Wave 1)

*Childhood economic conditions* were measured as a composite of childhood socioeconomic status, using retrospective reports about mother’s and father’s education and occupational status, both measured

<sup>2</sup> Factor analysis of the 12 total home and neighborhood questions with varimax rotation indicates that the two items used in our dependent variable feature loadings > .58 on a distinct factor, while items about concepts such as neighborhood repair (“buildings and streets... are kept in good repair”, “my neighborhood is kept clean”) or neighborhood safety (feeling safe “at night” and “during the daytime”) load considerably lower (all loadings < .24 on satisfaction factor; but > .60 on their own respective factors). Patterns of correlations further support our approach, as the dwelling satisfaction items are themselves strongly correlated ( $r = .66$ ), while being associated more weakly with other items (wording for all 12 items and full correlation matrix available by request). One exception is an item stating “I feel very good about my home and neighborhood”, which correlates with the home pride statement at  $r = .66$  and the home nice as others item at  $r = .59$  (not surprisingly, it also loads strongly with dwelling satisfaction in factor analysis). Feeling good about one’s residence is undoubtedly a dimension of dwelling satisfaction, and so such patterns attest to construct validity. Because this third item encompasses both home and neighborhood evaluation we elected to exclude it from the final dependent variable scale to avoid double-barreled wording and to foreground dwelling satisfaction’s conceptual clarity. Results incorporating this item were indistinguishable from those using the two-item index.

during the phone interview. We used the maximum value of parents' education level when both were reported and used either value when one was missing (measured as 0–20 years). We employed a similar procedure for the occupational Socioeconomic Index (SEI) of each parent. Each facet of SES was then standardized and converted to a cumulative normal probability for ease of interpretation (range = 0–1, noninclusive). The final value of childhood socioeconomic status was the average of each normalized score.

*Childhood parental bonds* were measured in terms of emotional warmth as well as any maltreatment or abuse. Emotional warmth was measured using the average of four retrospective SAQ questions about the relationship: "How much did s/he understand your problems and worries?" "How much love and affection did s/he give you?" "How much time and attention did s/he give you when you needed it?" and "How much could you confide in him/her about things that were bothering you?", from "not at all (1) to "a lot" (4). Warmth questions were asked separately about mothers ( $\alpha = .89$ ) and fathers ( $\alpha = .91$ ). We averaged both scales or used the available mean score when one parent was missing. Whereas emotional warmth addresses a positive aspect of parent-child bonds, *maltreatment* reflects a negative or abusive dimension. *Childhood maltreatment* by parents was drawn from the Conflict Tactics Scale (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998), encompassing both physical and emotional abuse. Childhood *physical abuse* was assessed by two lists, the latter denoting severe violence: (1) pushed, grabbed, or shoved; slapped; threw something at and (2) kicked, bit, or hit with a fist; hit or tried to hit with something; beat up; choked; burned or scalded. Measures of *emotional abuse* came from a list of six items: insulted; sulked; stomped away; did something to spite; threatened; and kicked/smashed something. Initial response categories for each behavior included never, rarely, sometimes, and often. We collapsed all non-never categories and indicate whether either or both parents engaged in both forms of maltreatment with a set of dummy variables.<sup>3</sup> All abuse questions were collected in the SAQ, a preferred survey technique for assessing sensitive topics (Tourangeau & Yan, 2007).

#### 2.4. Childhood and time-stable covariates (Wave 1)

All analyses control for basic aspects of demographic and childhood background that could confound the estimated association between childhood economic or parental exposures and adult dwelling satisfaction. These include lived in *rural* area for most of childhood (1 = rural, 0 = other type of area), *lived with both biological parents* until age 16 (1 = yes, 0 = no), *fair/poor physical health* at age 16 (1 = fair/poor, 0 = good/very good/excellent), age at survey (years), sex (female = 1, male = 0), and race/ethnicity (1 = nonwhite, 0 = white).

#### 2.5. Life-course mediators and covariates (Waves 1 and 2)

Net of confounding covariates, key analyses examine factors that could mediate the effects of childhood economic or parental exposures: *adult socioeconomic attainment*, *psychological adjustment*, and *family social support*.

We incorporate four measures of *adult socioeconomic attainment*. Household income is summed from all sources (e.g., personal income, spousal income, social security income), each originally measured in ranges (e.g., \$1000–1999) and assigned its midpoint value. The final variable was top-coded at \$300,000 and logged to reduce skew. Education is the number of years of formal education corresponding to highest degree completed (e.g., high school degree = 13 years). Subjective social status was measured by showing respondents a picture of a ladder and providing the following prompt: "Think of this ladder as

representing where people stand in their communities... Where would you place yourself on this ladder?" Scores ranged from 1 to 10, and we coded higher community standing with higher rung values on the ladder. Homeownership was denoted with a dummy variable (own = 1, rent = 0).

*Psychological adjustment* was measured with a six-item index representing nonspecific psychological distress such as hopelessness, worthlessness, and sadness (Kessler et al., 2002). Respondents were asked the frequency of these feeling over the past 30 days from "all of the time" (1) to "none of the time" (5). Responses were coded so that higher scores indicate more distress and were summed ( $\alpha = .87$ ).

*Family social support* during adulthood were measured using two separate sets of questions, one referring to family members not including spouse, and one referring specifically to the spouse. For family in general, respondents were given questions such as "how much do members of your family really care about you" and "how much can you rely on them if you have a serious problem". The four statements were assessed from "not all" (1) to "a lot" (4) and averaged ( $\alpha = .83$ ). Six similar questions with the same response options were asked about spouses, if applicable (e.g., "how much does your spouse or partner really care about you?", "how much does he or she appreciate you?") ( $\alpha = .91$ ). Unpartnered respondents were assigned the value of the first index, while partnered respondents received the average score of the general family and the partner-specific index.

As life-course covariates, we also control for a variety of marital, family, and neighborhood variables that occur after the basic childhood confounders in time and could confound associations between adult dwelling satisfaction and the above mediating pathways. Covariates include marital status (currently married = 1, otherwise = 0), total number of times married, years lived in current neighborhood, household size, number of living children, and self-reported neighborhood safety and neighborhood repair (with each neighborhood index consisting of two items drawn from residential evaluation section of the survey questionnaire, mentioned above). In addition to these individual-level confounders, we consider the possibility of neighborhood-level confounding of individual dwelling satisfaction. For this, two variables were sourced from the 2000 Census and then linked to the geocodes of MIDUS respondents: % in *Census tract below poverty level* and *Census tract population density* (logged to reduce skew).

#### 2.6. Analysis

We adopt principles of causal analysis to estimate how childhood conditions may affect dwelling satisfaction. Specifically, analyses begin by regressing the independent variable (or "treatment"; childhood socioeconomic conditions, parental warmth, childhood maltreatment) on the dependent variable (or "outcome"; dwelling satisfaction) while adjusting only for childhood or ascribed factors that could logically confound the association. These include the retrospective reports of additional childhood conditions (living in rural context, having two biological parents, and early life health) as well as time-stable demographic traits (age/cohort, race, and gender). The purpose of these initial regression equations is to produce an estimate of total effects and we fit them with ordinary least squares regression.

Adulthood dwelling satisfaction is likely to be shaped by multiple factors downstream from childhood. Although analysts sometimes adjust for post-treatment covariates in this situation, controlling for such variables can bias causal estimates of the treatments' effects on the outcome—whether or not childhood has an actual effect on the intervening variable. That is, there are many variables caused by a treatment (e.g., parent-child bonds) that can simultaneously affect the outcome and confound the association between the mediator and outcome (these are known as 'intermediate confounders'; see Vansteel, 2009). Simply conditioning on mediators and then documenting the extent to which the treatment coefficient changes must assume that there are no intermediate confounders (Acharya, Blackwell, & Sen, 2016). This is an unrealistic

<sup>3</sup> Preliminary analyses differentiated rare maltreatment from maltreatment experienced sometimes/often, but these expanded categories had effects on dwelling satisfaction non-distinguishable from one another. We therefore combined the categories for the sake of parsimony.

assumption in almost any research scenario. We therefore investigate the extent to which our anticipated mediator variables channel the treatment effects by estimating unbiased average controlled direct effects (ACDE), following the procedure outlined by Acharya et al. (2016). The ACDE approach avoids assuming there are no intermediate confounders in the pathway from childhood conditions to adult dwelling satisfaction.<sup>4</sup>

Rejecting the null hypothesis (i.e., no association between treatment and outcome) in the ACDE procedure indicates that *another* mechanism is operating in addition to the putative mediator. On the other hand, failing to reject the null hypothesis would indicate that the treatment has no effect on the outcome once the mediator is considered. This would show that the mediator is indeed the responsible mechanism.

It is important when incorporating mediators and mediator-outcome confounders to be careful about temporal ordering. Treatment or childhood variables are drawn from MIDUS Wave 1, but as retrospective measures, they refer to conditions experienced well in advance of the study baseline. Candidate mediators, while also drawn from the Wave 1 survey, are assumed to have occurred after childhood because they refer to the present (when most respondents are middle-aged). One key exception is subjective social status, which was not surveyed until Wave 2. ACDE analyses assessing subjective social status as mediator, then, use an outcome and a mediator measured simultaneously.

The relatively long gap between Wave 1 and Wave 2 (~10 years) suggests that it is not unreasonable to examine the other mediators at Wave 2 for the sake of sensitivity. Not only could some of the potential mediator and mediator-outcome confounder variables change considerably in value over the course of a decade, but some home- and neighborhood-related confounders would refer to different residential context if the respondent moves between waves. We recognize that there are trade-offs between assuming mediators should be observed at Wave 1 versus Wave 2 (exactitude of temporal ordering vs. correspondence with present residential context), and so we present ACDE estimates under both scenarios to shed light on the robustness of our results.

To help address any parameter bias from selective survey attrition, we apply inverse-probability-of-attrition (IPA) weights to all regression analyses presented here (Weuve et al., 2012).<sup>5</sup> Substantive findings regarding total, direct, and indirect effects are unchanged without this weighting procedure.

### 3. Results

Table 1 overviews descriptive statistics for our MIDUS analytic sample. As shown, most MIDUS participants express high satisfaction in their homes, as indicated by a mean score of 7 (out of 8) and by the fact that about 70 % of the sample scored above the midpoint value of the index (i.e., values > 5). Respondents' recollection of their parent-child relationships tilted towards warmth, as demonstrated by an average response of 3 out of 4 on the scale. At the same time, about 60 % of the

<sup>4</sup>The procedure of ACDE estimation is to first remove the influence of the mediator from the outcome, producing a "demediated" version of the dependent variable. In addition to treatment-outcome and treatment-mediator confounders, plausible mediator-outcome confounders (e.g., adult neighborhood characteristics) are included in this first-stage equation to account for intermediate confounding. Stage two involves regressing the demediated variable on the treatment and pre-treatment confounders.

<sup>5</sup>First, we estimated the probability being observed at Wave 2 using a logit model whose predictors included a wide range of health and demographic variables from baseline. Second, we calculated an inverse predicted probability score from this model. Third, we multiplied this score by the standard post-stratification weight produced by the MIDUS team and used this new weight in our models. The overall goal of the IPA weighting procedure is to assign more importance to those Wave 1 respondents least likely to remain in the study (e.g., advanced age, poor health, low income), thereby compensating for their relative underrepresentation at Wave 2. We trimmed the top 5% of scores to avoid extreme IPA weight values.

sample reported that they experienced some form of physical abuse at least rarely. A similar percentage of the sample reported emotional maltreatment at least rarely during childhood (63 %).

Table 2 presents the results of regression analyses focusing on the relationship between the childhood economic and parental exposure variables and adult dwelling satisfaction. Estimates shown for childhood conditions are interpretable as total effects, net of basic demographic confounding factors. Model 1 isolates childhood economic and family conditions while adjusting for confounders. The initial model gives only marginal support to Hypothesis 1, as shifting from lowest to highest childhood SES is associated with a .59 increase in the dwelling satisfaction scale ( $p < .1$ ). This marginally significant association disappears, however, when indicators of parent-child bonds are added in Model 2. Here, emotional maltreatment and parental warmth emerge as significant predictors of dwelling satisfaction, each in the expected direction and in partial support of Hypotheses 3 and 4. Support for Hypothesis 4 is partial because there is no evidence to indicate that physical abuse shapes dwelling satisfaction, net other variables in the model.<sup>6</sup>

Taken together, childhood variables and basic confounding variables predict modest variance in adult dwelling satisfaction ( $R^2 = 6\%$  in Model 2).<sup>7</sup> Few of the proposed confounders had a significant association with dwelling satisfaction. Living with both biological parents predicted a quarter unit increase in the outcome in Model 1, but this association was no longer significant once accounting for parent-child bonds. Increased age was linked to a .01 increase in dwelling satisfaction ( $p < .01$ ).

As a robustness check on this first stage of the analysis, we investigated whether findings were sensitive to model choice. This is particularly important because of the left-skewed distribution of the dependent variable. It is possible that dwelling satisfaction's distribution reflects a ceiling effect in which the range of positive expression is suppressed by the available survey response options (i.e., "some" and "a lot" are the two highest categories). Perhaps dwelling satisfaction would have a distribution closer to the normal curve had respondents been able to convey more strongly-worded affirmations of their residential situation. To entertain this possibility, we re-estimated Model 2 with Tobit regression (shown in Appendix Table A1).<sup>8</sup> The Tobit estimates (which can be interpreted analogously to OLS estimates) corroborate findings shown in Table 2, though effect sizes are larger. For instance, the coefficient for parental warmth is about 73 % larger ( $b = 0.38$  vs.  $b = 0.22$ ). The coefficient for emotional abuse likewise remains negative and is of larger magnitude. In all, these results suggest that Table 2 results are conservative estimates suppressed somewhat by the nature of the survey questions.<sup>9</sup>

<sup>6</sup>Reduced models indicate that physical maltreatment has the expected negative and significant association with dwelling satisfaction before emotional maltreatment is included in the analysis ( $b = -0.22$ ,  $p < .01$ ). The disappearance of this effect in the final model, however, implies that co-occurring emotional invecive exerts primary damage to adult dwelling satisfaction. Effects of emotional maltreatment also overlap with parental warmth; without the latter variable in the model, the coefficient for was 29% larger ( $b = .35$ ) and significant at  $p < .001$ .

<sup>7</sup>Prior studies using MIDUS data and attempting to avoid conditioning on post-treatment covariates report similarly modest  $R^2$  values (see, e.g., Shaw & Krause, 2002; Tsenkova, Pudrovska, & Karlamangla, 2014). Whereas the second stage of analysis incorporates adulthood mediators and proximal covariates that have higher explanatory power, the purpose of Table 2 is to establish total effects which may then be explained through life course pathways that are more proximal.

<sup>8</sup>Tobit estimation provides maximum likelihood estimates under the assumption that the variable has a theoretically continuous and normal distribution that happens to be censored at values of 8. Under the Tobit approach, 843 cases (52%) are considered right-censored. Cases with scores < 8 are analyzed identically to linear regression.

<sup>9</sup>Similar results obtain when we re-analyzed model 2 with ordered logistic regression. Rare and frequent emotional abuse each lower the odds of a 1-unit higher score on the dwelling satisfaction scale (by 34% [ $p < .01$ ] and 32% [ $p < .05$ ], respectively). Each unit increase in parental warmth boosts the odds

**Table 1**  
Unweighted Sample Statistics, Midlife Development in the United States Study (N = 1623).

	Range	Mean/ prop.	SD
dwelling satisfaction	2–8	7.00	1.31
<i>childhood economic and parental exposures</i>			
parental SES	.11–.94	.47	.14
physically maltreated	0, 1	.60	
emotionally maltreated	0, 1	.63	
parental warmth	1–4	2.95	.65
<i>childhood covariates</i>			
rural	0, 1	.24	
two biological parents	0, 1	.79	
fair/poor health age 16	0, 1	.04	
<i>time-stable covariates</i>			
female	0, 1	.54	
Age, W1	25–74	47.45	12.46
nonwhite	0, 1	.08	
<i>life course mediators and covariates</i>			
distress, W1	1–5	1.54	.61
distress, W2	1–5	1.53	.59
family support, W1	1–4	3.49	.51
family support, W2	1–4	3.55	.51
education, W1	5–22	15.29	2.66
total household income (logged), W1	0–12.61	10.70	1.64
subjective social status, W2	1–10	6.53	1.85
own home, W1	0, 1	.80	
own home, W2	0, 1	.88	
total times married, W1	0–5	1.17	.67
total times married, W2	0–13	1.28	.77
currently married, W1	0, 1	.68	
currently married, W2	0, 1	.69	
years lived in current neighborhood (logged), W1	–2.30–4.29	1.88	1.47
years lived in current neighborhood (logged), W2	–2.30–4.38	2.25	1.38
neighborhood safety, W1	2–8	7.14	1.18
neighborhood safety, W2	2–8	7.29	1.06
neighborhood repair, W1	2–8	6.93	1.28
neighborhood repair, W2	2–8	6.94	1.31
Census tract % below poverty, W2	.29–53.96	9.96	7.61
Census tract population density (logged), W2	–.26–12.05	6.62	2.00
household size, W1	1–8	2.55	1.64
household size, W2	1–9	2.46	1.22
number of children, W1	0–10	2.29	1.64
number of children, W2	0–12	2.51	1.75

3.1. Examining mediating pathways after childhood

The second phase of the analysis draws on causal estimation techniques to assess mediation processes. Average controlled direct effects (ACDEs) test the potential mediating role of key indirect pathway processes. For illustrative and practical purposes, exposition is given here to parental warmth, as this childhood exposure showed a robust, positive connection with dwelling satisfaction (unlike the childhood economic exposures) and was also found in additional analyses to be associated with putative mediating variables more consistently than was emotional abuse. Fig. 1 shows a series of five ACDE estimates with 95 % confidence intervals, each specifying a different mediation pathway. Appendix Table A2 indicates which life course covariates are adjusted in which particular ACDE estimate.<sup>10</sup> The ACDE estimates are shown in comparison to the baseline regression estimate taken from

(footnote continued)

of higher dwelling satisfaction by 37% ( $p < .01$ ).

<sup>10</sup> Each column of Table A2 focuses on an ACDE estimate addressing one particular mediating mechanism. A mediating pathway in one ACDE estimate would be a possible mediator-outcome confounder for another candidate mechanism (e.g., psychological distress is the mediator in columns 1 and 2, but could confound the indirect effect of family support in columns 3 and 4).

**Table 2**  
Unstandardized regression coefficients, childhood effects on adult dwelling satisfaction, controlling for treatment-outcome confounders.

VARIABLES	(1)	(2)
<i>childhood economic and parental exposures</i>		
parental SES	0.59 (0.34)	0.49 (0.34)
physically maltreated		–0.02 (0.10)
emotionally maltreated		–0.25* (0.10)
parental warmth		0.22** (0.07)
<i>childhood covariates</i>		
Rural	0.10 (0.10)	0.06 (0.09)
two biological parents	0.26* (0.11)	0.20 (0.11)
fair/poor health age 16	0.25 (0.19)	0.27 (0.18)
<i>time-stable covariates</i>		
Female	0.02 (0.08)	0.01 (0.08)
Age	0.01*** (0.00)	0.01** (0.00)
Nonwhite	–0.21 (0.15)	–0.24 (0.15)
Constant	5.87*** (0.30)	5.61*** (0.38)
Observations	1,623	1,623
R-squared	0.03	0.06

Robust standard errors in parentheses.  
\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

Model 2 ( $b = 0.22, p < .01$ ).<sup>11</sup> Situations where a given ACDE remains statistically distinguishable from ‘0’ would be evidence against the null hypothesis of no treatment effect and would imply that another mediator has an indirect effect on dwelling satisfaction. All ACDEs shown in the figure have confidence intervals at or greater than 0, indicating that none of the mediators on their own can fully account for the original association. Accounting for family support pushes the ACDE farthest from its baseline size (from 0.22 to 0.14), suggesting that this variable is a stronger mediator or pathway than is psychological distress or subjective social status. Indeed, the 95 % confidence interval for family support rests directly on 0, giving the strongest evidence for mediation among the pathways examined.

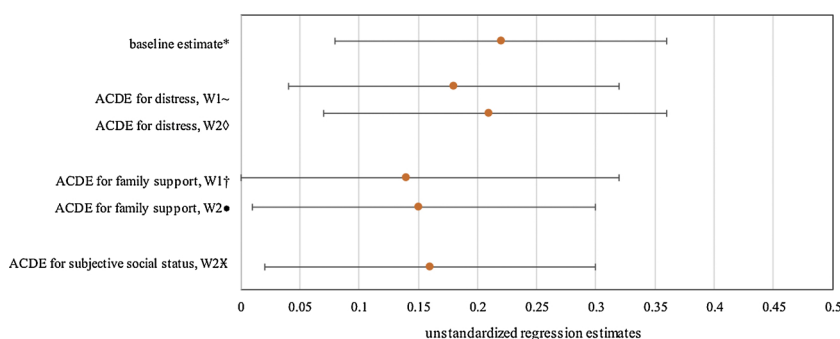
Though Fig. 1 shows that none of the proposed pathways appear to function as a singularly decisive mediator, Wave 1 family support and psychological adjustment together carry much of the initial association between parental bonds and dwelling satisfaction. Indeed, supplementary regression analyses indicate that simply adjusting for both factors (rather than isolating singular pathways with ACDE estimates) reduces the childhood warmth coefficient by 77 % to .05 (95 % C.I. = –.09–.19). Family support and distress—both of which are strongly linked to recollections of parental warmth—each have significant associations with the outcome.<sup>12</sup>

Supplementary results also reveal that subjective social status—which was boosted significantly by high levels of recalled parental warmth—had a significant association with adulthood dwelling satisfaction.<sup>13</sup> As mentioned above, subjective social status was

<sup>11</sup> We also considered the mediating role of household income, education, and homeownership, but parental warmth had no bearing on these factors in treatment-mediator regression models, and so they were left out from Fig. 1 as mediating pathways (analyses are available upon request).

<sup>12</sup> A standard deviation increase in distress decreases dwelling association by .08 of a standard deviation ( $p < .05$ ), whereas each standard deviation increase in family support elevates it by 1/10 of a standard deviation ( $p < .01$ ).

<sup>13</sup> The standardized regression coefficient was .14 ( $p < .001$ )



**Fig. 1.** Average controlled direct estimates baseline estimates for effect of parental warmth.

Notes: ACDE = average controlled direct effect; baseline estimate comes from Table 2, model 2.

\* $R^2$  for full model = .06; treatment-outcome covariates include parental SES, physical abuse, emotional abuse, rural home, two biological parent home, fair/poor health at age 16, female, age, nonwhite; no life course mediators or covariates included.

~ psychological distress (W1) investigated as mediator;  $R^2$  for full model = .16; treatment-outcome covariates identical to baseline estimates model; included life course covariates—to adjust for mediator-outcome confounding between W1 psychological distress and residential satisfaction—are indicated in Table A2 (Appendix).

◇ psychological distress (W2) investigated as mediator;  $R^2$  for full model = .31; treatment-outcome covariates identical to baseline estimates model; included life course covariates—to adjust for mediator-outcome confounding between W2 psychological distress and residential satisfaction—are indicated in Table A2 (Appendix).

† family support (W1) investigated as mediator;  $R^2$  for full model = .16; treatment-outcome covariates identical to baseline estimates model; included life course covariates—to adjust for mediator-outcome confounding between W1 family support and residential satisfaction—are indicated in Table A2 (Appendix).

● family support (W2) investigated as mediator;  $R^2$  for full model = .31; treatment-outcome covariates identical to baseline estimates model; included life course covariates—to adjust for mediator-outcome confounding between W2 family support and residential satisfaction—are indicated in Table A2 (Appendix).

X subjective social status (W2) investigated as mediator;  $R^2$  for full model = .31; treatment-outcome covariates identical to baseline estimates model; included life course covariates—to adjust for mediator-outcome confounding between W2 subjective social status and residential satisfaction—are indicated in Table A2 (Appendix).

unfortunately available only at Wave 2. Still, the results in Fig. 1 indicate that ACDE estimates for family support and psychological adjustment differ little whether they were measured at either point in adulthood posttreatment, Wave 1 or Wave 2. There is no obvious reason to suspect that the pattern would differ for subjective social status had Wave 1 scores been available.

Comparing ACDEs under the Wave 1 mediator and the Wave 2 mediator scenarios also provides a useful robustness check because varying the temporal assumption has a large impact on  $R^2$  value. Not surprisingly, models including any mediators or confounders measured contemporaneously with the outcome explained a far larger share of the variance relative to models that lagged these variables (31 % vs. 16 %), as expected due to their more proximal timing. Though lagging the mediating or confounding variables helpfully preserves temporal ordering, using the Wave 2 versions ensures that household- and neighborhood-related variables apply to one's current residential environment rather than to past conditions. Indeed, Wave 2 household size was negatively and significantly associated with household satisfaction, while Wave 2 home ownership, neighborhood safety, and neighborhood repair were positively associated with the outcome. When measured at Wave 1, the only variable from this set to be associated with the outcome was neighborhood repair. Notably, however, using contemporaneous Wave 2 covariates to account for mediator-outcome confounding or using the lagged counterparts from Wave 1 did not have any noticeable impact on ACDE estimates. When mediator measures were available at both waves (distress and family support), the ACDE estimates corresponding with Wave 2 mediation were slightly larger.

#### 4. Discussion

This study considers attachment to home during adulthood as an important aspect of well-being that likely has origins in childhood exposures. Indeed, the life course perspective emphasizes the long-term continuity of life trajectories, positing an ineluctable link between *developmental timing* and *place* in the formation of people's pathways through time (Elder, 1998; Elder et al., 2003). We expected that factors such as childhood economic conditions and parent-child bonds cast a long shadow on how people experience their residential context during adulthood.

Results did not support our hypotheses about the effects of childhood economic conditions. Indeed, parental education and occupational status only showed a modest association with adult dwelling satisfaction, one reduced to statistical non-significance by parent-child relationships. Prior research points to the enduring influence of parental socioeconomic status on residential sorting, where adolescent family income has a linear

association with the neighborhood prosperity that adults eventually attain (South et al., 2016). The starkest form of this phenomenon is represented by research on childhood poverty and people's residential life chances which shows that those living in disadvantaged areas are effectively “stuck in place” and tend to remain in poor neighborhoods one generation to the next (Sharkey, 2008, 2013). Taken together, these findings led us to hypothesize that childhood economic exposures would sort individuals not just into adult neighborhood attainments but also into a continuum of more or less subjectively satisfying home environments. We speculate, however, that people exposed to poorer neighborhoods in both childhood and adulthood may view their homes as ordinary—and hence not unsatisfactory—relative to others in their local communities, adding an interpretive layer to objective material conditions. Another possibility is that our measure of childhood socioeconomic status failed to recognize how extreme deprivation has a unique and detrimental impact on adult dwelling satisfaction. However, alternative analyses that used survey items asking about welfare receipt and financial situation growing up likewise failed to find a significant association between childhood economic exposures and adulthood satisfaction with home.

Parent-child bonds played a clearer role in understanding the early origins of adult dwelling satisfaction. This was especially the case with parental warmth and emotional abuse. Though we were unable to detect any single, predominant mediating pathway connecting parent-child bonds to adult experiences of home, psychological adjustment, subjective social status, and especially family support each demonstrated partial mediation. Taken together, these factors explained much of the observed total effect of parent-child bonds and each showed a significant link to adult dwelling satisfaction in its own right—the latter two matching or surpassing the effect sizes of childhood exposures.

It is perhaps not surprising that adult circumstances have a strong link to how people feel about their home environment. Besides the factors mentioned above, current perceived neighborhood safety and neighborhood repair, size of household, and home ownership held larger associations with adult dwelling satisfaction than any childhood exposures. One's proximal experiences — in terms of present social standing, family relationships, and residential context during adulthood — in some ways overshadow the more distal experiences of childhood. However, a life-course theoretical framework reminds us that “people are never completely separated from the imprint of their origins” (Pearlin, 2009:2012; Pearlin, 2009). In this way, childhood conditions are not theorized to compete directly with adult factors, but rather profoundly shape adult life trajectories and prefigure the risks and resources that then shape later well-being (Ferraro & Morton, 2018; Ferraro, Shippee, & Schafer, 2009). Childhood parental warmth shows

significant associations with each of the adult mediating variables considered in Fig. 1 (results available upon request), and these adult mediating variables in turn have more proximal and larger effects on adult residential satisfaction. In all, early parental relationships and other childhood circumstances ultimately shape people’s sense of home as adults. Although no pathways emerged as a definitive explanation for why childhood parental warmth was linked to adult dwelling satisfaction, perceived family support during adulthood seemed to play the most important role.

One interpretation of the relative importance of childhood parental bonds to adult dwelling satisfaction is that children raised in safe and secure homes develop cognitive schemas about residential place that have considerable durability over the remaining life course. Children exposed to harsh or detached parenting styles may fail to acquire healthy attachment to their lived surroundings. This explanation accords with life-course attachment theory perspectives (Morgan, 2010), but we lack the data necessary to specify these developmental processes spanning from childhood to middle age.

Several other data limitations should be acknowledged. First, long time gaps stretch between each wave of the MIDUS survey. Detecting mediation requires correct temporal ordering between variables, but using a lagged mediator measured a full decade before the outcome introduces numerous complications with many of the panel covariates used in our models (e.g., neighborhood conditions measured at Wave 1 often do not match the home environment measured at Wave 2 due to moves). We attempted to address this issue by estimating models under two different temporal assumptions—lagged mediators and contemporaneous mediators. Results were consistent, but survey panels measured at closer intervals would clearly be a preferable scenario.

Second, our measure of dwelling satisfaction was considerably left-skewed. Most people, even those from disadvantaged backgrounds,

appear quite satisfied with their homes as adults. What often matters for distinguishing among those from widely varying life-course backgrounds is whether they are somewhat satisfied with their home or very satisfied, a small measured difference that still may carry larger implications for how they adjust to, experience, or enjoy their domestic surroundings as an adult. Still, we suspect that dwelling satisfaction’s skewed distribution owes at least in part to the fact that the MIDUS survey response options delimited a relatively temperate range of possible home evaluations. We addressed this issue in supplementary analyses using alternative modeling strategies sensitive to skew, but the controlled direct effects methods used in mediation analysis were designed for linear regression models. We were therefore unable to integrate knowledge about potentially censored data in the estimation of controlled direct effects.

In conclusion, this study adds to the growing literature on how childhood conditions impinge on consequential adult outcomes. Affective attachments to home—much like a diverse range of health issues (Andersson, 2016; Ferraro et al., 2016; Fothergill et al., 2016)—appear sensitive to childhood exposures, though much more so for parent-child relational conditions than for economic circumstances. The experience of residential context represents an important dimension of adult well-being deserving of sustained future research attention. Home is not only a “constant space where routines are performed”, but also a basic “component of ontological security” (Downing, 2016:91). Results from this study raise the distinct possibility that individuals exposed to a lack of emotional warmth or emotional maltreatment in their childhood homes carry these negative experiences with them into their adulthood residence, in terms of how satisfied they are with wherever they end up living.

Note: Check mark indicates that variable is used as mediator-outcome confounder for analysis in Fig. 1.

Appendix A

**Table A1**  
Unstandardized Tobit regression coefficients, childhood effects on adult dwelling satisfaction, controlling for treatment-outcome confounders.

VARIABLES	(1)	(2)
<i>childhood economic and parental exposures</i>		
parental SES	0.98 (0.58)	0.81 (0.58)
physically maltreated		−0.00 (0.18)
emotionally maltreated		−0.53** (0.19)
parental warmth		0.38** (0.13)
<i>childhood covariates</i>		
Rural	0.06 (0.18)	−0.04 (0.18)
two biological parents	0.48** (0.18)	0.39* (0.18)
fair/poor health age 16	0.62 (0.41)	0.67 (0.40)
<i>time-stable covariates</i>		
Female	−0.01 (0.15)	−0.02 (0.15)
Age	0.02*** (0.01)	0.02** (0.01)
Nonwhite	−0.34 (0.26)	−0.41 (0.25)
Constant	5.93*** (0.51)	5.54*** (0.69)
Observations	1,623	1,623

Robust standard errors in parentheses.  
\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05.



**Table A2**  
Summary of mediator-outcome confounding variables included in Fig. 1 ACDE estimates.

life course mediators and covariates	Mediator considered in ACDE estimate				
	psychological distress (W1)	psychological distress (W2)	family support (W1)	family support (W2)	subjective social status (W2)
distress, W1			☑		
distress, W2				☑	☑
family support, W1	☑				
family support, W2		☑			☑
education, W1	☑	☑	☑	☑	☑
total household income (logged), W1	☑	☑	☑	☑	☑
own home, W1	☑		☑		
own home, W2		☑		☑	☑
subjective social status, W2		☑		☑	
total times married, W1	☑		☑		
total times married, W2		☑		☑	☑
currently married, W1	☑		☑		
currently married, W2		☑		☑	☑
years lived in current neighborhood (logged), W1	☑		☑		
years lived in current neighborhood (logged), W2		☑		☑	☑
neighborhood safety, W1	☑		☑		
neighborhood safety, W2		☑		☑	☑
neighborhood repair, W1	☑		☑		
neighborhood repair, W2		☑		☑	☑
Census tract % below poverty, W2		☑		☑	☑
Census tract population density (logged), W2		☑		☑	☑
household size, W1	☑		☑		
household size, W2		☑		☑	☑
number of children, W1	☑		☑		
number of children, W2		☑		☑	☑

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