

**LONG-TERM CARE OF THE DISABLED ELDERLY:
DO CHILDREN INCREASE CAREGIVING BY SPOUSES?**

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ABSTRACT

Do adult children affect the care elderly parents provide each other? We develop two models in which the anticipated behavior of adult children provides incentives for elderly parents to increase care for their disabled spouses. The "demonstration effect" assumes children learn from a parent's example that family caregiving is appropriate behavior. For the "punishment effect," if the nondisabled spouse fails to provide spousal care, then children may respond by not providing future care for the nondisabled spouse when necessary. Joint children act as a commitment mechanism, increasing the probability that elderly spouses will provide care; stepchildren may provide weaker incentives for spousal care. Using data from the HRS, we find some evidence that spouses provide more care when they have children with strong parental attachment.

Introduction

Although spouses remain the largest group of primary caregivers to the disabled elderly in the U.S. (Spillman and Pezzin 2000), the long-term care literature has focused on the care adult children provide for their disabled elderly parents. (For references to this literature, see Pezzin and Schone [1999], Engers and Stern [2002], and Pezzin, Pollak, and Schone [2005a, 2005b].) More specifically, the literature has focused on the care adult children provide for their unpartnered, disabled, elderly parents. Because women usually marry older men and because women usually live longer than men, most of these unpartnered, disabled, elderly parents are women. Thus, we can capsule the problem of long-term care for an unpartnered, disabled elderly parent as: "Who's going to take care of Mom?"

In contrast, the question motivating this paper is: "Who's going to take care of Dad?" That is, we consider the care that elderly spouses provide for each other and how joint children and stepchildren affect the willingness of elderly spouses to provide care for one another. We develop two models in which the anticipated behavior of adult children provides an incentive for elderly parents to provide more care for their disabled spouses than they otherwise would. Our first model is based on a "demonstration effect" -- adult children learn from a parent's example that family caregiving is appropriate behavior. Our second model is based on a "punishment effect" -- if the nondisabled spouse fails to provide care for the disabled spouse, then the children may respond by not providing future care for the nondisabled spouse when care becomes necessary. Both models assume that the nondisabled elderly parent recognizes that his or her caregiving behavior will affect the children's willingness to provide care in the future. In essence, children act as a commitment mechanism, increasing the probability that elderly spouses will provide care.

Conceptual Framework

We begin by elaborating on the demonstration effect. The demonstration effect postulates that "parents teach children the desired behavior by setting an example" (Stark 1995). The traditional specification of the demonstration effect involves three generations. For example, adult children care for their elderly parents in order to teach their own offspring that children should care for their parents [Cox and Stark 2005]. We propose a two-generation version of the demonstration effect: nondisabled elderly spouses provide care for their disabled spouses to teach their own children that family members should take care of each other. That is, the nondisabled parent "models" appropriate behavior by caring for the disabled parent; the adult child, observing the parent's caregiving behavior, infers the appropriateness of family caregiving. The nondisabled parent, recognizing that the child will learn from her example, provides more care than she otherwise would in order to teach the adult child the importance of family caregiving.

Not only does the demonstration effect provide a mechanism for the intergenerational transmission of caregiving norms but, because wives far outnumber husbands as primary caregivers to their spouses, for the transmission of gendered caregiving norms. That is, the demonstration effect may be one of the reasons why daughters are more likely than sons to provide long-term care to their disabled parents. Because wives are more likely than husbands to be the caregiving spouse — women have a longer life expectancy than men and are typically younger than their husbands — the lesson drawn by the adult children may be not only that caregiving is a family responsibility but that caregiving is a female responsibility.

Punishment always raises issues of credibility. The punishment effect assumes not only that the adult child already knows that family members are supposed to care for one another, but also that the adult child is willing to punish the nondisabled spouse for violating this norm. Both in real

and in experimental situations, individuals often expend their own resources to punish those who have violated behavioral norms in situations in which the punisher derives no apparent self-interested advantage from punishing. For example, responders in ultimatum games frequently reject "ungenerous" or "insultingly low" offers. (Roth [1995] provides a discussion and references to the experimental literature.) Such behavior is often termed "altruistic punishment" to indicate that the punisher incurs material costs that outweigh the material benefits from punishing. From a revealed preference standpoint, it is a tautology that the total benefits (i.e., material plus psychic) for a punisher of punishing outweigh the costs, or else the punisher would not punish. Some have speculated that the willingness of some individuals to punish those who violate norms, even when such punishment is costly to the punisher, may have been a crucial factor in the evolution of human cooperation. (Carpenter [2002] provides a discussion of the altruistic punishment of free riders. In a recent article in *Science*, de Quervain et al. [2004] identify a neural basis for altruistic punishment.)

The possibility of altruistic punishment makes credible the threat that a child will retaliate if a nondisabled spouse fails to care for a disabled spouse. More specifically, we assume that the nondisabled spouse knows that, if she fails to provide care for the disabled spouse, then the children, with some probability, will retaliate by refusing to provide care for her when she becomes disabled. Thus, a nondisabled spouse's perception of the effect of her failing to provide care on the probability that the child will provide future care for her will likely affect the nondisabled spouse's caregiving behavior.

Comparing couples with a joint child and couples with no children, both the demonstration and the punishment effects predict that couples without children will be less likely to provide care for each other than couples with joint children. This prediction, it should be emphasized, is not a

consequence of selection (i.e., the decision to have children or not), although selection may be important empirically.

We next consider a married couple with one stepchild and no joint children. For both the demonstration effect and the punishment effect, the analysis depends on the strength of the attachment between the stepchild and the disabled parent and between the stepchild and the nondisabled parent. We begin with the case in which the child is the husband's stepchild and the wife's biological child. Because a child who is not reared by both biological parents is likely to be reared by the mother, our assumption that the child is the husband's stepchild and the wife's biological child is the leading case.

We cannot observe the strength of a child's attachment to her step parent, but we assume that it depends on the fraction of her childhood that she lived with the step parent.¹ This implies that the strength of a child's attachment to a step parent depends on the child's age when the couple married. Three subcases illustrate the range of possibilities: (i) The couple married when the child was an infant and the child lived her entire childhood with the stepfather. (ii) The couple married when the child was nine and the child spent about half her childhood with her stepfather. (iii) The couple married when the child was 39, so the child spent none of her childhood with her stepfather.

The demonstration effect is the same in all three subcases. The demonstration effect depends on the child's susceptibility to influence by her mother's example when the stepfather requires care. Although the three subcases differ in the age at which the child became a stepchild, they do not differ in the age at which the stepchild observes her mother providing care, or not providing care, for her disabled stepfather. Usually, although not necessarily, the mother is elderly

¹ The strength of attachment need not be positively related to the duration of coresidence, but we assume that it is.

and the child is middle-aged. Susceptibility presumably depends on the strength of attachment, and the attachment between the child and her mother is the same in all three subcases.

The punishment effect, unlike the demonstration effect, differs in the three subcases. (i) If the couple married when the child was an infant and the child spent her entire childhood with her stepfather, she may be willing to punish her mother for failing to provide care for her disabled stepfather — indeed, she may be as likely to punish as a joint child. (ii) If the couple married when the child was nine and the child spent about half her childhood with her stepfather, then she is less likely than a joint child to punish her mother for failing to provide care. (iii) If the couple married when the child was an adult, so the child spent none of her childhood with her stepfather, then she is unlikely to punish her mother for failing to care for her disabled stepfather.² Maintaining our convention that the husband is the disabled spouse, we now turn to the case in which the child is the wife's stepchild. As before, we consider three subcases that differ in the strength of the child's attachment to the step parent.

The demonstration effect now depends on the child's susceptibility to influence by the example set by her stepmother when her father requires care, and this susceptibility differs with the strength of the child's attachment to her stepmother. (i) If the couple married when the child was an infant and the child spent her entire childhood with the stepmother, then she may be strongly influenced by her stepmother's behavior -- indeed, she may be as susceptible to influence as a joint child. (ii) If the couple married when the child was nine and the child spent about half her childhood with her stepmother, then the child is presumably less susceptible to influence and the demonstration effect will be correspondingly weaker. (iii) If the couple married when the child was 39, so the child

² A caveat: although the likelihood of punishment depends on the child's attachment to her stepfather, the absence of attachment does not imply an unwillingness to punish because we cannot rule out disinterested altruistic punishment to enforce community norms.

spent none of her childhood with her stepmother, then the child might be immune to influence by the behavior of her stepmother.

The punishment effect, like the demonstration effect, depends on the behavior of the nondisabled spouse affecting the probability that the child will provide care for her when she becomes disabled. The punishment effect depends on the stepmother comparing two probabilities: the probability that the stepdaughter will care if the stepmother provides care for her disabled husband, and the probability that the stepdaughter will provide care if the stepmother does not provide care. Thus, the punishment effect is potent only if these two probabilities differ (i.e., only if the probability that the stepdaughter will care for her stepmother depends on whether her stepmother provides cares.)

The punishment effect differs in the three cases. (i) If the couple married when the child was an infant and the child spent her entire childhood with the stepmother, then her willingness to care for the stepmother might depend on whether her stepmother took care of her father. In this subcase, the threat of altruistic punishment has some credibility. (ii) If the couple married when the child was nine and the child spent about half her childhood with her stepmother, then the stepdaughter is presumably less inclined to care for her stepmother than in the previous subcase. (iii) If the couple married when the child was 39, so the child spent none of her childhood with her stepmother, then the stepdaughter would be unlikely to care for her stepmother, regardless of whether her stepmother provides care for her disabled husband. Hence, in this subcase the punishment effect is impotent.

We now relax our assumption that children have strong attachments to their biological parents. Maintaining our convention that the husband is the disabled spouse, we consider first the case in which the husband has children from a prior marriage -- children who never lived with him

after that marriage ended — and then the case in which the wife has such children.³ The attachment of these children to their biological parent depends on the age of the child when the prior marriage ended and on the subsequent contact between the child and the parent. To consider systematically the likelihood that such children affect the spouses' incentives to provide care for each other, we consider three subcases: (iv) The prior marriage ended when the child was an infant. (v) The prior marriage ended when the child was nine (vi) The prior marriage ended when the child was 39.

Both the demonstration effect and the punishment effect are weak or nonexistent when the child is the husband's from a prior marriage and never lived with the focal couple. The demonstration effect depends on the child's susceptibility to influence by her stepmother's example, and on the stepmother recognizing this susceptibility. The stepmother behaves strategically: to induce the stepchild to provide care for her, she provides more care for her husband than she otherwise would. But unless there is an affective relationship between the child and her stepmother, the stepchild is unlikely to be responsive to the example set by her stepmother.

The punishment effect is also weak or nonexistent in this case. The punishment effect requires that the likelihood that the child will provide care for the stepmother depend on whether the stepmother provides care for her disabled husband. But the child is unlikely to provide care for the stepmother regardless of whether the stepmother provides care for her disabled husband, so the stepmother has no incentive to provide more care for her husband than she otherwise would.

Maintaining our previous convention that the husband is the disabled spouse, we now consider the case in which the child is the wife's from a prior marriage. In this case, the demonstration effect depends on the child's susceptibility to the example set by her mother when her stepfather requires care. The child's susceptibility presumably depends on the strength of the her

³ Although it is irrelevant for our purposes whether the husband ever cohabited with or married the mother of his child, we continue to describe the child as the offspring of a prior marriage.

attachment to her mother, and this differs from one subcase to another. If the prior marriage ended when the child was an infant, or even when the child was nine, and if the child had no subsequent contact with her mother, then the child is unlikely to be influenced by her mother's example. If the prior marriage ended when the child was 39, then the subsequent relationship between the child and the mother might depend on how and why the marriage ended. If the marriage ended because of divorce and the child blamed the mother for the divorce, then the subsequent relationship between the child and her mother might be cold. If the child did not blame the mother for the divorce, then the subsequent relationship between the child and the mother might be warm. If the marriage ended because of the death of the child's father, then the subsequent relationship between the child and her mother might be warm, especially if the adult child approves of her mother's remarriage.

The punishment effect depends on the mother's perception that the child will condition her willingness to provide care on whether the mother provides care for her disabled husband. It seems unlikely that her mother's failure to provide care for her disabled husband (i.e., a stepfather with whom the child never lived) would affect the child's willingness to provide care for her mother.

Table 1 delineates the most general cases and the likely impacts of the demonstration and punishment effects. Our theories suggest that the demonstration and punishment effects will be strongest when there are joint children and nonexistent when there are not children present. In the cases where there are only step children, we expect the demonstration and punishment effects to be strong (approaching the effects for joint children) when there is high attachment to the step parent, regardless of whether the step parent is the disabled or nondisabled parent. When there is low attachment with the disabled step parent we expect the demonstration effect to remain strong but there to be no punishment effect. When there is low attachment to the nondisabled parent, the demonstration and punishment effects should be nonexistent or weak since it is unlikely that the

child intends to provide care to the step parent in the future. On net, the theory suggests that children affect spousal care, and that the strength of this effect will depend on the degree of attachment of the child with the parents. In the remainder of the paper we describe the empirical approach we use to test these hypotheses.

Data and Methods

Data from the fourth and fifth waves of the Assets and Health Dynamics of the Elderly (AHEAD) and the Children of Depression (CODA) cohorts of the Health and Retirement Survey (HRS) are used to examine empirically the extent to which children act as a commitment mechanism. Specifically, we assess the likelihood that the presence (and type) of children increase care from one spouse to another.⁴ The HRS follows a nationally-representative sample of elderly individuals (the cohort born before 1924 in AHEAD and between 1924 - 1930 in CODA). Along with basic demographic data, information is collected on each elderly respondent's health status, family characteristics, and economic resources, as well as hours of paid and unpaid care.

For the purpose of our analysis, we limit our sample to community-dwelling married couples in which one of the respondents is disabled. A respondent is defined as disabled if he or she reports difficulty with at least one basic activity of daily living (ADL) — transferring, dressing, bathing, toileting, eating, or walking across a room — or at least one instrumental activity of daily living (IADL) — grocery shopping, preparing meals, taking medications, using a telephone, or managing household finances. Our sample includes 761 couples.

⁴ We treat cohabiting couples as married.

We estimate spousal care received by three groups of married disabled elderly: those with joint children; those with stepchildren but no joint children; and those without children. In particular, we focus on the intensity of spousal care and on the proportion of total care (i.e., care received from all sources, including paid formal care) provided by spouses. In both cases, our measure of care is the number of hours per month provided by spouses (and spouses plus all other sources) to the disabled respondent for ADL or IADL assistance.

Our indicators of attachment between a step child and her disabled and nondisabled parents are based on the number of childhood years spent with the parent. Our assumption is that physical proximity to a step parent promotes emotional closeness, which may influence the nondisabled spouse's incentive to provide care to the spouse in anticipation of having her care needs fulfilled by her child. A parent j in couple i is defined to have low attachment to his children if none of his children have lived more than 50% of their childhood years with that parent, $Low_{ij} = 1$. A parent is defined to have high attachment to his children if at least one of his children spent more than 50% of her childhood years coresiding with the "index" parent, $High_{ij} = 1$. The two indicators are constructed with respect to both the disabled and nondisabled parent and used to identify differences in spousal care among step parents with differing levels of attachment to their children relative to couples with no children or joint children.

Consistent with the framework presented above, the *intensity* of informal care (S) and the *proportion* of total care provided by the spouse (S/T) to each disabled elderly respondent j in family i are empirically modeled as:

$$S_{\bar{j}} = X_i\beta + Y_{\bar{j}}\gamma + Z_k\delta + \varepsilon_{\bar{j}}$$

$$(S_{\bar{j}}/T_{\bar{j}}) = X_i\beta' + Y_{ji}\gamma' + Z_k\delta' + \varepsilon'_{ji}$$

where X_i represents the family characteristics of the i^{th} couple, Y_{ji} a vector of care recipient-specific characteristics for the j^{th} person in couple i , and Z_i the family structure of the i^{th} couple (i.e., whether the couple has joint children; stepchildren but no joint children; or no children).

Since our main interest is explaining differences in the *intensity* of spousal caregiving efforts by family structure and by parent-stepchild attachment, our strategy is to estimate Tobit models applied to monthly hours of care. In order to examine the effect of family structure on the *proportion* of total care provided that the nondisabled spouse, we also estimate regression models with the dependent variable ranging from 0 to 100. Each equation is estimated independently and produces estimates of the parameter vectors, β , β' , γ , γ' , δ , δ' , and the standard deviation of the error terms (for the Tobit models).

In addition to the main variables of interest for our analysis—whether the couple has no children; has joint children; or stepchildren but no joint children (by level of attachment) — we include a variety of independent variables in our specifications to control for person- and family-specific attributes that may affect the transfer behavior we consider. A glossary of all variables and summary statistics for our sample is provided in Table 2.

Results

Table 3 provides descriptive information on the dependent variables by the couple's family structure. The bivariate associations suggest that children do act as a commitment mechanism for provision of spousal care. Regardless of the nature of the relationship between children and parents

(either joint or step), the intensity of spousal care provision was significantly higher among couples with joint or step children relative to those with no children (22.5 and 26.0 versus 15.4, respectively, $p < .10$). Striking differences are also observed in children's provision of parental care by relationship: care received by a married disabled parent with joint children were approximately three times as large as that of care received by disabled parents with only step and no joint children (1.8 versus .6, $p < 0.10$). The results show no significant differences in the proportion of total care provided by the nondisabled spouse across the three groups. The finding of higher levels of child-provided care for disabled persons with biological children relative to those with step children only is consistent with findings by Pezzin and Schone (1999) for nonpartnered elderly persons.

Of course, the patterns in Table 3 are far from conclusive on the issue of how the presence of children affect a parent's decision to provide care to a disabled spouse or whether the relationship is influenced by differing degrees of attachment because these bivariate associations may simply reflect heterogeneity among sampled families. These results do suggest, however, that the presence of children, whether joint or not, influences spousal behavior. We explore these issues in further detail in our multivariate results described below.

Table 4 presents the predicted hours and predicted probabilities derived from multivariate models of overall spousal caregiving efforts and the proportion of total care provided by spouses. We present results from four models: Model A, the simplest test for the hypothesis that children act as a commitment mechanism for spouses, contrasts spousal care provided to disabled persons with and without children. Our theory predicts that care provision by spouses should be higher if there are children. Model B goes a step further in distinguishing couples by family structure by introducing the concept of joint versus step (no joint) children. Thus, Model B allows us to assess the role of parental attachment and how it affects spouses' caregiving decisions. Finally, Models C and D further disaggregate the effect of step children by degree of attachment to the disabled (DP) and the nondisabled parent (NDP). In particular, Model C characterizes families with step children only by the level of attachment of those step children; this allows us to investigate how spousal care

provision varies from the most attached children (i.e., families with joint children) to families with only step children where there is weak attachment and to couples who have no children. Model D, which is the most elaborate model, further analyzes the role of attachment by distinguishing between attachment to the nondisabled spouse and attachment to the disabled spouse. As argued above and as shown in Table 1, the role of the demonstration and punishment effects will differ depending on whether the step parent is the disabled or nondisabled spouse.

The results of Model A suggest sizable differences in the intensity of spousal caregiving by the presence or absence of children. On average, care by nondisabled spouses was 9.6 hours (or 72%) higher among couples with children relative to childless couples, even after controlling for disability and other factors affecting the disabled spouse's need for assistance. The propensity to provide care and the proportion of total care provided by spouses did not differ, however, across the two groups.

As predicted by the theory, joint children provide a stronger commitment mechanism to spouses than step children. The second panel of Table 4 (Model B), shows that spouses who do not share joint children with their disabled elderly partners provide fewer hours of care to their disabled spouses than their counterparts with joint children (22.2 versus 27.1, $p=??$). Although not precisely estimated, the point estimates tell a very compelling story about the intensity of spousal care provision: On average, spouses with joint children spent twice as much time providing informal care to their disabled spouses than those with no children (27.1 versus 13.6 hours, $p<.05$) and 63% more time than those with no joint children, respectively.

The predictions presented in the third and fourth panels of Table 4 show differences in caregiving efforts by the nondisabled spouse by family structure and parent-(non joint)child attachment and provide insights into potential operating motives for spousal care. For the punishment effect to be credible among couples with no joint children, nonjoint children must share a high degree of attachment to *both* their disabled (e.g. step father) and nondisabled (e.g., biological

mother) parent.⁵ Caregiving efforts by the nondisabled spouse, in that case, are expected to be similar to that of spouses with joint children. Results from Model C and D are consistent with this prediction: in fact, in both models, hours of spousal care are higher among families with step children that have high attachment than among families with joint children (28.5 versus 22.3, $p=$ in Model C and 28.1 versus 22.4, $p=$ in Model D). Also as expected, intensity of spousal caregiving efforts is considerably higher among the two groups when compared to hours of care provided by spouses of disabled elderly persons with no children.

As noted above, in the case of step families where children share a low attachment to their parents, the punishment effect is not operative. When the disabled parent (e.g., the father) is the step parent, then children have no incentive to punish the (biological) mother if she does not provide care. If the nondisabled parent (e.g., the mother) is the step parent, the child has no intention to provide care anyway when there is low attachment. Therefore, there is no role for the punishment effect if children are not emotionally bound to their parents. On the other hand, the demonstration effect predicts different outcomes depending on whether the child has low attachment to her disabled parent versus her nondisabled parent. In fact, the demonstration effect is not operational when children have low attachment to their nondisabled parent as the nondisabled parent has no expectations of influencing the child's future behavior. Spouses in this case would be expected to behave similarly to spouses with no children, and provide significantly fewer hours of care to their spouses than their counterparts with joint children (or with nonjoint children with high attachment to the disabled parent). When children have low attachment to their disabled parent, the nondisabled parent may still benefit by providing care to her spouse. The demonstration effect in this case suggests that the spouse will provide more care in anticipation of influencing the level of care that her child would subsequently provide.

⁵ As discussed earlier, the threat of punishment is immaterial in cases where the nondisabled parent has no expectations of receiving care from her step child in the future due to low attachment.

Our findings in Model D suggest a hierarchy in spousal caregiving patterns by family structure that generally supports this expectation. Among couples with children, nondisabled spouses whose children have low attachment to them provide the fewest hours of care. Caregiving efforts by this group are less than half that of nondisabled spouses with joint children (8.9 hours versus 22.4 hours, $p=.08$). Somewhat surprisingly, spouses with joint children provide fewer hours of care per month to their disabled spouses than those whose children have low attachment to the disabled parent, although the difference was much smaller in magnitude and not statistically significant (-5.4, or -25%, monthly hours). Nondisabled spouses whose children have high attachment either to the nondisabled or the disabled parent provided the most care (28.1 monthly hours). One possible reason that we observe greater hours provided by the spouse when there are step children with low attachment to the disabled parent relative to spouses in which there are joint children may be a stronger demonstration effect. Step families in which there is low attachment may have had less opportunity to model the caring role that family members play for one another. The nondisabled spouse (who is the biological parent) may try to counter this by providing even more care to her spouse to show her child that caring for a family member is expected behavior.

Examining the differential levels of hours of care between step children with low attachment to the disabled parent relative to the nondisabled parent (27.8 versus 8.9 hours, respectively), it is evident that the gap cannot be driven by the punishment effect. Instead, it appears that the differences are driven by the demonstration effect: a nondisabled parent with low attachment has no incentive to increase care to the spouse to demonstrate care to the child since the child is unlikely to provide care anyway; when it is the disabled parent with low attachment the nondisabled spouse still potentially benefits by demonstrating caregiving. Surprisingly, caregiving efforts of nondisabled spouses with low attachment to their children was even lower than that of spouses with no children. One possible explanation for the difference in spousal behavior across these two groups may be unobserved differences in the demand for assistance by disabled elderly persons in each group (i.e., those with no children and those with children who are not attached to them). Our casemix

adjustment, which includes controls for a wide array of disability and functional measures, makes it unlikely that underlying health status could explain such differences.⁶ Another possibility, of course, is self-selection and heterogeneity in spouses' willingness to act as caregivers in shorter duration, later life marriages. We cannot rule out this possibility although our specifications control for years of marriage.

Finally, the predictions of the likelihood of the spouse providing care and the predicted proportion of the total care provided by the spouse are not consistent with our theoretical expectations. These findings may suggest that parents alter their caregiving behavior on the margin and not the decision to provide care altogether. As described above, the differences observed here may reflect other differences in the characteristics (i.e., attitudes towards caregiving in general) of late marriages relative to a long-term, traditional nuclear family.

Final Remarks

The purpose of this paper is to develop a model of caregiving decision making for married couples. Much of the current theoretical research has focused on modeling the nature of family decision making when there is a single elderly parent who requires care and where there is at least one adult child who is a potential caregiver. We explicitly account for the case where there are two elderly adults — one who is disabled and requires care and the other who provides care potentially. The model we develop highlights the important role of children for influencing the level of care provided by the nondisabled parent. In essence, children serve as a commitment mechanism that encourages the nondisabled spouse to provide more care than she otherwise would. Our empirical

⁶ We also examined whether differences in the underlying probability of nursing home entry across the groups might account for differences in the long-term care needs of community-dwelling married disabled elderly persons, the population on whom the analysis is based. We found no marked differences across groups in the likelihood that wave 1 disabled elderly persons with joint and nonjoint children had entered a nursing home by wave 3. Childless married persons, on the other hand, were twice as likely as those with children to be institutionalized, although small cell sizes precluded any of the comparisons from being statistically significant at conventional levels.

work is formulated to test the main implications of the theory in several different contexts. In general, we find that the presence of children does increase the intensity of care provision. Moreover, we find some evidence that the degree of attachment between a child and the parents also affects spousal caregiving.

Two important limitations are worth mentioning. As described here, the theoretical models do not formally account for the effect of multiple children with potentially varying degrees of attachment to their parents. To extend our analysis from one child to two or more children requires specifying aspects of the model that we were able to leave unspecified with only one child. A threshold modeling issue is whether care can be provided by at most one child (i.e., the primary caregiver) or, alternatively, whether more than one child can participate in or contribute to care. If care is provided by at most one child, then we can model the children's behavior as a game in which each child decides whether to offer to provide care and the wife, now a widow, decides which offer to accept (if she has any offers). If care is provided by at most one child, and if side payments between the children are not allowed, then the widow must be concerned that her actions will affect which of the children, if any, will offer to provide care.

Another potential concern is family heterogeneity. If couples with children are more “caring” than couples without children, then we might expect to observe the patterns we find (i.e., more spousal care when there are children than when there are not children). Thus, if such heterogeneity exists, then these differences could be driven by it rather than the demonstration and punishment effects. If family heterogeneity is driving our findings, then it must also be the case that families with step children only are less caring than families that include joint children. More remains to be learned about the caring disposition of couples without children, with joint children and those with step children only.

Overall, our work has important implications for forecasting the supply of family-provided long-term care. Understanding the factors that affect family caregiving is important from the perspective of determining the likely demands on public programs and the cost of administering

different levels of benefits. The theory developed here and the corresponding empirical results suggest that it is important to understand family composition and the effects of family structure on caregiving decisions.

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Table 1: Expected Impact of the Punishment and Demonstration Effects by Presence of Children and Attachment of Children

	No Children	Families with Only Step Children			Joint Children
		Low Attachment to Disabled Step Parent	Low Attachment to Nondisabled Step Parent	High Attachment to Step Parent	
Demonstration Effect	None	Strong	Weak	Stronger	Strongest
Punishment Effect	None	None	None	Stronger	Strongest

Table 2: Variable Definitions and Summary Statistics

Independent Variables	Definition	Mean	Standard Error
Family Structure			
No children	Neither respondent in couple has children	0.06	-
Joint children	Couple has joint children	0.79	-
Step children, no joint children	Couple has children but no joint children	0.15	-
Demographic characteristics of Disabled Respondent			
Gender	=1 if disabled respondent is male; 0 otherwise	0.54	-
Age	Age of disabled respondent	77.9	6.1
White	=1 if Disabled Person is White; 0 otherwise	0.86	-
High School Graduate	=1 if disabled respondent has 12 years of education; 0 otherwise	0.29	-
Some College	=1 if disabled respondent has more than 12 years of education; 0 otherwise	0.36	-
Number of Children	Couple's number of children	3.2	2.2
Number of years married	Length of couple's current marriage	49.5	13.2
Ever divorced	Disabled person experienced at least one divorce=1; 0 otherwise	0.21	-
Health and Functional Status			
1-2 ADL difficulties	= 1 if Disabled Person has 1-2 ADL difficulties; 0 otherwise	0.51	-
3+ ADL difficulties	=1 if Parent has 3 or more ADL difficulties; 0 otherwise	0.20	-
Incontinence	=1 if Disabled Person is incontinent; 0 otherwise	0.31	-
Disabled Person's General Cognition Score	Parent's general cognition score (0-5); greater scores indicate increased impairment	3.4	1.1
Economic Status			
Couple's Net Worth	Couple's net worth ÷ 10,000	40.1	98.5
Disabled Person's Income	Social Security and pension income ÷ 10,000	1.3	1.5

Notes: Unit of observation is a married person who has at least 1 ADL difficulty (difficulty in transferring, dressing, bathing, toileting, eating, or walking across a room) or 1 IADL difficulty (difficulty with grocery shopping, preparing meals, taking medications, using a telephone, or managing household finances) and who has a non disabled spouse. Sample size is 771.

Table 3: Care Receipt by Married Disabled Elderly Persons by Source of Care and Family Structure

Hours of Care by	No Children	Joint Children	No Joint Children
	(N = 50)	(N = 607)	(N = 149)
Non Disabled Spouse	15.4 (29.0)^{¶§}	22.5 (41.5)	26.0 (47.6)
Children	0 ^{¶§}	1.81 (10.25)[§]	0.61 (2.74)
All Sources	17.2 (29.8) ^{¶§}	27.3 (47.9)	29.1 (50.8)
Spouse as a Proportion of All Sources ^a	.92 (.22)	.88 (.28)	.90 (.24)

a Among persons receiving positive total hours.

¶ Statistically different from joint children at least at p<.10.

§ Statistically different from no joint children at least at p<.10.

Table 4: Predicted Effects of Family Structure on Caregiving Efforts of Non-disabled Spouse

Model A	<i>No Children</i>	<i>Any Children</i>			
Hours of Spousal Care	13.4	23.0**			
Proportion of total care by spouse	93.0%	89.4%			
Model B	<i>No Children</i>	<i>Joint Children</i>	<i>Step Children</i>		
Hours of Spousal Care	13.6*	27.1	22.2		
Proportion of total care by spouse	93.0%	90.1%	89.3%		
Model C	<i>No Children</i>	<i>Joint Children</i>	<i>Step low attachment</i>	<i>Step high attachment</i>	
Hours of Spousal Care	13.3*	22.3	17.4	28.5	
Proportion of total care by spouse	92.9%	89.3%	87.2%	90.7%	
Model D	<i>No Children</i>	<i>Joint Children</i>	<i>Step low attachment to DP</i>	<i>Step low attachment NDP</i>	
Hours of Spousal Care	13.2*	22.4	27.8	8.9*	28.1
Proportion of total care by spouse	92.9%	89.3%	87.1%	87.2%	90.7%

Notes: Italic bold headings indicate the reference category. A ** denotes differences from reference category that are statistically significant at $p \leq 0.10$; * at $0.10 > p \leq 0.15$ level.