

**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" postulates that adult children learn from a parent's example that family caregiving is appropriate behavior. The "punishment effect" postulates that adult children may punish parents who fail to provide spousal care by not providing future care for the nondisabled spouse when necessary. Thus, joint children act as a commitment mechanism, increasing the probability that elderly spouses will provide care for each other; stepchildren with weak attachments to their parents provide weaker incentives for spousal care than joint children. Using data from the HRS, we find evidence that spouses provide more care when they have children with strong parental attachment.

## 1. 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.<sup>1</sup> 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 the elderly to provide more care for their disabled spouses than they otherwise would. Our first model postulates a "demonstration effect" -- adult children learn from a parent's example that family caregiving is appropriate behavior. Our second model postulates 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 for one another.

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<sup>1</sup> For references to this literature, see McGarry and Schoeni (1997); Pezzin and Schone (1997, 1999 a, b); Heidemann and Stern (1999); Engers and Stern (2002); Checkovich and Stern (2002); and Pezzin, Pollak, and Schone (2007, 2008).

In section 2 we describe our model. The potency of the demonstration effect and the punishment effect depend on the strength of the child's attachment to the disabled parent (the husband) and the nondisabled parent (the wife). We assume that biological children are strongly attached to their parents, while stepchildren may have stronger attachment to a biological parent than to a stepparent, and that the attachment of a stepchild to a stepparent may depend on the age at which the stepparent came into the child's life. In Section 3 we discuss the data -- we use waves 4 and 5 of AHEAD -- and describe our estimation procedure. In section 4 we describe our results. Section 5 is a brief conclusion.

## **2. Conceptual Framework**

We begin by describing the demonstration effect and the punishment effect in general terms, emphasizing that both effects depend in different ways on the strength of the child's attachment to the disabled parent (the husband) and to the nondisabled parent (the wife). We then consider various cases in which we expect to find systematic differences in a stepchild's attachment to the disabled and the nondisabled parent. We begin with the case in which the child is the wife's biological child and the husband's stepchild because this is the most common case.

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 one another. 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 (that is, care above and beyond that which an altruistic spouse would provide in the absence of children) 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 and typically marry older men — the lesson drawn by the adult children may be not only that caregiving is a family responsibility but that caregiving is a female responsibility.

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. Hence, the punishment effect raises issues of credibility. 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, because otherwise 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 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, for a given level of altruism, couples without children will be less likely to provide care for each other than couples with joint children.<sup>2</sup> Next consider a married couple with one stepchild and no joint children.<sup>3</sup> 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. Table 1 below delineates

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<sup>2</sup> It is important to note that this prediction is not a consequence of selection (i.e., the decision to have children or not), although selection may be important empirically. We discuss the empirical problems that arise from preference heterogeneity (e.g., if individuals with more altruistic preferences are more likely to have children) later in the text.

<sup>3</sup>We treat cohabiting couples as if they were legally married.

the potency of the demonstration effect and the punishment effect under various assumptions about the strength of attachment between the child and the parents.

**Table 1. The Potency of the Demonstration and Punishment Effects**

	No Children	Families with Stepchildren Only			Joint Children
		Low Attachment to Nondisabled parent	Low Attachment to Disabled Stepparent	High Attachment to Stepparent	
<b>Demonstration Effect</b>	None	Weak	Strong	Stronger	Strongest
<b>Punishment Effect</b>	None	None	None	Stronger	Strongest

To explore the implications of the demonstration and punishment effects more fully, we consider three specific cases. (1) 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 much more likely to be reared by the mother than by the father, this is the leading case. (2) We next turn to the case in which the child is the wife's stepchild, maintaining our convention that the husband is the disabled spouse. (3) Finally, we consider cases in which the child has weak attachment to the biological parent. This arises if (3a) the child is the husband's by a previous marriage or if (3b) the child is the wife's by a previous marriage. We cannot observe the strength of a child's attachment to her stepparent, but we assume that it is positively related to the fraction of her childhood that she lived with the parent or stepparent.<sup>4</sup> This implies that the strength of a child's attachment to a parent or stepparent depends on the child's age when the parent divorced or remarried.

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<sup>4</sup> The strength of attachment need not be positively related to the duration of coresidence, but we assume that it is.

## **2.1. The child is the husband's stepchild and the wife's biological child.**

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 adult 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 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.<sup>5</sup>

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<sup>5</sup> A caveat: although the likelihood of punishment depends on the child's attachment to her stepfather, the absence of attachment does not imply the absence of punishment. We recognize the possibility of disinterested altruistic punishment to enforce community norms.

## **2.2. The child is the wife's stepchild and the husband's biological child**

We now turn to the case in which the child is the wife's stepchild, maintaining our convention that the husband is the disabled spouse. 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 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 provide 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 provide 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.

### **2.3. The child has weak attachment to the biological parent**

We now relax our assumption that children have strong attachments to their biological parents. We consider first the case in which the husband—the disabled spouse--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.<sup>6</sup> 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.

#### **2.3.a. The child is the husband's by a previous marriage**

Both the demonstration effect and the punishment effect are weak or nonexistent when the

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<sup>6</sup> We describe the child as the offspring of a prior marriage regardless of whether the husband was legally married to the child's mother.

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.

### **2.3.b. The child is the wife's by a previous marriage**

Maintaining our 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 her 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.

#### **2.4. Summary**

Our analysis suggests that the demonstration and punishment effects will be strongest when there are joint children and nonexistent when there are no children. In the cases where there are stepchildren only, we expect the demonstration and punishment effects to be strong (approaching the effects for joint children) when there is high attachment to the stepparent, regardless of whether the stepparent is the disabled or nondisabled parent. When there is low attachment to the disabled stepparent we expect the demonstration effect to remain strong but the punishment effect to be nonexistent. When there is low attachment to the nondisabled parent, the demonstration and punishment effects should be weak or nonexistent since it is unlikely that the child intends to provide care to the stepparent 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 to the parents. In the remainder of the paper we describe the empirical approach we use to test these hypotheses.

### 3. Data and Methods

Data from the 2000 and 2002 waves of the Assets and Health Dynamics of the Elderly (AHEAD) and the Children of Depression (CODA) are used to examine empirically the extent to which children act as a commitment mechanism. The AHEAD survey, now part of the Health and Retirement Surveys (HRS), is an ongoing stratified panel survey that began with a nationally-representative sample of community-based persons aged 70 and older in 1993 from the United States. The CODA cohort, also part of the HRS, is an ongoing stratified survey of persons born between 1924 and 1930, that began in 1998. For both cohorts, respondents are followed longitudinally roughly every two years.<sup>7</sup> 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 formal (paid) and informal (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 and the other is not. 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. Overall, 771 couples met our inclusion criteria and were used to assess the likelihood that the presence (and type) of children affect the care that elderly spouses provide for one another.<sup>8</sup>

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<sup>7</sup> Our focus on the 2000 and 2002 (fourth and fifth) waves of AHEAD is due to data limitations: although receipt of informal care is ascertained consistently since Wave 2 of the AHEAD survey (1995), spouses are not explicitly identified as caregivers except in Waves 4 and 5. Data collected from the significantly smaller CODA cohort suffer from the same limitation.

<sup>8</sup> We treat cohabiting couples as married. Of the 3,895 households in the relevant waves of AHEAD, 988 were married couples with both partners living in the community. Of those, 522

We estimate spousal care received by three groups of married disabled elderly persons : those with joint children; those with stepchildren but no joint children; and those without children. In particular, we focus on hours (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 stepchild 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 stepparent promotes emotional closeness, and that closeness may influence the nondisabled spouse's incentive to provide care to the disabled spouse in anticipation of having the child provide care for her in the future if needed. A parent  $j$  in couple  $i$  is defined to have low attachment to his or her children if none of the children have lived more than 50% of their childhood years (that is, no child  $k_i$  has "coresided" with the index parent  $j$  for at least 9 of that child's first 18 years of life),  $Low_{ij} = 1$ . A parent is defined to have high attachment to his or her children if at least one of the children spent more than 50% of her childhood years coresiding with the index parent,  $High_{ij}=1$ .<sup>9</sup> The two indicators are constructed with respect to both the disabled and nondisabled parent and used to identify differences in spousal care among stepparents with differing levels of attachment to their children relative to couples with no children or joint children.

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met our inclusion criteria (i.e., one spouse was disabled while the other spouse was not). The corresponding numbers for the CODA survey are 1,490, 623 and 249.

<sup>9</sup> Unfortunately, the AHEAD/CODA data do not contain detailed residence histories for respondent's children. Our approach to calculating years of childhood spent with a parent, therefore, are based on the child's age and the parent's marriage length.

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:

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

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

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

Since our main interest is explaining differences in the *intensity* of spousal caregiving as a function of family structure and 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 by the nondisabled spouse, we estimate regression models with the dependent variable ranging from 0 to 100. Each equation is estimated independently and produces estimates of the parameter vectors,  $\beta$ ,  $\beta'$ ,  $\gamma$ ,  $\gamma'$ ,  $\delta$ ,  $\delta'$  and, for the Tobit models, the standard deviation of the error terms.

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 caregiving. A glossary of all variables and summary statistics for our sample is provided in Table 2.

#### 4. 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 stepchildren 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 stepchildren but 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 stepchildren only is consistent with findings by Pezzin and Schone (1999b) for unpartnered elderly persons.

Of course, the patterns in Table 3 are far from conclusive on the issue of how the presence of children affects the decision to provide care to a disabled spouse or whether the relationship is influenced by differing degrees of child 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 of the hypothesis that children act as a commitment mechanism for spouses, contrasts spousal care provided to disabled persons with and without children. Both the demonstration effect and the punishment effect predict that care provision by spouses will be greater if there are children. Model B goes a step further distinguishing between couples with joint children and couples with stepchildren but no joint children. Thus,

Model B allows us to assess the role of family structure and how it affects spouses' caregiving behavior. Finally, Models C and D further disaggregate the effect of stepchildren by degree of attachment to the disabled parent (DP) and the nondisabled parent (NDP). In particular, Model C characterizes families with stepchildren only by the level of attachment of those stepchildren; 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 stepchildren 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 stepparent 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.

Contrary to expectations, joint children do not appear to provide a stronger commitment mechanism to spouses than stepchildren. The second panel of Table 4 (Model B), shows that spouses who do not share joint children with their disabled elderly partners provide more hours of care to their disabled spouses than their counterparts with joint children (27.1 versus 22.2,  $p=.44$ ), although the difference is not statistically significant at any conventional level.

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. stepfather) and nondisabled (e.g., biological mother) parent.<sup>10</sup> 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 stepchildren that have high attachment than among families with joint children (28.5 versus 22.3 in Model C and 28.1 versus 22.4, in Model D), although the relatively small sample sizes resulted in lack of statistical significance at conventional levels. 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 stepfamilies where children's attachment to their parents is low, the punishment effect is not operative. When the disabled parent (e.g., the father) is the stepparent, 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 stepparent, 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 because 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

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<sup>10</sup> As discussed earlier, the threat of punishment is empty in cases where the nondisabled parent has no expectations of receiving care from her stepchild in the future due to low attachment.

this case suggests that the spouse will provide more care in anticipation of influencing the level of care that her child would subsequently provide.

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 stepchildren with low attachment to the disabled parent relative to spouses in which there are joint children may be a stronger demonstration effect. Stepfamilies 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 stepchildren 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.<sup>11</sup> 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.

## **5. Conclusion**

Most caregiving research has focused on the case in which a single elderly parent requires care and where there is at least one adult child who is a potential caregiver. In this paper we focus on the case in which there are two elderly parents — one who is disabled and requires care and the other who potentially provides care. 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

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<sup>11</sup> 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.

than she otherwise would. Our empirical 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 differing 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 multiple offers). If care is provided by at most one child, and if side payments between the children are not allowed, then the wife must be concerned that her actions will affect which of the children, if any, will offer to provide care.

Preference heterogeneity is another potential concern. 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 preference 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 stepchildren 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 stepchildren 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 2.** Variable Definitions and Summary Statistics

<b>Independent Variables</b>	<b>Definition</b>	<b>Mean</b>	<b>Standard Error</b>
<b>Family Structure</b>			
No children	Neither respondent in couple has children	0.06	-
Joint children	Couple has joint children	0.79	-
Stepchildren, no joint children	Couple has children but no joint children	0.15	-
<b>Attachment</b>			
Low attachment to DP <sup>a</sup>	=1 if no child in family i has “coresided” with Disabled Parent for at least 9 of the child’s first 18 years of life (based on child’s age and length of parent’s marriage); 0 otherwise	0.16	-
Low attachment to NDP <sup>a</sup>	= 1 if no child in family i has “coresided” with Non- Disabled Parent for at least 9 of the child’s first 18 years of life (based on child’s age and length of parent’s marriage); 0 otherwise	0.15	-
High attachment to DP <sup>a</sup>	=1 if at least one child in family i “coresided” 9 or more years of the child’s first 18 years of life with Disabled Parent (based on child’s age and length of parent’s marriage); 0 otherwise	0.84	-
High attachment to NDP <sup>a</sup>	=1 if at least one child in couple i “coresided” 9 or more years of the child’s first 18 years of life with Non-Disabled Parent (based on child’s age and length of parent’s marriage); 0 otherwise	0.85	-
<b>Demographic characteristics of Disabled Respondent</b>			
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	-
<b>Health and Functional Status</b>			
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	-

<b>Independent Variables</b>	<b>Definition</b>	<b>Mean</b>	<b>Standard Error</b>
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
Couple'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 one ADL difficulty (difficulty in transferring, dressing, bathing, toileting, eating, or walking across a room) or one IADL difficulty (difficulty with grocery shopping, preparing meals, taking medications, using a telephone, or managing household finances) and who has a nondisabled spouse. Sample size is 771.

<sup>a</sup> Among couples with stepchildren only.

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

<b>Hours of Care by</b>	<b>No children (N = 50)</b>	<b>Joint children (N = 607)</b>	<b>Stepchildren only (N = 114)</b>
<b>Nondisabled Spouse</b>	<b>15.4 (29.0)<sup>¶§</sup></b>	<b>22.5 (41.5)</b>	<b>26.0 (47.6)</b>
<b>Children</b>	<b>0<sup>¶§</sup></b>	<b>1.81 (10.25)<sup>§</sup></b>	<b>0.61 (2.74)</b>
<b>All Sources</b>	<b>17.2 (29.8)<sup>¶§</sup></b>	<b>27.3 (47.9)</b>	<b>29.1 (50.8)</b>
<b>Spouse as a Proportion of All Sources<sup>a</sup></b>	<b>.92 (.22)</b>	<b>.88 (.28)</b>	<b>.90 (.24)</b>

**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**

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

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.