Intuitive Lawmaking: The Example of Child Support

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Setting the amount of a child support award involves tradeoffs in the allocation of finite resources among at least three private parties: the two parents, and their child or children. Federal law today requires states to have child support guidelines or formulas that determine child support amounts on a uniform statewide basis. These state guidelines differ in how they make these unavoidable tradeoffs. In choosing the correct balance of these competing claims, policymakers would do well to understand the public's intuitions about the appropriate tradeoffs. We report an empirical study of lay intuitions about these tradeoffs, which we compare to the principles underlying typical state guidelines. As in other contexts in which people are asked to place a dollar value on a legal claim, we find that citizen assessments of child support for particular cases conform to the pattern that Ariely and his co-authors have called "coherent arbitrariness": the respondent's choice of dollar magnitude may be arbitrary, but relative values respond coherently to case variations, within and across citizens. These patterns also suggest that our respondents have a consistent and systematic preference with respect to the structure of child support formulas that differs in important ways from either of the two systems adopted by nearly all states.

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I. Introduction

A. Legal and Policy Background

When parents separate, whether married or unmarried, their minor children usually reside primarily with one parent, typically the mother.[1] The "residential" or "custodial parent" is normally entitled to an order requiring the other parent, the "obligor," to pay her child support. Enforcement of child support orders was once the exception rather than the rule, making for rather poor compliance,[2] but in recent decades a broad political consensus has produced legal changes yielding more enforcement success.[3] Enhanced enforcement of a law makes its content more important.

At one time, child support amounts were decided case by case, with individual judges exercising broad discretion. This changed, however, with the legal reforms adopted to improve enforcement. Since 1989, the federal Department of Health and Human Services has required all states to have child support guidelines "based on specific descriptive and numeric criteria" that lead to the computation of a specific child support award in each case.[4]

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[1]Many studies show that around 90 percent of custodial parents are mothers. See Ellman et al. (2004a:571–72). Many of these studies are dated, and some authorities believe this figure is dropping. See Venohr and Griffith (2003): "The obligee is female in 90 percent of the [Arizona] child support orders examined in 2002. This is somewhat less than the percentage in the 1999 [Arizona] sample, which was 93 percent, but it is more than the national estimate, which indicates 85 percent of those eligible for child support are female . . . [though the national figure] is based on a slightly different measurement." For simplicity, albeit with some loss of accuracy, we refer to the nonresidential parent with masculine pronouns, and the receiver of child support with feminine ones.

[2]It is difficult to accurately assess trends in child support payments. Past estimates were often based on reports by the custodial parent. Braver et al. (1991) found that paying (noncustodial) parents reported much higher compliance than was reported by the receiving parents in prior studies. To our knowledge, no existing measurement system examines and reconciles reports from both custodial and noncustodial parents. See Braver et al. (1993).

[3]According to Sorensen (2003), among children living in single-mother families whose incomes fell below the federal poverty threshold, 30.8 percent received child support payments in 1996; this number increased to 35.5 percent in 2001. Similarly, the percentage of children receiving child support payments who lived in single-mother families with incomes at or up to 200 percent of the poverty threshold increased from 44.6 percent in 1996 to 50.1 percent in 2001. Legler (2003) finds that child support collections increased from $8 billion in 1992 to $18 billion in 2000.

[4]45 CFR § 302.56(a)(2) (1989).

One important purpose of the guideline requirement was to make it easier and less costly for a custodial parent to obtain a support order by simplifying the process through which the amount of a child support award is determined. Support amounts were to be set in a way that facilitates justice on a "wholesale" rather than customized "retail" basis. To achieve this goal, the federal law also requires the states to enact legal rules requiring their judges to set child support awards at the exact dollar amount yielded by application of the required guideline, unless the judge writes an opinion explaining why the guideline amount would be "inappropriate or unjust" in the particular case. Even the parents' agreement to a support amount different than that specified by the guidelines does not, as a formal matter, alone justify departing from the guideline, although judges ordinarily accept such parental determinations and issue the required statement explaining their order. But in any event, parental agreements are, of course, themselves formed "in the shadow of" the guideline rules. It is therefore not surprising that support orders conform to the amount specified in the formulaic guidelines in about 85 percent or more of support cases (Venohr & Griffith 2003; Guidubaldi 2001). Child support policy is thus made by those assigned the task of drafting a state's support guidelines, not by judges deciding individual cases.

One benefit sought by guideline proponents, greater consistency in support awards, was certainly achieved, but only if one focuses on support awards *within* each state. Federal law imposes no national substantive standards on state guidelines. States are free to set child support amounts at whatever level they believe appropriate. This allows for substantial variation *across* states, and such variation in fact exists. One state's guidelines may call for twice the support amount specified in the adjoining state's schedule in what seems the identical case (Pirog et al. 2003; Morgan & Lino 1999; Pasley & Braver 2004). Of course, such inconsistency could be intentional, the result of different policy choices by the policymakers of each state. But is it? Not necessarily. Much of the variation in fact comes from differing choices of the method used to generate the numbers found in any particular set of guidelines, methodological choices that may be made by consultants without full appreciation by state officials of their policy implications.

B. Existing Systems of Child Support Guidelines

The great majority of state guidelines rely on a method referred to in the literature as "income shares," while a minority employ an alternative system

often called POOI, an acronym for "percentage of obligor income."[5] The POOI system's great advantage is simplicity: the obligor is required to pay a support amount equal to a specified percentage of his income. For example, Wisconsin, an early champion of the POOI system, specifies that the obligor must pay in support 17 percent of his gross income for one child, 25 percent of his gross income for two children, 29 percent for three children, 31 percent for four children, or 34 percent for five or more children.[6] The *custodial* parent's income has no effect on the support amount; it simply does not enter into the child support calculation at all.

This exclusion of the custodial parent's income from the computation strikes many as unfair: their intuition is that the obligee's income should count, too. The POOI calculation also suffers from the unintended public relations implication that the obligor appears responsible for *all* the child's support: if the custodial parent is supposed to be responsible to provide at least some of the child's financial support, why isn't her income included in the calculation? Indeed, the two prior studies in the literature that explored the POOI system found opposition from the public on just this point. A 1985 telephone survey of Wisconsin residents (Schaeffer 1990) asked for the child support amounts they would recommend in various parental income situations. For any given paternal income, mean support amounts declined as maternal incomes rose. More recently, the Australian Institute of Family Studies conducted a survey of Australian attitudes toward child support rules

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[5]A 1999 compilation found that 33 states employed income shares, and 13 used POOI. Massachusetts and the District of Columbia were classified as "hybrid" in this compilation; their guidelines in fact reflect an analysis quite similar to that adopted by the American Law Institute (Ellman et al. 2002). This survey found three states employing what has been called the "Melson" formula; that approach is much like POOI except for its treatment of low-income families (Venohr & Williams 1999). Since 1999, the District of Columbia, as well as some POOI states such as Georgia, have moved to income shares.

[6]See the website of the Wisconsin Department of Workforce Development at http://www.dwd.state.wi.us/dwd/publications/dws/child_support/dwsc_824_p.htm#Guidelines. The court *may* use somewhat lower percentages for any portion of the obligor's income that exceeds $84,000 annually, as specified in a second set of guidelines, and a somewhat lower percentage yet (as set forth in a third set of guidelines) potentially applicable to any portion of the obligor's income exceeding $150,000. See http://www.dwd.state.wi.us/dwd/publications/dws/child_support/dwsc_824_p.htm#High. Other POOI jurisdictions do not employ such stepwise changes in the applicable percentages, although they may cap the income to which they apply their single percentage. Australia uses POOI guidelines; for 2008, it capped the income to which its percentages apply at $113,763 (Australian dollars). See http://www.csa.gov.au/paer/modified.aspx.

(Smyth & Weston 2005). The vast majority of respondents said they pre-ferred a child support system that based support amounts on both parents' incomes, rather than on the obligor's income alone. These perceived short-comings have led most states to reject POOI in favor of income shares.

In its most fundamental sense, the defining characteristic of the income shares system is that it requires both parents' incomes to calculate the support obligation. The basic structure of an income shares guideline starts with a table that specifies a *joint* parental support obligation in dollars, for any given combination of their *combined* parental income with number of children. That joint parental obligation, based on both parents' incomes, is then allocated between the parents in proportion to their incomes. Suppose, for example, that the obligor's monthly income is $4,000 and the custodial parent's is $3,000, and the state income shares guideline sets their joint parental obligation at $1,132. The custodial parent is deemed to pay her share of that support obligation (3/7 of $1,132 = $485) automatically by virtue of the child's presence in her household, while the noncustodial parent is required to pay his share (4/7 of $1,132 = $648) to the custodial parent in cash.

A moment's reflection reveals that there is no inherent reason why an income shares guideline would produce a different support obligation for the noncustodial parent than a POOI guideline. For example, if both systems required the parents to pay 0.17 of their gross income for one child, as does Wisconsin, then both systems would yield the same ultimate support obliga-tion. The POOI guideline would achieve this more directly by simply taking 0.17 of the obligor's income. The income shares guidelines would add intermediate steps by first taking 0.17 of the sum of the two parents' incomes, and then making a proportional allocation of the resulting amount—the arithmetic equivalent of applying the 0.17 to the obligor's share of the total income in the first place.[7] So why then does it matter which guideline approach is used? The reason is that incomes shares guidelines do *not* employ the same set of percentages that POOI guidelines use. It is their different rate structures, more than the focus on one versus two incomes,

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[7]An example may help. If Mom earns $1,000 and Dad earns $2,000, then a POOI system would require Dad to pay 0.17 of his income of $2,000 or $340. An incomes shares system would require him to pay his proportionate share of the total support obligation, which is 0.17 times 3,000 = 510. But his proportionate share is two-thirds; two-thirds of 510 is 340 and so the ultimate obligation is identical.

Figure 1: Combined parental support obligation (custodial and non-custodial parent), as a proportion of their combined parental gross income, under Arizona guidelines.
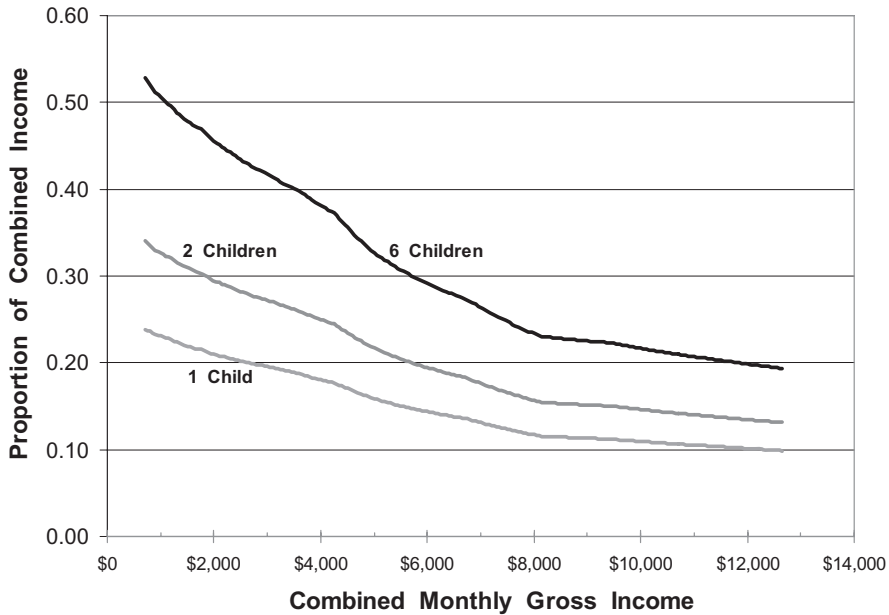
which primarily explains why POOI states and income shares states achieve different results. Income shares guidelines, in contrast to POOI, apply a declining percentage to the combined parental income in their initial calculation of the total parental support obligation that they then allocate proportionately between the parents. Figure 1 shows how this works in Arizona, an income shares state.

Arizona's guidelines set support obligations by reference to the gross incomes of the parents, as does the Wisconsin guideline previously provided as an example of a POOI state. (Some states use net incomes instead, and then typically set the support amount as a higher proportion of income than do the gross income states.) One can see that Arizona rates start very high for low-income parents—considerably higher than the corresponding Wisconsin figures—but drop steeply as parental income increases. For one child, for example, the Arizona rate begins at 0.25 for the lowest income parents, much higher than Wisconsin's 0.17 rate for a single child. But by the time

combined parental income reaches $5,000 monthly, or $60,000 a year, the applicable rate has fallen below 0.17, while Wisconsin continues to require 0.17 of the obligor's income.[8] The Arizona rate eventually drops to 0.10. When there is more than one child, the Arizona rates start even higher, relative to Wisconsin rates, but drop even more steeply. This pattern of sharply declining rates is typical of income shares guidelines.

Declining rates means that increases in obligor income do not produce proportional increases in the support obligation. This has particular impact on low-earning custodial parents. Consider, for example, a custodial parent of one child with a monthly gross income of only $1,000, formerly married to a support obligor who grosses $2,500. His support obligation in Arizona will be $471, or 0.19 of his gross income. Now consider her sister, identically situated except that her former husband earns $6,000 instead. His support obligation would be $781 or 0.13 of his gross income, yielding a precipitous decline for both mother and child from the solid middle-class living standard of her formerly intact family. Her former husband's higher earnings do not give her nearly the advantage over her sister that one might expect.

One might reasonably ask why rates in income shares states exhibit this declining pattern. Ellman (2004) shows that this rate pattern results from the methodological choices of the consultants on whom income shares states rely to construct and update their guidelines. The applicable federal regulations require states to consider "economic data on the cost of raising children."[9] However, one cannot estimate what children "cost" without first deciding what to buy for them. Appreciating that the question "What do children cost?" is insufficiently specified to allow an answer, consultants preparing income shares guidelines substitute a different question: What do parents in intact families on average in fact *spend* on their children? Once

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[8]As noted in footnote 6, Wisconsin judges are allowed to apply an alternative set of somewhat lower percentages to obligor income in excess of $84,000. For example, for the portion of annual obligor income between $84,000 and $150,000, the one-child rate drops from 17 percent to 14 percent; for any portion above $150,000, it drops to 10 percent. See http://www.dwd.state.wi.us/dwd/publications/dws/child_support/dwsc_824_p.htm#High.

[9]Federal law does require all states to reexamine their support guidelines every fourth year, but most, having initially adopted the income shares methodology, had little reason to reconsider that choice. The "Quadrennial Review" requirement is found in the Family Support Act of 1988 (42 U.S.C.A. § 667(a)) and 45 C.F.R. § 302.56(e), to "ensure that application [of the guidelines] results in the determination of appropriate child support award amounts." 42 U.S.C.A. § 667(a).

they establish this amount, they then set the joint parental support obligation at the average amount spent on children by parents in intact families with household incomes comparable to those of the combined income of the separated parents before the court. Income shares may appeal to state officials because it seems to provide them with a method that is value neutral. It replaces the need to choose an appropriate tradeoff between the competing resource claims of the two parental households with a technical exercise that can be delegated to a consultant—ascertaining what parents in intact families in fact spend on their children.

Nonetheless, as Ellman (2004) explains, the value choice is not avoided because tabulating how much parents spend on their children requires deciding what to count as an expenditure on the child. For example, if one counts any expenditure that confers benefit on the child, one arrives at a different number than if one counts only the marginal expenditures made necessary by the child's presence. So anyone employing this method to construct support guidelines makes a methodological decision that reflects his or her choice about what to count, and different choices yield different tradeoffs. This point was recognized by the economist whose work is most frequently relied on by consultants implementing this method.[10] This insight from the academic literature does not appear, however, to have come to the attention of policymakers, for whom the difficult trade-off choices remain hidden in the method employed to measure "expenditures on children." The language of one befuddled court exemplifies the confusion: "The conceptual underpinning [of Maryland's income shares child support guidelines] is that a child should receive the same proportion of parental income, and thereby enjoy the standard of

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[10]David Betson pioneered the method of using data from the Consumer Expenditure Survey to estimate what parents at various income levels spend on their children, and his regularly updated studies provide child support consultants with the information they require to implement this approach (Ellman 2004). He fully appreciated, however, the theoretical and practical difficulties in measuring what parents spend on their children. As he and his co-authors wrote: "A straightforward approach might be to add up all the expenditures, direct and indirect, on children. This approach is full of pitfalls, however. For example, as an empirical matter, it is often difficult for researchers to find out who used up the shampoo or who ate the sugar. Also, even on a theoretical plane, it is hard to know how the costs of, say, heating the house in winter or putting in a smoke detector should be imputed to individual family members. In other words, not only does a problem arise because families do not keep sufficiently minute records, but economies of scale and household-wide public goods raise insoluble theoretical problems" (Betson et al. 1992:2–3).

living, he or she would have experienced had the child's parents remained together."[11]

This goal of providing the child the same living standard the child would have had if the parents remained together is laudable, but probably unobtainable: in the usual case it would require imposing a considerable living standard decline on the support obligor.[12] An income shares guideline that grounds support amounts on the *marginal* expenditures of children in intact families (which is the norm) (Ellman 2004), is unlikely to have that result in the common case in which the custodial parent earns less than the noncustodial parent. The custodial parent's receipt of the other parent's share of the *marginal* expenditures still leaves the low-income custodial household without the base to which that margin must be added to recapture the living standard of the intact household. But state officials might easily (and incorrectly) conclude that the method for constructing their income shares guidelines was indeed based on a value-neutral technical exercise that avoided any need to think about tradeoffs in the resources available to the two parental households.

There are also various technical shortcomings in the way that the marginal expenditure methodology is implemented. For example, the method requires data on household expenditures broken down by household income, but the only available data that provides this breakdown, the Consumer Expenditure Survey, seriously underreports the incomes of the bottom third of the income distribution, and the expenditures of the upper third (Ellman 2004). The impact of these data deficiencies is to overestimate marginal expenditures on children as a percent of income for those in the lower third of the income distribution, and to underestimate it for those in

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[11]Voishan v. Palma, 609 A.2d 319, 322 (Md. 1992).

[12]Although it is typically impossible to provide the child with the marital living standard after the parents separate into two households, one could seek the more modest goal of ensuring the child the same postseparation living standard as that enjoyed by the higher-income support obligor. The conventional understanding is that current support guidelines do not achieve this result either. See, for example, Duncan and Hoffman (1985) and Peterson (1996). One of us has argued, however, that existing support guidelines often do approximate this goal once income taxes and other taxes are considered (Braver 1999; Braver & Stockburger 2004). Nonresidential parents may also spend considerable amounts directly on child-related expenses in addition to the support payments they are required to provide the other parent (see Fabricius & Braver 2003, 2004). One of us has therefore argued that the two households can and often do come out virtually economically equal (Braver 1999; Braver et al. 2005; Braver & O'Connell 1998).

the upper third. For that reason, it is clear that to a significant (if precisely unknown) degree, the declining rate structure of income shares guidelines is an artifact of the flawed data on which the consultants necessarily rely, rather than a reflection of the actual spending behavior of intact families.

In summary, two competing systems of child support guidelines determine support amounts in almost every state, and both have fundamental problems. POOI, while simple, is considered unfair by the majority of the public because it requires the obligor to pay the same flat percentage of his income as child support no matter the custodial parent's income. Income shares guidelines, by contrast, reduce the percentage of his income that the obligor must pay as *either* his income *or* the custodial parent's increases. Is either system correct? Policymakers in income shares states have rarely been faced explicitly with such choices or their trade-off implications because both the rate structure and its basis have typically been buried in the methodological chapters of the consultants' report, where they remain invisible to most state officials.

C. Study's Goals

This study seeks to make the income tradeoffs between parental households explicit, to learn whether citizens have common intuitions about their proper balance, and to understand the structure of those intuitions. Understanding the public's views about the inevitable tradeoffs inherent in child support policy, and comparing their views to the tradeoffs implicitly made in existing support guidelines, should be at least one important component of any reformed approach to constructing support guidelines.

Rather than just asking the public their views about the two systems, as some past research has done, our method for exploring these public sentiments uses a start-from-scratch approach. In essence, we provide the respondents with a blank child support guideline grid, and request that they fill it in. We surmise the policies they prefer, the tradeoffs they make, and how the rate of child support increases or not with either parent's income from their numeric responses, in a "policy-capturing" endeavor (Einhorn 1971; Zedeck & Kafry 1977).

We are mindful that this exercise has its own problems. People are often highly resistant to confronting the difficult tradeoffs that public policy making requires, as illustrated by the visceral discomfort many feel when confronted with expert analyses of the economic valuation of human life. A psychological analysis of this discomfort is provided by the "taboo tradeoffs" theory of Fiske and Tetlock. They argue that "cost-benefit analysis ignores

and usually does violence to normative distinctions that people value as ends in themselves" (1997:294). They recognize that "taboo tradeoffs are unavoidable. . . . In practice, there is a limit to the dollars we will spend to enhance our own personal safety at the workplace or in cars or airplanes, and we will certainly spend less for the safety of others" (1997:290). They argue that attempts to apply market pricing to the domain of human life will inevitably encounter resistance: "It is gauche, embarrassing, or offensive to make explicit trade-offs among the concurrently operative relational modes" (1997:273).

Child support judgments might well be susceptible to these taboo tradeoffs for two reasons. First, the desire to maximize the welfare of the children is often in tension with the desire to establish an allocation that is fair to the noncustodial parent. Second, there is no simple way to earmark the allocation for the dependent youth without enriching the custodial parent.

Judgments about monetary child support (like pain-and-suffering awards, punitive damage awards, and willingness-to-pay judgments) also require ordinary citizens to make quantitative judgments in a domain in which they may not know the norms. This "scaling without a modulus" leaves the evaluator without any reference points, creating widely and arbitrarily variable responses, within and across evaluators. Kahneman and colleagues (Kahneman et al. 1998, 1999; Sunstein et al. 1998; Schkade et al. 2000) argue that citizens have great difficulty making judgments on a dollar scale because the scale lacks clear anchors. Citizens may agree that a defendant behaved outrageously, but how much money does it take to express that outrage or deter a multinational corporation? As a result, dollar judgments are likely to be much more variable across citizens than the range of their views on a seven-point attitude scale might predict. It is possible, though, that citizen judgments reflect what Ariely et al. (2003) call "coherent arbitrariness": the judgments are arbitrary in an absolute sense, but within a set of judgments, there is coherence in a relative, ordinal sense; values vary meaningfully with external, objective stimulus attributes.

D. Prior Studies

There have been several prior studies of attitudes toward child support payments. As noted earlier, Shaeffer asked Wisconsin residents (Schaeffer 1990) for the child support amounts they would recommend in various parental income situations and found lack of support for POOI. In a related analysis (Corbett et al. 1992), some respondents were asked to identify the

appropriate support amount in dollars, while others were asked to identify it as a percentage of the father's income. The average response (for a one-child family, across all income amounts) of those who answered in dollars, when converted to percentages, was 21.4 percent, while the average for those who answered directly in percentages was 24.7 percent. There was a dropoff in the percentage of the father's income that respondents thought he should be required to pay in support as paternal income reached the highest amounts respondents were asked about, but the dollar amount of the award continued to go up with paternal income. Schaeffer reported that respondents' mean awards were 16 percent lower when the father had remarried, and 34 percent lower when the mother had.

Bergmann and Wetchler (1995) conducted a telephone poll of Maryland residents in 1988. Respondents were given four vignettes each and were asked "how much money, if any, you think the absent parent should give each week for the support of the child" in each of them. For one group of 162 respondents, the four vignettes were identical but for the father's "take-home pay," which was one of four amounts: $250, $450, $600, or $1,000 per week. The mother's take-home pay was a constant $250 per week in all four.[13] For a second group of respondents, one of these vignettes was replaced by one in which the mother had a higher income. The respondents' mean support amounts were somewhat higher than those provided by Maryland's income shares guidelines, but there was considerable dispersion across respondents in the preferred amounts, and a small but statistically significant difference between the mean amounts favored by men and women.

The Australian telephone survey (Smyth & Weston 2005) also found strong support for the notion that the obligee's income should count in the child support award. Further, it compared the responses of four groups of respondents: men and women in the general population, and custodial mothers, and noncustodial fathers, in separated families. The Australian questions did not ask respondents to offer judgments about the amount of support in particular cases. A majority of each of the four Australian groups agreed the law should set a maximum amount of support that could be demanded of high-income fathers.

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[13]For two other groups of respondents, the researchers kept father's take-home pay fixed at $450, but varied the number of children, or included a vignette in which the father had remarried, or the mother had a high income. These variations were similar to variables we examined in surveys we plan to address in another paper.

Our study differs from these prior efforts in several important ways. As explained more fully in Section II, we conducted our survey in a jury pool setting that allowed us to employ longer written survey instruments, in contrast to the relatively brief telephone interviews that limited previous studies. That meant that each respondent answered a larger set of questions about particular support amounts than did the respondents in the Wisconsin and Maryland studies. In the Maryland study, the custodial mother's income remained unchanged for one group of respondents, while a second was asked only one question in which it varied, and that question necessarily replaced one of the four that varied the noncustodial father's income. In the Wisconsin study, using the factorial survey approach (Rossi & Nock 1982), respondents were asked about three scenarios randomly chosen from a factorial set of a total of 600 possibilities. However, the analytic method used by the Wisconsin researchers required them to assume each scenario judgment was independent of the others, and to treat them as if they each arose from different respondents. Our method of asking the entire factorial of nine judgments of each subject provided us with two substantial advantages. First, we could relate the entire pattern of judgments, in essence, the respondent's own guideline table, to other respondent characteristics. Second, we could see how the various scenario judgments related to each other using a within-subjects design with comparatively small standard errors.[14]

II. Method

A. *Respondent Pool and Survey Distribution*

Respondents were citizens called to serve on the jury panel in Pima County (Tucson), Arizona. Legal rules allow the county Jury Commissioner to summon citizens to appear on a specified day to serve on the jury panel. Those summoned are chosen from two lists, registered voters and those to whom the Department of Transportation has issued either a driver's license or a nondriver's identification card. After culling duplicates, individuals are chosen by a computer-generated random-selection process intended to ensure that they constitute a representative cross-section of adult citizens in

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[14]Schaeffer's reported standard errors are smaller than she could legitimately claim because she assumes the judgments come from independent subjects when they do not. Statistical methods, such as hierarchical linear models, not widely used in the social sciences when Schaeffer performed her analysis, now permit more appropriate assumptions to be made.

the county. Failure to respond constitutes contempt of court, punishable by a fine. These rules, along with their rather stringent enforcement, allow far less self-selection and bias in the Tucson jury pool than is common in other jurisdictions: well over 90 percent of those summoned eventually appear.[15]

After arriving and signing in at the jury assembly room, panel members wait to be called to jury service; they often have to wait more than an hour. They receive instructions, as a group, from the Jury Commissioner staff about their prospective jury service. Following that presentation, a research assistant requested that "as long as they were there anyway," would they voluntarily assist the researchers and the court by participating in a "university-based" survey about child support? On most of the days we administered our survey, the entire jury panel had from 400 to 450 members. Approximately 75 percent of the panel members accepted the invitation and completed the survey form they were given.

Of those completing the survey, 55 percent were women, 62 percent were married, 35 percent had been divorced, and 69 percent had children. Twelve percent said they had at some time been ordered to pay child support (almost all of these were male); 18 percent had at some time been the person to whom someone else was ordered to pay support (almost exclusively female). The education levels of the respondents were higher than national averages: only about 3 percent had failed to graduate from high school, 25 percent had a bachelors degree, and nearly 16 percent a graduate or professional degree. The high level of graduate degrees may reflect the location in Pima County of the University of Arizona. Our sample was also wealthier than the national average, with fewer respondents earning less than $15,000

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[15]By statute in Arizona, Title 21, those chosen by this process are sent a jury summons and a questionnaire. Answers to the questionnaire allow the Jury Commissioner to determine whether the person is disqualified or eligible to be excused from service. To be qualified one must be over 18, a citizen, and a resident of Pima County. In addition, felons whose rights have not been restored, and insane persons, are disqualified from jury service. Excuses may be granted to persons who are over 75 years old, who are full-time caregivers, who have a medical reason for being unable to serve, who have served on a jury within the prior two years, or who do not speak English. There are no other bases for an excuse. Those who claim they are unable to speak English are called on the telephone and questioned in English to confirm their claim. Those who do not respond at all to the jury summons are sent a failure to appear notice three days later. A failure to appear notice is required in only 10 to 12 percent of the cases. The failure to appear notice explains that a failure to respond to a jury summons constitutes civil contempt of court, and that a fine of up to $500 may be imposed on persons guilty of such contempt. Many of those who do not initially respond appear in response to this notice (telephone interview with Kathy Brauer, Jury Commissioner, Pima County Superior Court, May 17, 2007).

(5.6 percent vs. 14.6 percent for the United States) and more earning above $60,000 (46 percent vs. 39 percent for the United States).[16]

B. The Survey Instrument

The survey instruments employed for this study contained three sections. The final section on each form contained the questions providing the following demographic information about our respondents: their gender, whether currently married, whether they have ever been divorced, have children, have ever paid child support, or received it (all dummy coded), age, education (choices were: 1 = I quit school before high school graduation; 2 = I graduated from high school; 3 = I attended some college but never got a college degree; 4 = I attended college and received a two-year (associates) degree; 5 = I attended college and received a four-year (bachelor's) degree; 6 = I attended college, received a bachelor's degree, and also attended one year or more of graduate or professional school after college; 7 = I have a graduate or professional degree, masters or doctoral), and annual household income (1 = less than $15,000; 2 = between $15,000 and $30,000; 3 = between $30,000 and $60,000; 4 = between $60,000 and $90,000; 5 = more than $90,000). A second section was comprised primarily of Likert attitude items we discuss in a later paper. The third section contained the "scenarios"—statements describing a particular parental situation, including parental incomes—that we present below. Respondents were asked to indicate for each scenario the dollar amount they believed the support order should specify. We had previously conducted a methodological study (MacCoun et al. 2008) to determine whether our results would be importantly affected by whether we asked respondents to indicate the support amount they favored by *naming* a number; naming a number after having their response *anchored* by the suggestion that some courts ordered some particular amount, even though other courts did not always agree; *choosing* a number from a range of 18 possible values we supplied (including "zero" and "more than $3,500"); and *rating* on a scale (from much too low to much too high) various potential support amounts we supplied. We found

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[16]The national figures here were derived from the data reported in the U.S. Census Bureau, Current Population Survey, 2006 Annual Social and Economic Supplement, Table HINC-01, *Selected Characteristics of Households, by Total Money Income in 2005*, available at http://pubdb3.census.gov/macro/032006/hhinc/new01_001.htm.

no differences between the NAME and CHOOSE variants that would affect our analysis, so used both (*N* = 262) for all the scenario questions examined in this article.

Otherwise identical forms were also prepared in distinct versions that varied the sequence in which the scenario questions were presented so that, for example, some subjects began with questions about higher-income parents and worked toward lower incomes, while others were presented with the scenarios in different sequences. (We examine these order effects in MacCoun et al. 2008, but note that they do not importantly qualify the conclusions we present in this article.)

The focus of this inquiry was the impact of changes in parental incomes on the child support amounts respondents chose or named. We therefore kept the basic scenario facts constant, apart from incomes. We told respondents to assume that there is one child, a nine-year-old boy, who lives mostly with Mom, but Dad sees him often, and the child frequently stays with Dad overnight. Each item also specified that the father's (obligor's) take-home pay was either $2,000, $4,000, or $6,000 per month, and the mother's (obligee's) take-home pay was either $1,000, $3,000, or $5,000 per month. There were thus nine possible income combinations, and every respondent was asked to make a judgment about all nine. Here is a sample item: "**Mom's** monthly take-home pay is **$5,000 a month**, and **Dad's is $6,000**. How much should Dad be required to pay Mom every month for child support, all things considered?"

The respondents were instructed as follows.

We want to know the *amount* of child support, if any, that *you* think Dad should be required to pay Mom every month, all things considered. What will change from story to story is how much Mom earns, and how much Dad earns. There is no right or wrong answer; just tell us what *you* think is right. Try to imagine yourself as the judge in each of the following cases. Picture yourself sitting on the bench in a courtroom needing to decide about what should be done about ordering child support in the case and trying to decide correctly. To do so, you might try putting yourself in the shoes of Mom or of Dad or both, or imagine a loved one in that position.

III. Results

A. Basic Results

Our analytic approach uses hierarchical linear models (HLM), also known as multi-level models, mixed models, or random coefficient models, appropri-

ate when variations are both within and between subjects. Thus, each respondent has *a series* of child support judgments (these vary *within* respondents), but *only one* gender or marital status (which, of course, vary *between* respondents). To analyze such data, the HLM approach requires formulations of a regression model both at "Level 1," *within* each respondent, and at "Level 2," *between* respondents. Our fundamental Level 1 model, using standard HLM notation, is below:

$$CSAmount_{ij} = b_0 + b_1 CPIncome_j + b_2 NCPIncome_j + \varepsilon_{ij}. \tag{1}$$

To translate, we want to predict the child support amount (*CSAmount*) respondent *i* will produce for the *j*th scenario. Our Level 1 model specifies that this is a function of a constant, b_0, plus an amount based on the *CPIncome* we provide for that *j*th scenario, plus another amount due to the *NCPIncome* of the *j*th scenario, plus a random error term, $\varepsilon_{i,j}$. *CPIncome* is either (in thousands) 1, 3, or 5, while *NCPIncome* is 2, 4, or 6. The *b* coefficient tells us how much, on average over all judgments by all respondents, the child support judgment amount increases or decreases for each \$1,000 increase in monthly take-home income. With the above model, we found $b_0 = 321$, $b_1 = -104$ (meaning that for every \$1,000 increase in *CPIncome*, child support awards drop \$104 on average), and $b_2 = 185$. This implies, for example, that for the scenario in which *CPIncome* is \$3,000 and *NCPIncome* is \$4,000, the average child support judgment over all respondents was estimated at $\$749 = 321 + 3 * -104 + 4 * 185$.

We can add a bit of complexity to the model and explore whether *CSAmount* judgments are not really three equally spaced straight-line functions of *CPIncome* and *NCPIncome*, as assumed above, by inserting an interaction term, *CPIncome* BY *NCPIncome* (we merely multiply the two amounts, so, e.g., 3 * 6 = 18.) In other words, the Level 1 model becomes[17]

$$CSAmount_{ij} = b_0 + b_1 CPIncome_j + b_2 NCPIncome_j + b_3 CPxNCP_j + \varepsilon_{ij}, \tag{2}$$

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[17]We also examined more complex models that included quadratic (squared) main effects as well as interactions, allowing one or more lines to be bowed rather than straight. Three of the quadratic interaction terms were significant but all just barely so ($p < 0.04$) and visual comparison of the actual and fitted means suggested that these nonlinearities were both minimal and subtle. Therefore, for simplicity of further exposition, all the quadratic terms and interactions in the following analyses are omitted and Equation (2) instead was estimated, with the result as shown in Table 2.

Table 1:   Coefficients and Significance Tests for an HLM Level 1 Equation Estimating the Child Support Judgment from the Two Parents' Take-Home Incomes, Including Their Interaction

Parameter	b Estimate	Std. Error	t	Sig.
Intercept	−55.489	46.952	−1.182	0.237
CPIncome	21.983	12.169	1.807	0.071
NCPIncome	278.835	9.553	1.807	0.000
CPxNCP	−31.446	2.808	−11.198	0.000

CPIncome = custodial parent's take-home income; NCPIncome = noncustodial parent's take-home income; CpxNCP = Interaction (product of) between the two parent's incomes. Number of observations = 2,358. Number of individuals observed = 262.
SOURCE: Survey of Pima County, Arizona jury pool.

Table 2:   Child Support Values as Estimated by HLM Level 1 Equation

	NCP INCOME		
CP INCOME ↓	2,000	4,000	6,000
1,000	461	956	1,451
3,000	379	748	1,117
5,000	298	541	784

CP Income = custodial parent's take-home income; NCP Income = noncustodial parent's take-home income; income and support amounts are monthly. Number of observations = 2,358; number of individuals observed = 262.
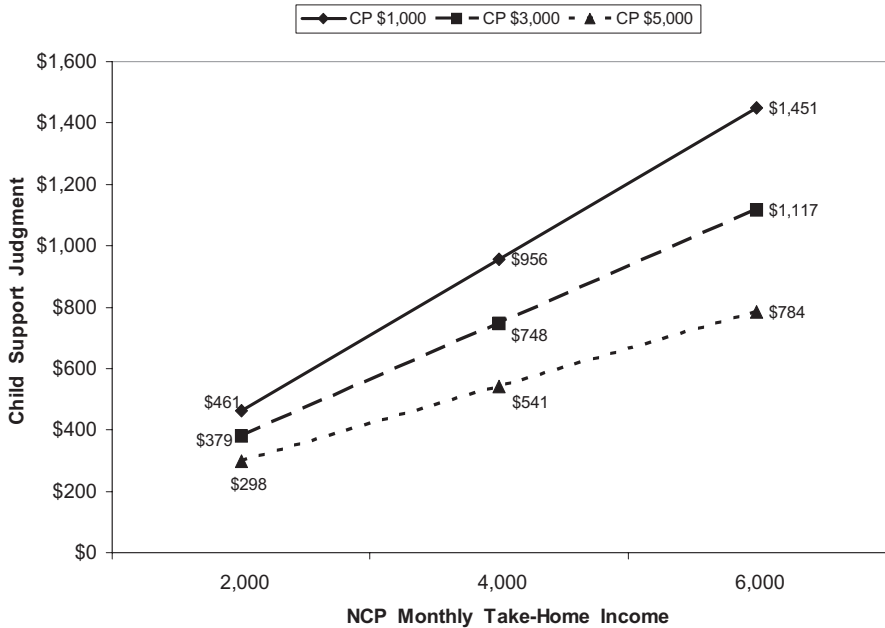SOURCE: Survey of Pima County, Arizona jury pool.

with the coefficients as shown in Table 1 and the estimated child support values that result reported in Table 2 and displayed in Figure 2.[18]

As can be seen by Table 2, the HLM analysis of Equation (2) found that the interaction was indeed highly significant ($p < 0.001$), as was *NCPIncome*, but *CPIncome* was reduced to being only marginally significant ($p < 0.07$),

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[18]The survey support amounts reported here and elsewhere (except for Figure 5) are the HLM fitted values, based on the 262 respondents who responded to all nine scenario questions (i.e., listwise deletion of missing values). Slightly different results are obtained if one also included data from the additional respondents who answered at least one but not all nine of the questions, or used the actual mean values, whether for all respondents who answered any particular question, or for only respondents who answered all the questions, or the median values (with or without listwise deletion). Also, a somewhat different set of values would be obtained by employing the more complex HLM models that we rejected because, as explained above in footnote 17, the improvement in the fit was too small to be worth the added complexity.

Figure 2:   Child support values as estimated by HLM Level 1 equation.

Level 1 hierarchical linear model analysis of 262 respondents to survey of Pima County, Arizona jury pool; each respondent asked to decide the monthly child support payment that should be required in each of the nine cases that result from combining three possible levels of custodial parent (CP) take-home pay ($1,000, $3,000, or $5,000 monthly) with three possible levels of noncustodial (NCP) take-home pay ($2,000, $4,000, or $6,000 monthly).

due to its collinearity with the interaction. Three features apparent from Figure 2 are noteworthy.

1. As can be seen by the upward slope of the lines, as NCP's income increases, respondents thought that the *amount* of child support should increase significantly, a principle indeed represented in all current state guidelines.

2. The fact that three different lines are required for the three different CP incomes—that the three lines are not on top of one another—illustrates that our respondents reject POOI guidelines, which do not respond to changes in CP income. Instead, respondents believe that, for any given level of NCP income, as CP's income increases, the amount of child support should decline. This

finding is consistent with public views rejecting POOI found in past investigations.
3. Not only are the three lines not congruent, they also are not parallel. They fan out as NCP income increases. This is a result of the significant interaction between the two parents' incomes. Our respondents believe that the lower the income of the CP, the more rapidly the support amount should increase with NCP income, a principle about which state guidelines differ.

Perhaps the most noteworthy point, however, is not visible from Figure 2 because it concerns the variability in the respondents' judgments rather than their patterns. The judgments are highly variable *across* respondents, which is the result one would expect if respondents have little frame of reference in which to make them. For example, as Table 2 shows, the support award averaged $379 when respondents were told CP's monthly take-home income was $3,000 per month and NCP's was $2,000. But the standard deviation (not shown) around this mean was huge, $243. However, our repeated measures design allowed us to probe the relationship among the judgments given by any single respondent: Are the repeated judgments of any one respondent also highly variable, or are they stably related to one another?

One way of answering this question is to observe the relationship between an earlier and a later judgment given by any respondent. For example, averaged over all orders, the correlation between the first and second judgment given by a respondent was $r = 0.78$, while between the second and the third, it was $r = 0.80$. This implies that, whatever the standard deviation for the second judgment, predicting it once the respondent's first judgment was known would lower the standard deviation (more precisely, the standard error of estimate) to 37 percent of its former value. We interpret this as an illustration of coherent arbitrariness (Ariely et al. 2003).

Another way of observing the coherent arbitrariness of the judgment is to note the *small* amount of variance in the *slope* of the individual regression lines as compared to the *large* amount of variance in the *intercept*. For example, the estimated standard error of the NCP income *b* slope parameter in Table 1 is shown to be only 9.55 per 1,000. In contrast, there was a value almost five times higher (46.95) for the standard error of the Y-intercept of the individual regression lines. Thus, when we ask them all the amount of support appropriate in a single chosen scenario, we find considerable variance, but when we then vary that scenario across different income levels for CP and NCP, we find relatively little variance in how each of them adjusts

their answer in response to the changed incomes. There is widespread concurrence about the amount they need to add or subtract as they go from scenario to scenario.

B. Demographic Predictors of the Judgments.

The scenario findings presented in Figure 2 are *average* results, averaged over *all* respondents, without regard to any of their characteristics. We can take individual differences into account in these scenario judgments by incorporating HLM's Level 2 equations. This method reveals relationships between variations in respondent answers to demographic questions and variations in the support amount they name in response to the scenario questions. First, we allow, by adding a set of i subscripts, that each respondent might have his or her own individual child support equation, and that the four b coefficients for respondent i in Equation (2) might not be the same as those of respondent i'. For the Level 1 Equation (2), the equation becomes:

$$CSAmount_{ij} = b_{0i} + b_{1i}CPincome_j + b_{2i}NCPIncome_j + b_{3i}CPxNCP_j + \varepsilon_{ij}. \quad (3)$$

Then we would allow as many as four Level 2 equations, each saying that one of the above four b coefficients in Equation (3) for a certain respondent is itself predictable from specified characteristics of that respondent. For example, to see whether the respondent has children (dummy coded as 1 = yes; 0 = no) relates to these coefficients, we set up a Level 2 equation specifying the *Children* variable as the predictor. For the b_0 (intercept) coefficient for respondent i, this equation would be:

$$b_{0i} = u_{10} + u_{11}Children_i + \varepsilon_{ij}. \quad (4)$$

Equation (4) allows the *Children* variable to impact the intercept only. We create similar equations for the remaining three b coefficients, allowing the *Children* variable to potentially impact the *CPIncome* slope, the *NCPIncome* coefficient, or their interaction, respectively. Then we substitute the right side of these equations for each of the b coefficients in the original equation to obtain one large "combined" equation.

We entered, in turn, each of the following demographic variables in the combined equation: children, gender, whether currently married, whether currently divorced (all dummy coded), age, household income, and

Figure 3:   Child support judgments of male and female respondents.
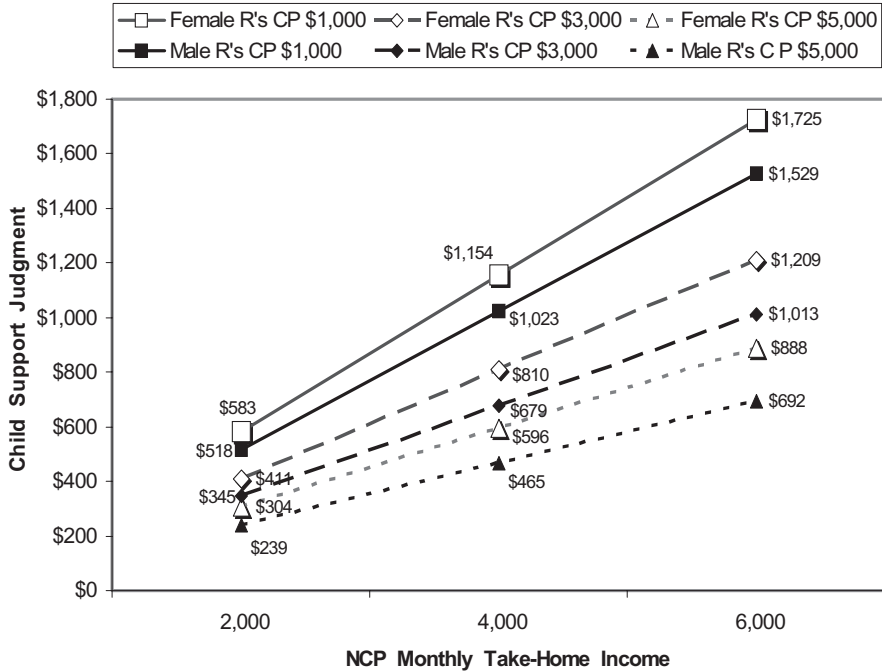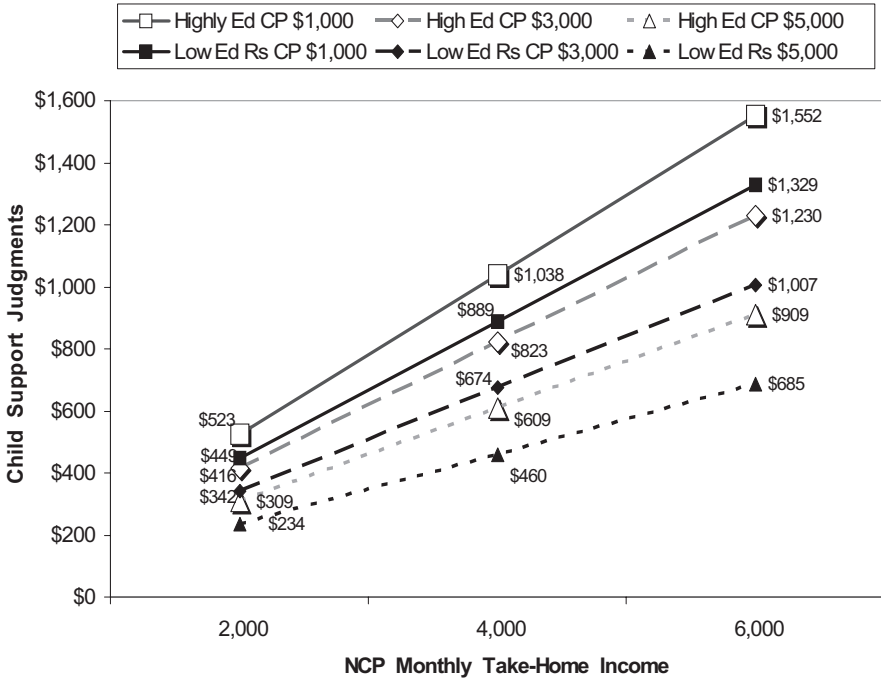

Level 2 hierarchical linear model analysis of 262 respondents to survey of Pima County, Arizona jury pool, separating predicted support amounts of male and female respondents, for three possible levels of custodial parent (CP) take-home pay ($1,000, $3,000, or $5,000 monthly) and three possible levels of noncustodial (NCP) take-home pay ($2,000, $4,000, or $6,000 monthly). Interaction of gender with NCP income significant, $p < 0.001$.

education.[19] Of these, only two registered any significant effects: gender and education, and both effects were interactions of that demographic with *NCPIncome*. Neither current marital status, ever divorced, children, age, nor household income significantly related to the child support judgments, not as main effects nor in interaction with CP nor NCP income. Gender, however, significantly interacted with *NCPIncome* ($p < 0.001$). This effect is shown in Figure 3, in which the female respondents are represented by the

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[19]We did not enter whether they paid or received child support, since these variables were so collinear with gender that the effects would be redundant.

Figure 4:   Child support judgments of high and low education respondents.

Level 2 hierarchical linear model analysis of 262 respondents to survey of Pima County, Arizona jury pool, separating predicted respondent support amounts by education level, for three possible levels of custodial parent (CP) take-home pay ($1,000, $3,000, or $5,000 monthly) and three possible levels of noncustodial (NCP) take-home pay ($2,000, $4,000, or $6,000 monthly). Interaction of education level with NCP income significant, $p < 0.001$.

lighter lines with the open markers. Although female respondents tended to give higher child support judgments than did male respondents, the difference was pronounced only for the higher NCP incomes.

For education level, the pattern was similar; it, too, significantly interacted with *NCPIncome* ($p < 0.001$). As shown in Figure 4, better-educated respondents (we show those one *SD* above the education mean (a college degree or more) as represented by the lighter lines with the open markers) tended to award higher child support than their lower-educated counterparts (we show those who were one *SD* below the education mean (little college) by the dark lines with the filled markers), but this was so primarily for the higher NCP incomes.

C. Comparing Respondent Judgments to Existing Guidelines

The prior analysis makes clear that our respondents depart from POOI guidelines because they (but not POOI guidelines) respond to changes in the custodial parent income when obligor income is held constant. But how do their judgments compare with the support amounts courts order under the more common income shares guidelines? It is not obvious which state to choose for this comparison, and the choice could matter because guidelines vary substantially among income shares states for a variety of reasons, only some of which arise from differing methodological choices in generating them. One variation was useful to us, however. Some incomes shares states calculate support amounts using *net* parental incomes, which seems to match the "take-home pay" variable used in our scenarios more closely than would *gross* income, used by the remaining income shares states.[20] A 1999 survey indicated that of the income shares states, 12 used net income in their guidelines (Venohr & Williams 1999).

To choose among these 12 states, we consulted a second survey (Venohr & Griffith 2005), which calculated the guideline amount in every state for a one-child family in which the parents each had the median monthly income for their gender: $2,631 for men, and $1,762 for women. It showed that for this couple, among the 12 net income income shares states, Iowa had the median support amount. We therefore compared the survey support amounts reported above in Table 2 to those that would be ordered under Iowa's guidelines.[21] That comparison is set out in Table 3. Within each cell, the *higher* support amount is in bold.

The results are rather startling. For the middle cell in this 3×3 matrix, the Iowa support amount is *identical* to the amount favored by our respondents. This suggests that our respondents are, on average, neither higher nor lower than median income shares guidelines. Further examination, however, qualifies this initial impression. One can see that our respondents favored

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[20]We employed "take-home pay" in our scenarios because we believed it to be a widely understood term that would be interpreted similarly by all our respondents. By contrast, we were concerned that if we used gross income in our scenario questions, respondents might vary considerably in how they translated those gross amounts into spendable income, thus confounding that irrelevant factor with the child support judgments we wished to study.

[21]In calculating the comparable Iowa support amounts, we made no adjustments for medical expenses or childcare because the information provided our respondents in the scenarios had no information upon which to make such adjustments.

Table 3: Iowa Support Guideline Amounts Compared to Respondents' Preferred Amounts

CP Monthly Take-Home Income ↓	NCP Monthly Take-Home Income →	2,000	4,000	6,000
1,000	*Survey*	**461**	**956**	**1,451**
	Iowa	456	804	1,122
3,000	*Survey*	379	748	**1,117**
	Iowa	**404**	748	966
5,000	*Survey*	298	541	784
	Iowa	**374**	**668**	**954**

CP Income = custodial parent's income; NCP Income = noncustodial parent's income; number of observations of survey respondents = 2,358; number of respondents observed = 262. Survey amounts are the HLM fitted values presented in Table 2.

Sources: Survey of Pima County, Arizona jury pool; Iowa guideline amounts from 2008 Iowa guidelines.

higher amounts than the Iowa guidelines in cases involving the lowest income custodial parent (top row), but lower amounts than the Iowa guidelines in cases involving the highest income custodial parent (bottom row). Thus, our respondents were far more responsive to custodial parent income than are Iowa's income shares guidelines. This can be quantified by submitting the Iowa guidelines to regression analysis and solving for the coefficients according to Equation (1). Whereas our respondents' coefficient for *CPIncome* was −104, it was only −32 in Iowa. Thus, our respondents were three times as responsive to the income of the custodial parent as the income shares system. Our survey respondents also increased support amounts by a greater margin, per additional dollar of obligor income (185), than do the Iowa guidelines (150).[22]

One might nonetheless reasonably ask whether the pattern we observed above is peculiar to Iowa, or would be replicated if the judgments were compared to guidelines in effect in another state. The most logical comparison would seem to be to the guidelines of Arizona, the income shares state in which our respondents live. The governing law of their home state may be a potential frame of reference for them as well as a benchmark for us against which to compare their judgments. However, since Arizona is

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[22]A more exact comparison would include the interactions and use Equation (2). The coefficients for the intercept, *CPIncome, NCPIncome,* and CP × NCP, respectively, from the Iowa guidelines were 151, −12.7, 167, and −5.3. These can be compared to the coefficients in Table 1, indicating that our respondents had a much larger interaction coefficient as well.

among the majority of income shares states that base support amounts on gross rather than net income, we first needed to transform the "take-home pay" incomes we gave our respondents to the "gross incomes" used by the Arizona guidelines.[23] For each of the nine scenario income combinations we gave our respondents, we then calculated the Arizona guideline amount using, in each case, the gross income equivalents to that scenario's take-home pay amounts.[24]

We compare our respondents' preferred amounts to the Arizona guideline amounts in two different ways. First, we compared the dollar

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[23]To make the conversion, we first obtained from the Internal Revenue Service the average total federal income tax paid by filing status, number of children living at home, and adjusted gross income. The "tax paid" figure included deductions to reflect any Earned Income Tax Credit (EITC) actually refunded. These data yielded the average tax rate actually paid for each group on total income. The lowest income groups have negative federal tax rates because their EITC refund is greater than any federal tax owed. For those with positive rates, we assumed a state tax rate equal to 20 percent of the federal rate; for those with negative federal rates due to EITC, we assumed a state tax rate of zero. Finally, to the rates thus calculated for all groups, we added the 6.2 percent FICA payroll tax collected from employees on all income below $97,500 annually, and the 1.45 percent Medicare tax on all income. Using the total rates thus derived, we then calculated the gross income required to yield the net incomes corresponding to the take-home pay amounts used in our scenarios. The noncustodial parent is assumed to have no dependent children living with him for the purpose of this calculation. For noncustodial parent take-home incomes of $2,000, $4,000, and $6,000, the equivalent gross levels thus calculated were, respectively, $2,383, $5,129, and $7,994. For custodial parent take-home incomes of $1,000, $3,000, and $5,000, the equivalent gross levels thus calculated were, respectively, $902, $3,481, and $6,255. (The custodial parent is assumed for this calculation to be living with the one minor child who is the subject of the support award.) Child support amounts under the Arizona guidelines for our scenarios were then obtained using the gross income equivalents thus calculated. We checked our conversion method against an alternative, computing the federal and Arizona income taxes for various candidate gross incomes using TaxCut© software, assuming the standard deduction and appropriate tax status. We continued this way iteratively, included FICA and Medicare taxes, until the desired net was obtained. This method produced gross income estimates that were substantially similar to the estimates produced by the first method.

[24]The Arizona child support amounts were calculated without the adjustments for health insurance or child-care costs that the guidelines allow because our scenarios contained no facts on which any such adjustment could be based. We did include the "parenting-time adjustment" allowed under the Arizona guidelines because we told our respondents that while Mom had primary custody of the child, "Dad sees him often." Table A on page 12 of the Arizona guidelines sets forth the appropriate adjustment according to the number of "parenting time days" the support obligor has each year, the calculation of which follows rules set forth in the guidelines. We applied the adjustment specified in the table for "88 to 115" parenting time days. This is the most commonly used adjustment in Arizona and typically applies to the case in which there is both a clear primary custodian, and a parenting time allocation that provides the other parent frequent contact with the child.

Figure 5: Child support payments under Arizona guidelines compared to survey respondents.

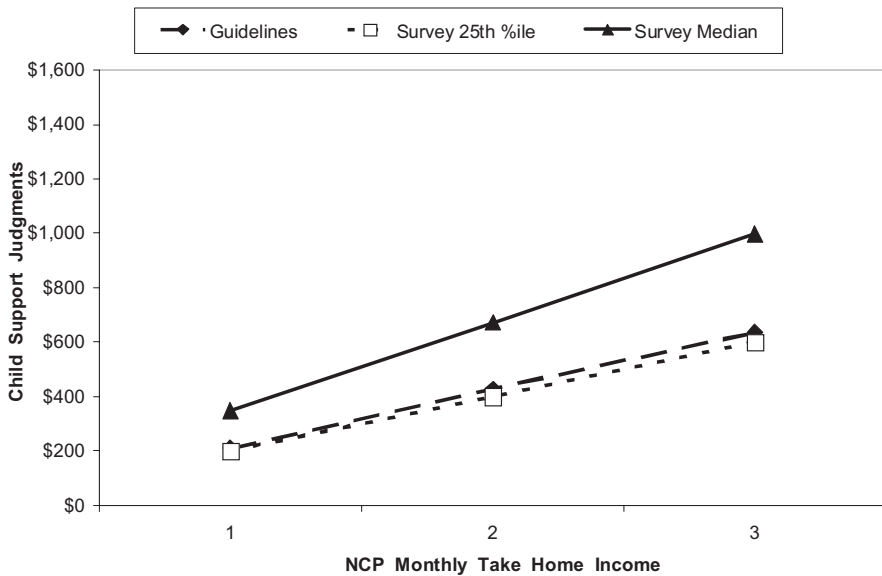*a.* When Custodial Parent Take-Home Pay is $1,000 Monthly
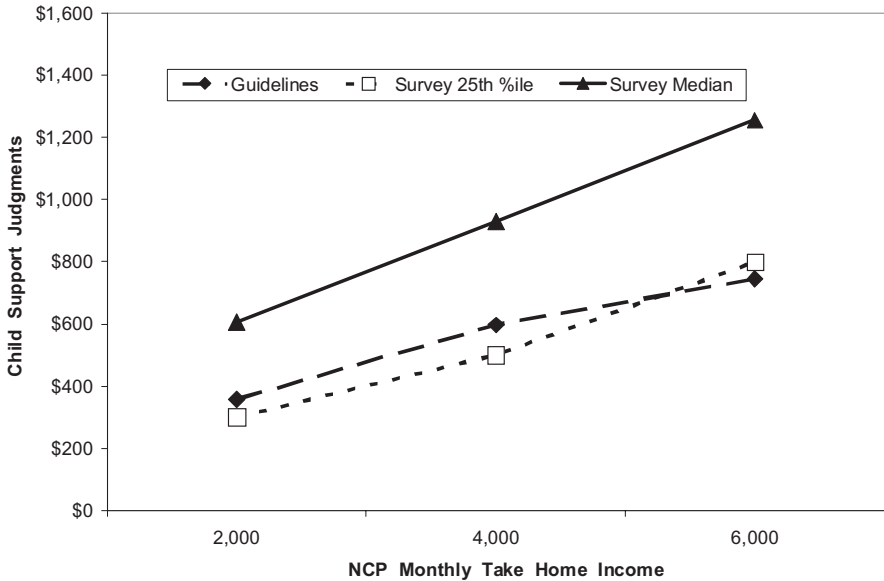
NCP = Noncustodial parent. Monthly child support payments owed by NCP to custodial parent with one child and monthly take-home pay of $1,000, as set by Arizona Child Support Guidelines in effect during 2008, and as favored by the median respondent, and the respondent at the 25th percentile, in survey of Pima County, Arizona jury pool (*N* = 262).

support amounts favored by our respondents compared with the support amounts that would be assessed under the Arizona guidelines. Arizona guidelines yield lower child support amounts than a "median" state such as Iowa (Pirog et al. 2003; Morgan & Lino 1999; Braver & Stockburger 2004). Since our respondents matched the Iowa guidelines for the middle cell of our nine scenarios, we might expect their preference to exceed the amounts fixed in the Arizona guidelines. Figures 5a and 5b indeed show that for scenarios involving the two lowest earning custodial parents ($1,000 or $3,000 monthly), the median support amount favored by our respondents is considerably higher than the amount specified in the Arizona guidelines. In fact, they track almost perfectly the 25th percentile of our respondents' answers. The story is a little different for the case of the highest earning custodial parent, although as Figure 5c shows, the pattern is similar even though less striking.

Figure 5:   Continued
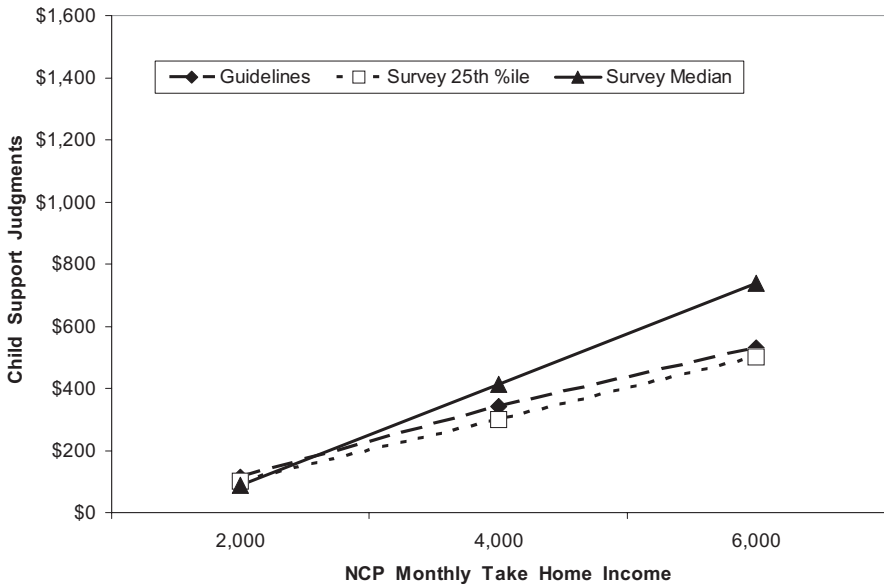b. When Custodial Parent Take-Home Pay is $3,000 Monthly

NCP = Noncustodial parent. Monthly child support payments owed by NCP to custodial parent with one child and monthly take-home pay of $3,000, as set by Arizona Child Support Guidelines in effect during 2008, and as favored by the median respondent, and the respondent at the 25th percentile, in survey of Pima County, Arizona jury pool (*N* = 262).

Apart from the raw support amounts, we were also interested in comparing the rate structure favored by our respondents with the structure of the Arizona guidelines. This is revealed in Figures 6a, 6b, and 6c, which show the support amounts favored by our respondents, and the support amount called for in the Arizona guidelines, as a *percentage of the obligor's net* income. Figure 1 showed that the total parental support obligation in Arizona declines as a percentage of total parental income as total parental income rises, although this regressive rate pattern flattens at higher parental incomes. It was noted that this is typical of the rate structure of income shares guidelines. The dark dashed lines of Figures 6a and 6b show the same regressive pattern when the noncustodial parent's "Basic Support Obligation" (as it is called in the Arizona guidelines) is expressed as a percentage of the noncustodial parent's income. The pattern disappears in Figure 6c, when the custodial parent is earning $5,000 monthly, because then, even at the lowest noncustodial parent income,

Figure 5:   Continued
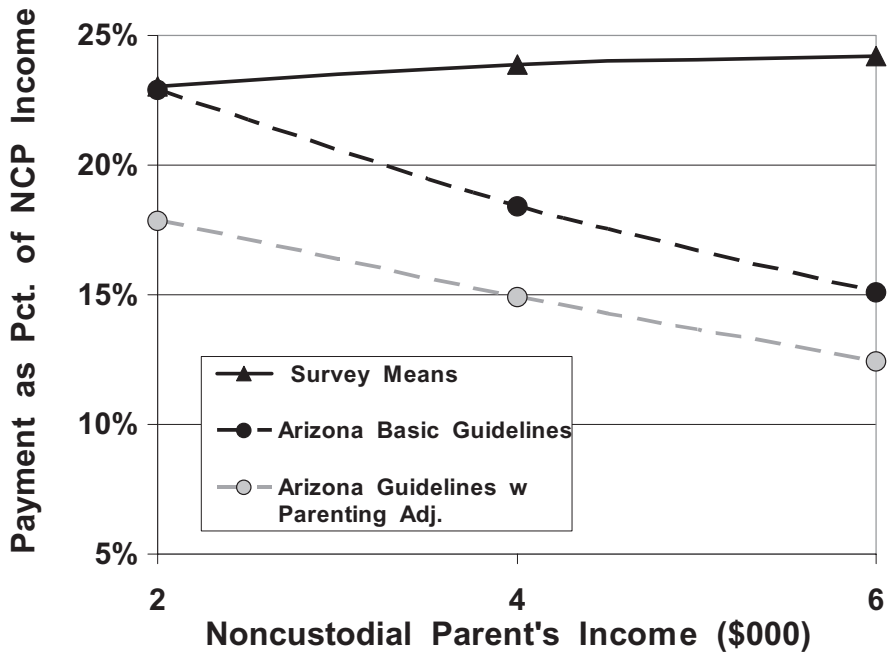*c.* When Custodial Parent Take-Home Pay is $5,000 Monthly

NCP = Noncustodial parent. Monthly child support payments owed by NCP to custodial parent with one child and monthly take-home pay of $5,000, as set by Arizona Child Support Guidelines in effect during 2008, and as favored by the median respondent, and the respondent at the 25th percentile, in survey of Pima County, Arizona jury pool (*N* = 409).

the combined parental income has then reached the flatter portion of the one-child curve in Figure 1.

However, Arizona makes a further adjustment to this Basic Child Support Obligation before setting the actual support order. It subtracts from the Basic Obligation an amount intended to reflect the costs incurred by the support obligor exercising the parenting time allowed him under the companion child custody order. The Arizona support amounts shown in Figure 5 included this adjustment,[25] as do the gray dashed lines in Figure 6. The adjustment, of course, produces a lower support amount in all three parts of Figure 6. The same basic pattern of declining support rates is nonetheless preserved in Figure 6a. In Figure 6b, however, the guideline rate becomes

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[25]See footnote 24.

Figure 6:   Child support award as percent of obligor's take-home income.
a. When Custodial Parent Take-Home Pay is $1,000 Monthly

Monthly child support payments owed by noncustodial parent (NCP) to custodial parent with one child and monthly take-home pay of $1,000, (a) as set by Arizona Child Support Guidelines in effect during 2008, and (b) as favored by respondents in survey of Pima County, Arizona jury pool ($N = 262$). Survey amounts are the HLM fitted values reported in Table 2; Arizona guideline amounts are calculated both with and without the allowed adjustment for the amount of parenting time awarded to NCP.

flat, at about 10 percent (compared to about 18 percent for our survey respondents). Figure 6c, which shows a rate that increases at first but then also flattens, charts the relatively less common case in which the custodial parent's take-home pay is $5,000 a month, and higher than the take-home pay of the support obligor in two of three cases.

The Arizona parenting-time adjustment is uncommon. Although several other states also provide for a visitation adjustment, Arizona employs a unique method for calculating it.[26] Arizona's preadjustment declining rates

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[26]Most states do not adjust support for ordinary visitation arrangements even if they do make adjustments when the parenting arrangements approach equal residential time (Miller 2004).

Figure 6:   Continued
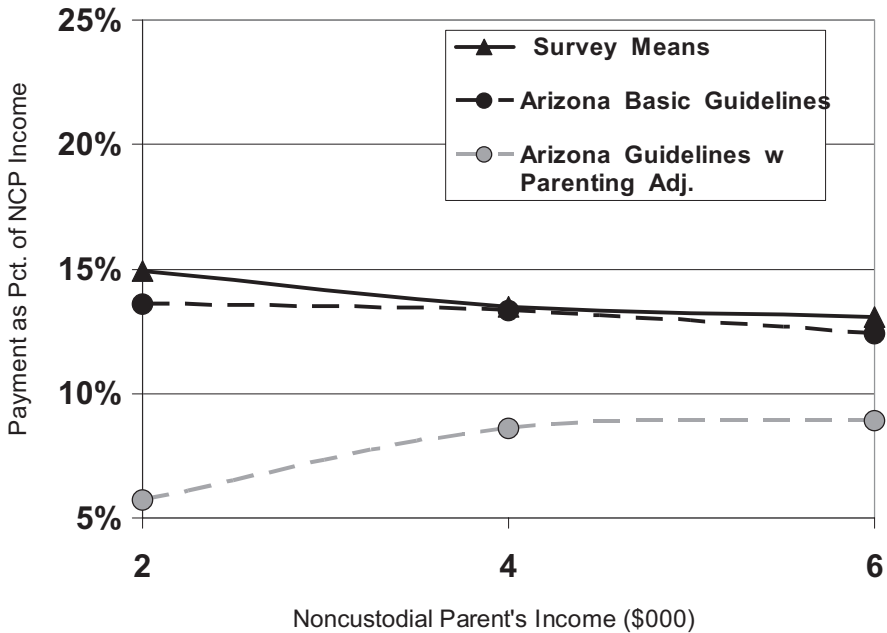b. When Custodial Parent Take-Home Pay is $3,000 Monthly
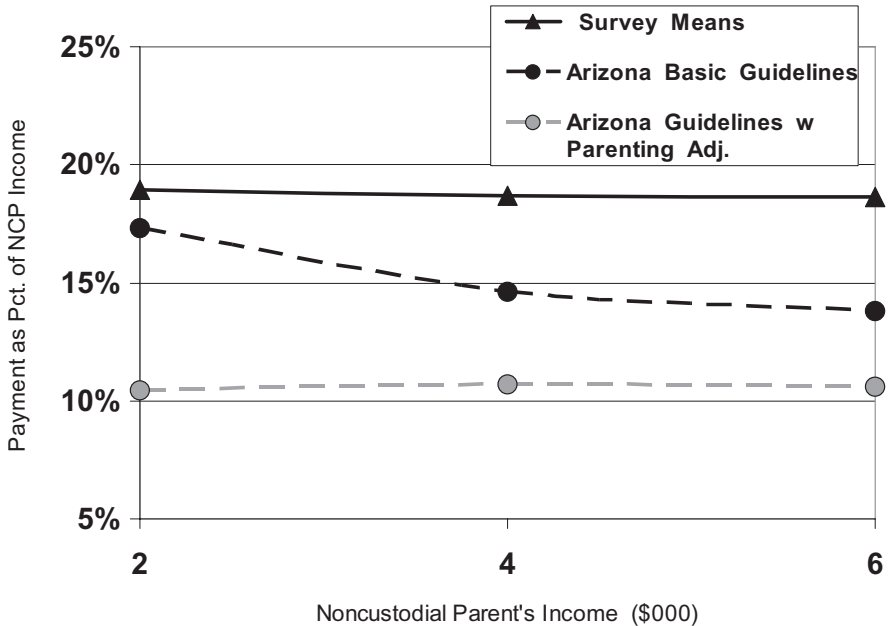
Monthly child support payments owed by noncustodial parent (NCP) to custodial parent with one child and monthly take-home pay of $3,000, (a) as set by Arizona Child Support Guidelines in effect during 2008, and (b) as favored by respondents in survey of Pima County, Arizona jury pool ($N=262$). Survey amounts are the HLM fitted values reported in Table 2; Arizona guide-line amounts calculated both with and without the allowed adjustment for the amount of parenting time awarded to NCP.

are thus more typical of income shares states generally, and contrast with the nearly flat rates favored by our respondents. These results are summarized in

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The Arizona visitation adjustment is calculated in a three-step process. One first counts the number of days of visitation, following the method set forth in the guidelines. One then consults a table in the guidelines to find the proportion associated with that number of days of visitation. For cases with 88 to 115 days of visitation—the most common amount, and the one applied to the calculation here and in Figure 6—that proportion is 0.161. One then applies that propor-tion to the *total* parental support obligation—the number generated by the declining rates exhibited in Figure 1—to arrive at a dollar value for the visitation adjustment. That dollar value is then subtracted from the support obligation otherwise calculated. This produces the largest dollar adjustments in the support obligation, relative to parental income, in those cases in which the parents have the lowest total income, effectively flattening the support rates.

Figure 6:   Continued

c. When Custodial Parent Take-Home Pay is $5,000 Monthly.

Noncustodial Parent's Income ($000)

Monthly child support payments owed by noncustodial parent (NCP) to custodial parent with one child and monthly take-home pay of $5,000, (a) as set by Arizona Child Support Guidelines in effect during 2008, and (b) as favored by respondents in survey of Pima County, Arizona jury pool ($N = 262$). Survey amounts are the HLM fitted values reported in Table 2; Arizona guideline amounts are calculated both with and without the allowed adjustment for the amount of parenting time awarded to NCP.

Table 4, which focuses on the more common cases, charted in Figures 6a and 6b. Whether our respondents' nearly flat rates would be replicated is an important question.

Table 4 compares the rates (as a percentage of obligor net income) favored by our respondents with the normal rate structure (across the same income ranges) found in current income shares or POOI guidelines. It suggests that our respondents believe in a rate structure, as a percentage of net income, that is different from *either* the single-rate POOI guidelines and the regressive rate structure of most income shares guidelines. They do favor a support rate, as a percentage of obligor's net income, that declines as custodial parent income rises, and their preferred rate of decline is in fact faster than the typical income shares guideline. However, they *also* believe

Table 4:   Comparison of How Support Rates (Support Amount as Percentage of Obligor Net Income) Change as Parental Income Changes, for Three Support Systems

System	As CP Income Rises	As NCP Income Rises
POOI	Rate Flat	Rate Flat
Income shares	Rate Goes Down Slowly	Rate Goes Down
Survey respondents	Rate Goes Down Quickly	Rate Flat

POOI = Percentage of obligor income; CP Income = custodial parent income; NCP Income = noncustodial parent income.

that changes in the obligor's take-home pay should have little or no effect on this support *rate*. Our male and female respondents *share* these beliefs about the appropriate rate *structure*, even though, as previously noted, women favor higher support *rates* than men. (For any given custodial parent income, women, like men, favored a support rate that was flat across obligor incomes, but three percentage points higher than the male rate.) These findings are another reflection of the coherent arbitrariness of our respondents' views: although men and women start out with different support amounts, they adjust those amounts quite similarly to one another when told of a change in either parent's income.

IV. Discussion

Legal and governmental institutions often ask people to express nonmarket concerns using the dollar metric, and these judgments have enormous consequences. In contingent valuation surveys, ordinary citizens are asked to quantify their willingness to pay for environmental goods like clean air or the spotted owl. In civil trials, juries are asked to assess pain-and-suffering damages, or to use punitive damages to achieve retribution and deterrence. States ask judges and economic consultants to determine how each parent should contribute to child support payments. There are three sets of reasons to worry about whether people can make such judgments in a meaningful way (see MacCoun et al. 2008). First, people are being asked to make multidimensional judgments (across stakeholders and dimensions of evaluation) on a unidimensional scale (see Robbennolt et al. 2003). Second, the dollar metric is known to be vulnerable to a host of psychometric (Tourangeau et al. 2000) and cognitive (Tversky & Kahneman 1974) biasing factors. And,

finally, society lacks an explicit market for pricing these judgments in part because many people find such pricing distasteful or even abhorrent (Fiske & Tetlock 1997).

Nevertheless, our study joins a growing body of evidence that such dollar judgments do carry valid signals amidst the bias and the noise (Ariely et al. 2003; Sunstein et al. 2002). Kahneman and colleagues (Kahneman et al. 1998, 1999; Sunstein et al. 1998) argue that citizens have great difficulty making judgments on a dollar scale because the scale lacks clear anchors— citizens may agree that a corporation deserves punishment or that a species deserves preservation, but have radically different intuitions about how that deserving-ness translates into an absolute dollar amount. Our data bear this out. We indeed find considerable variance around our respondents' mean judgments. Yet we also find that citizens respond in predictable ways to changes in the situation (specifically, the income level of each parent)— both across respondents and across judgments made by a respondent. We reconcile these observations using the principle of "coherent arbitrariness" (Ariely et al. 2003): the judgments seem arbitrary in an absolute sense because there is enormous variability around the mean judgments such that randomly selected decisionmakers might recommend radically different support amounts, but within a set of judgments, there is coherence in a relative, ordinal sense; values vary meaningfully as a function of case characteristics. In that sense, one can say that our respondents follow a predictable and coherent path in their intuitive lawmaking. More importantly for policymakers, that path is consistent with some features of state guidelines, although inconsistent with others.

The history of child support guidelines policy has played out on two different levels. On one level there are academic and political debates about the appropriate levels of support, which often become contentious battles between partisans on either side of the gender gap.[27] On the other level, the actual writing of support guidelines has been dominated by technical consultants who do not appear to engage in these disputes over tradeoffs between maternal and paternal households. These two levels are in tension because each casts the policy issue in terms that do not admit the relevance

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[27]Women's groups became engaged in the battle early on. See, for example, Women's Legal Defense Fund (1987). Many faulted income shares guidelines for falling short of what became known as the equal living standard principle, originally advocated in Judith Cassetty (1978). More recently, income shares guidelines have been attacked by fathers' advocates as unfair to support obligors. See, for example, Rogers and Bieniewicz (2004) and Henry (2004).

of the other, but they may nonetheless push the political outcome in the same direction because the more contentious the potential debate, the more appealing the technocratic solution may seem to the relevant state officials. Of course, both value judgments and technical insight are required if rational lawmaking is the goal. No technocratic solution can avoid the need to make tradeoffs, and no sensible discussion of the appropriate tradeoffs can be had without sound information about the relative economic outcomes of the two households.

Our data suggest cautious optimism about the possibility of such a productive recasting of the debate over child support levels. We must be cautious because we cannot assume judges and economic consultants have more defensible intuitions than laypeople about how to express societal goals on the dollar scale (Robbennolt 2005). But there are also grounds for optimism. In a companion paper (MacCoun et al. 2008), we present evidence that the variability in the absolute value of citizen judgments can be reduced by providing them with various quantitative anchoring formats. The normative and political challenge is to find criteria for anchoring the judgments that can be articulated and defended to lawmakers and citizens. Such anchors might be found in studies of the minimal household income required to meet each of a series of living-standard benchmarks (avoid poverty, provide children with a reasonable chance for successful development, provide children with the median U.S. household living standards, etc.).

Once such anchors are established, the consistency of our respondents' relative valuations offers hope for some consensus among even diverse groups of citizens on how to build a set of guidelines from them. After all, variations in most of our demographic variables, such as age, marital status, household income, and having children of their own, did not alter the guidelines our respondents provided. Two demographic variables, however, did matter: their gender and their education level. Females called for higher support amounts overall than did males. These differences between the responses of men and women are certainly not surprising. Eisenberg (1983) has drawn a distinction between neutral areas of law and nonneutral areas. In neutral areas, people do not necessarily imagine themselves as likely being on one side or the other of potential disputes that might arise. In thinking abstractly about alternative rules of contract law, for example, people usually have little reason to see themselves in the position of the person seeking to enforce an agreement, as opposed to the person defending against such an enforcement claim. Family law, by contrast, is not neutral in this sense. Men

and women *are* likely to imagine themselves in different positions with respect to the law's possible application to them. Thirty percent of our respondents had experience with the child support system themselves, and nearly all those who were support obligors were men, while nearly all who were obligees were women. Many of the remaining men and women also seem likely to see the issues through the eyes of obligor and obligee, respectively. But despite these gender differences, both men and women displayed the same basic pattern shown in Figures 2 and 3 (three distinct upward sloping fanning lines) and Figures 6a, 6b, and 6c (flat percentages across obligor incomes).

Child support may be nonneutral with respect to gender, but it is hard to argue that it is nonneutral with respect to education, such that highly educated respondents envision themselves as obligees, and less educated respondents more readily identify as obligors, as a way of explaining the education effect in Figure 4. Instead, it is more plausible to speculate that more highly educated respondents simply believe more child support (about 3 percent more, as a percentage of obligor's income) is needed to support a child than do their more poorly educated counterparts. But again, the two groups' basic pattern consists of three distinct upward sloping fanning lines.

The coherence of our respondents' relative support amounts, and how those coherent patterns compare to those of current guidelines systems, is in many ways more important and more interesting than the arbitrary variation in their absolute values. Our respondents all concur that obligors should pay substantially more child support the less the custodial parent's income, and thus firmly reject both the POOI system, which makes no adjustment, and incomes shares, which typically makes a smaller adjustment for declining custodial parent income. They also believe that for any given custodial parent income, the higher-earning obligor should pay a support amount equal to a unchanging percentage of his net income, as his income rises, rather than a declining percentage. They thus reject both POOI and the usual income shares pattern, appearing instead to prefer a third system.

These features combined suggest support for what one of us has called the "gross disparity principle"—the principle that when the support obligor earns more than the custodial household, the support amount should ensure that the living standard of the custodial household is not "grossly disparate" to the obligor's living standard (Ellman & Ellman 2008). Our results indicate that while individuals vary in the magnitude of dispar-

ity they believe acceptable, they make similar adjustments in support amounts to maintain some consistency in that living-standard gap across cases. They all require obligors to pay more when the custodial parent earns less, and they require higher-income obligors to share the same *percentage* of their net income with the custodial household as lower-income obligors. We would see a different pattern if our respondents rejected a gross disparity principle and instead favored a minimum support principle—a principle that child support should be compelled only to the extent necessary to ensure the child some minimal living standard. The support amounts favored by such hypothetical respondents would, at any given level of custodial parent income, decline (as a percentage of obligor income) as obligor income increased.

The fact that our respondents favor a gross disparity principle over a minimum support principle should be an important insight for policymakers constructing support guidelines, especially as this feature of their response varies very little from respondent to respondent and does *not* vary with gender. Of course, our respondents' commitment to a gross disparity principle might not persist across higher obligor income levels, a question we hope to investigate in a future study.

The comparison of our respondents' mean support amounts with those provided by the net income Iowa guidelines is also interesting. Even though the standard errors of these means are high, the mean for the middle cell of the matrix matches precisely the very typical Iowa support amount. It is worth looking at the systematic patterns we found in our respondents' relative departures from this middle-cell support amount, especially given the coherence of our respondents' *relative* support values. Our respondents' preferred child support amounts were more responsive to the custodial parent's income than were this typical income shares state's guidelines. That is, for high-income custodial parents, our respondents systematically preferred *lower* support amounts than those set by the Iowa guidelines, while systematically favoring *higher* support amounts than the Iowa guidelines for low-income custodial parents.

If we focus first on the lower-income custodial parents, we also see that the greater the parental income disparity, the greater is the difference between the Iowa support amount and the higher amount favored by our respondents. This pattern could be interpreted as further evidence of our respondents' commitment to the gross disparity principle. That principle is largely inapplicable, however, to the case of the high-income custodial parent, who is the higher earner in two of the three scenarios we gave our

respondents. Requiring lower support amounts than does Iowa for high CP income cases is consistent, however, with another principle that Ellman and Ellman suggest, one they argue is particularly relevant when the obligor earns less than the custodial parent. This is the "dual obligation principle." It vindicates the belief that both parents have a support obligation, and thus explains why we require support even when the custodial household alone has enough money to provide comfortably for the child. But the dual obligation principle does not itself help identify the appropriate level of support, and can be satisfied even by nominal amounts when custodial household income is high enough. So to the extent the dual obligation principle alone animates our respondents in these high CP income cases, we would not expect high support amounts.

If tradeoffs between the two parental households are unavoidable in setting child support amounts, it would seem that choosing the appropriate tradeoff is a policy question that ought to attract the attention of the state officials charged with performing the federally required quadrennial review of their support guidelines. Nonetheless, reluctance to engage that question overtly is perhaps understandable. Such officials may feel themselves without clear enough standards to use in defending the appropriateness of any chosen set of tradeoffs. Insights into the public's intuitions about such tradeoffs can provide at least one important standard on which they can rely, along with others. Our methodology offers advantages in identifying those intuitions. Our use of the jury pool allowed low-cost access to a large cross-section of the citizenry of the region. Our use of written questionnaires, rather than a telephone survey, allowed for within-respondent comparisons of an entire grid of income scenarios, mimicking the guideline table. Our use of well-fitting hierarchical linear models allowed us to accurately model the numeric responses, as well as to relate each respondent's grid characteristics to various demographic characteristics. We expect to continue to exploit these advantages in subsequent work on this topic.

In sum, knowledge of citizen views has potential for improving child support policy making by allowing a more explicit, as well as more coherent, consideration of the tradeoffs between parental households that any child support system necessarily embraces. We found rather clear patterns in our respondents' intuitions, patterns that support a system of guidelines that differs in important respects from extant ones. This information therefore should be of considerable interest to the review committees in each state as they revise and update their systems.

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