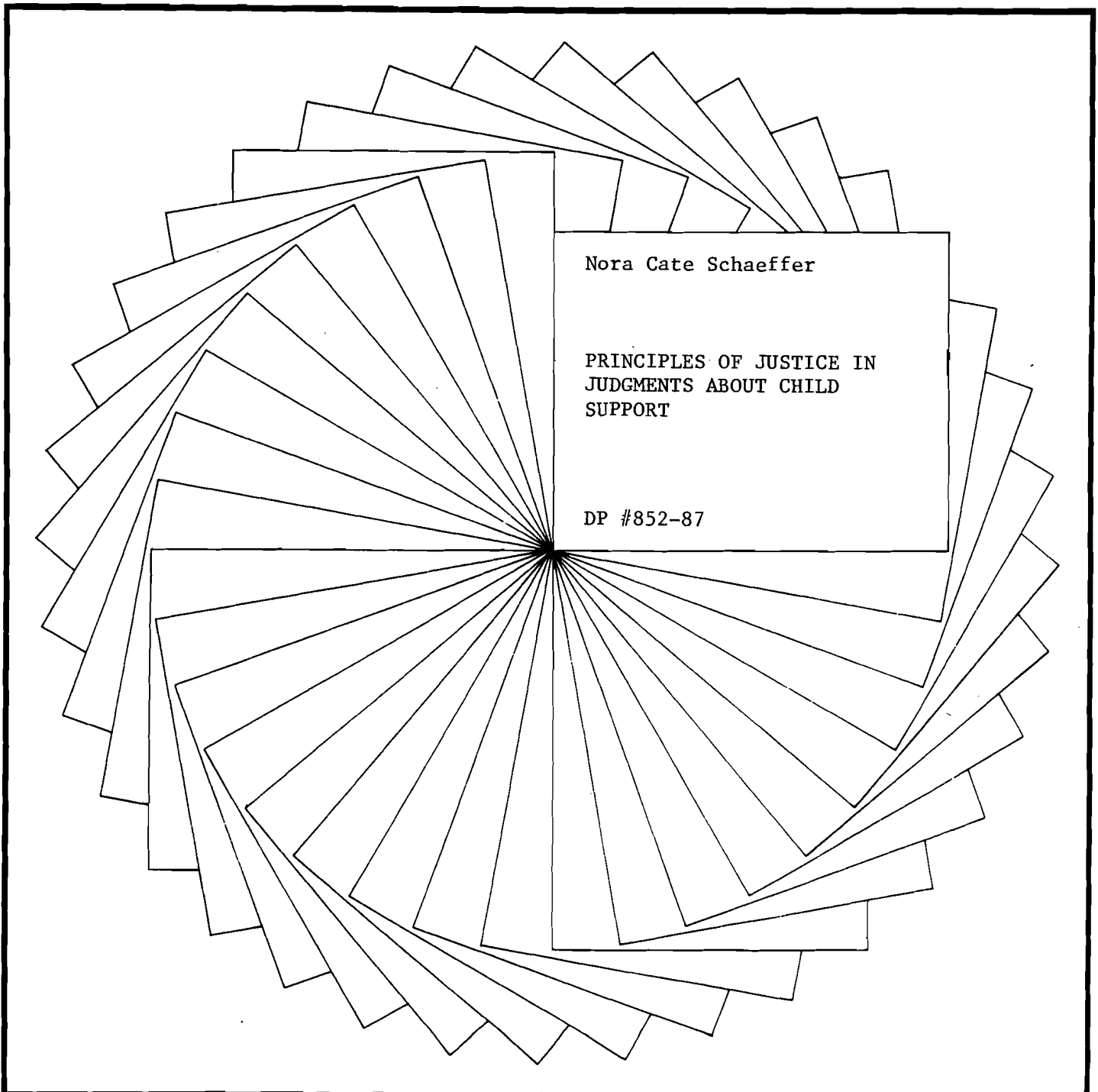




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PRINCIPLES OF JUSTICE IN
JUDGMENTS ABOUT CHILD
SUPPORT

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PRINCIPLES OF JUSTICE IN JUDGMENTS ABOUT CHILD SUPPORT

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Abstract

The study of the justice principles used in making judgments of child support contributes to understanding of an important public issue and to the study of justice. Although the attention given to questions about child support has increased with the number of families affected, how citizens reach judgments about what the amount of a child support award should be has not been studied. Studying these judgments provides an opportunity to extend justice theories, which have often focused on allocations of positive goods such as income. In contrast, making a child support award involves allocating costs that are not punishments. Because suggesting a child support award requires both deciding the amount of the cost to be divided between parents and making the division, an analysis of child support judgments must distinguish allocation rules and their operands. Approximately 1000 respondents in a 1985 telephone survey in Wisconsin were each presented with three vignettes describing a family situation and were asked how much they thought the award should be in each situation. Analysis of these vignette data suggests that respondents assume that the cost of children increases with their parents' income, and that parents' contributions should be proportional to their resources. This "proportional contribution-variable need" child support system considers the needs of both parents and children, but may not serve other important policy goals.

PRINCIPLES OF JUSTICE IN JUDGMENTS ABOUT CHILD SUPPORT

INTRODUCTION

Child support, that is, support payments made to children by a parent not living with them, raises questions of justice in an important practical arena. Variation in the way child support awards are made and in meeting child support obligations has been of concern to policymakers, academics, and private individuals (see, for example, Cassetty 1983). Of approximately 8.8 million mothers with children potentially eligible for child support in 1984, for example, 39 percent had not been awarded any child support (U.S. Bureau of the Census 1987). Of those with awards, a large majority receive payments irregularly if at all (U.S. Bureau of the Census 1987). Recent legislation has responded to these concerns about child support awards and collections. Legislative reform of the child support system includes the Child Support Enforcement Amendments of 1984 (P.L. 98-378), which require that all states develop numeric guidelines for setting child support awards by October 1987 and withhold child support payments from the wages of those who are one month behind in child support payments (Stuart 1986; Williams 1986).¹

Child support awards implement principles of justice in ordinary lives. The principles used to make just allocations have been identified by many researchers, who have often focused on judgments about income and wages in laboratory experiments (Adams 1965; Deutsch 1975; 1985; Eckhoff 1974; Homans 1961; 1974; Lerner, Miller, and Holmes 1976; Leventhal 1976; Mikula 1980; Schwinger 1980; Walster, Walster, and Berscheid 1978). The factors affecting an individual's preference for one allocation rule over

another have also been studied extensively (see recent reviews in Cohen and Greenberg 1982, and Cook and Hegtvedt 1983). In the present paper I link theories about justice principles to public responses to child support issues. This research examines individuals' beliefs about what child support awards should be under different circumstances and the justice principles underlying those beliefs.

An understanding of beliefs about child support illuminates important public issues. The child support reforms currently under way will affect many lives. Because of changes in divorce and marriage patterns, adults are increasingly likely to have been involved in child support arrangements or to have knowledge of such arrangements. This experience provides them with opportunities to consider the competing interests involved in decisions about child support and to apply general principles of justice to judgments about what was until recently, but is no longer, a novel situation. Either by design or accident, the beliefs about justice embodied in reforms may differ from the beliefs most citizens hold. Reforms are more likely to be accepted if they incorporate common beliefs about what is just or if deviations from these beliefs are explained and justified. Compliance with child support obligations may be greater when the obligation is perceived as fair.

Furthermore, beliefs about child support differ in important ways from other beliefs about justice that have been studied. Allocating child support obligations involves allocating not rewards, but responsibilities expressed as contributions. Although child support awards may be made punitively, they are not inherently so. Child support thus presents a case in which costs are allocated in a way that should not

involve punishment or revenge.² The situations within which the need for child support arises are also structurally complex: there are at least three interested parties (two parents and a child) with some competing and some convergent interests. Finally, suggesting a child support award usually entails two decisions: the amount of the cost to be divided between parents and how the division should be made. Analyzing beliefs about child support provides an opportunity to apply and extend previous investigations of justice principles.

JUSTICE PRINCIPLES IN JUDGMENTS ABOUT CHILD SUPPORT AWARDS

The principal interested parties in a child support judgment are the parent who lives with the children (the custodial parent), the parent who does not (the noncustodial parent), and the children, on whose behalf the claim is made.³ A custodial mother contributes to the children's support because she and the children live together, and all household members benefit from shared goods, such as kitchens and cars. Determining how much the custodial parent spends on the children is further complicated because the custodial parent may herself benefit from money spent on the children. She may enjoy shared goods, like movies, that she buys for the children; and if the father spends his money on the children, the mother needs to spend less of her own. In contrast to the contributions of the custodial parent, those of the noncustodial parent are relatively easy to identify. The interests of at least three parties are all focused on the noncustodial parent's income, a scarce resource that is inadequate to satisfy all legitimate claims. Judgments about child support may seek to maximize benefits or minimize costs for all or for a favored party.

In this study, making a judgment about a child support award means deciding how much a noncustodial parent should pay each month toward the support of his children. Because these judgments, referred to as suggested awards, are about what the noncustodial parent should pay, I assume that these judgments incorporate beliefs about what is just, based on justice principles.⁴ Although the vignette technique used in this research is similar to that used in studies of another "concrete social outcome," the income distribution (Shepelak and Alwin 1986, p. 30), the focus here is not on the the sense of injustice (Jasso 1978; Törnblom 1977), nor on the comparative processes that shape fairness judgments (Berger et al. 1972; Alwin 1987). Instead, the situational factors that determine suggested child support awards are used to make inferences about justice principles that are implemented in suggesting an award (Jasso and Rossi 1977). Previous discussions provide the foundation for the analysis of justice principles used here, but I suggest some extensions to accommodate important features of child support decisions.

A basic distinction in theories of justice is that between allocation and reciprocation. The theoretical framework used here focuses on issues of allocation rather than reciprocation in child support (Eckhoff 1974). In reciprocation, two parties trade "values," things that are positively or negatively valued. In an allocation, a value is apportioned among two or more parties in a set of connected transfers; because recipients each receive a share of some whole, the "equality" of their outcomes can be compared in evaluating the justice of the allocation (Eckhoff 1974, pp. 5, 32-35, 205).⁵ Many situations include elements of both reciprocation and allocation. Wages, for example, are usually considered part of a

reciprocation between worker and employer, but can also be seen as a reward distributed by social processes. Similarly, an analysis of the child support situation can emphasize either reciprocation or allocation.⁶ This research views child support decisions as allocations rather than reciprocation, because the data analyzed here are judgments made by respondents, essentially observers whose principal task is to allocate costs (contributions or forgone standard of living) among parents and children.

Justice Procedures: Rules and Operands

Like other justice decisions, decisions about how much child support a father should pay involve applying an allocation rule and identifying operands for the procedure. Operands are quantities that the allocation rule operates on; two can be distinguished. The material operand is the quantity that the allocation rule divides up. An allocation rule may require that the material operand be divided up so that the resulting distribution of shares reflects the distribution of some other value, such as merit. This other value is the procedural operand; the allocation operates on this quantity, but does not divide it up. Instead, the procedural operand provides information required by the allocation rule; if, for example, rewards are to be distributed according to merit, merit must appear in the calculation of rewards.⁷ For example, if a pie is divided so that the child who completed the largest number of weekly household chores gets the largest piece, then the pie is the material operand, the contribution to weekly household chores is the procedural operand, and the allocation rule is a rank order rule.⁸

These distinctions derive from previous discussions, but the development here makes a stronger distinction between rules and operands and among different classes of operands, to facilitate analysis of judgments about child support. According to the analysis presented here, for example, the statement that three important values on which allocations are based are equality, merit, and need (Deutsch 1975) confounds allocation rules and procedural operands. The "values" need and merit can be thought of as expressing desired distributional outcomes: if a process allocates money according to need (or merit), in the long run the distribution of money will mirror the distribution of need (or merit).⁹ In the terminology used here, need and merit are procedural operands. An allocation rule can operate on them, but they do not require a specific allocation rule. In contrast, objective "equality" is an allocation rule, but one that by definition does not require a procedural operand, since shares are all the same size and do not depend on other characteristics of the recipient.

Eckhoff's more complete analysis of allocation rules presupposes the distinction between rules and procedural operands (1974). His allocation rules or "principles of equality" are the following: equal amounts to each; subjective equality (the outcome feels equal); relative equality (equity or proportional equality); rank order equality; and equal opportunity. The first and last of these rules have no procedural operands; they ignore characteristics of the recipients of the allocation. The other rules operate on some characteristic of recipients of the allocation: need, fitness, desert, status, position.¹⁰ In other words, a characteristic of the recipient is a kind of procedural operand used by

some allocation rules. Some combinations of allocation rule and procedural operand are more likely than others. For example, an allocation that operates on need is more likely to use subjective equality than equal opportunity as an allocation rule (Eckhoff 1974, p. 39).¹¹

Furthermore, characteristics of recipients may be incorporated in normative formulations that are used to make a justice claim, such as, "the neediest should be served first."

The analysis of operands in previous discussions must be extended in the case of child support. First, procedural operands cannot be limited to characteristics of recipients narrowly defined. There is no single recipient of the allocations involved in setting child support awards: parents receive obligations and children receive support. Furthermore, the parents and children differ in which of their characteristics are relevant. More important, an analysis of decisions about how much a non-custodial parent should pay must consider material operands, because a person suggesting an award may be implicitly dividing something, such as how much the children need, between the parents. In most previous research on allocation decisions either the quantity to be allocated is fixed in advance, for example by an experimenter, or the quantity has already been allocated, as in the case of income, and the allocation is being evaluated. As a result, subjects or respondents do not usually make decisions about the material operand for an allocation. In the case of child support, however, determining what is to be allocated between parents is itself subject to justice rules. Decisions about the material operand, the amount to be divided between parents, are central.

Child Support Awards as Allocations

A decision about how much child support should be paid has several components, each of which involves a selection. The most important components are the following: why the noncustodial parent should contribute (the justification for the claim); what, if anything, should be divided between parents (the material operand); what characteristics of the parents, if any, should be considered (the procedural operand); and how the allocation should be made (the allocation rule).¹² I simplify the discussion of these selections in two ways. First, because selecting a justification for the child support claim and a material operand are closely related, I discuss them together; the focus, however, is on the selection of a material operand. Second, the procedural operand that dominates discussions of child support awards is parental resources, especially income. Using this procedural operand results in considering parental resources when assigning child support to parents. For this reason, I assume that all allocation rules that require a procedural operand use parental resources, and I do not discuss the selection of a procedural operand separately.

The usual material operands are the children's needs and the parents' resources. If the operand is need, the amount a child deserves is generally conceived of as equal to the cost of raising the child.¹³ There are two methods for estimating an obligation based on need. In the first, the total amount of support is determined by what the child requires to remain alive or to enjoy some minimum standard of living, that is, the total obligation is a minimum fixed need that roughly applies to every child. In the second, the total obligation is the

amount the child needs, but that amount varies with the parents' social position and can be thought of as a relatively constant proportion of parental income.¹⁴ In this sense, a middle-class child "needs" more than a poor child. The second material operand is parental resources. An allocation rule operates directly on parental resources if, for example, the award is a fixed proportion of the income of the noncustodial parent. An obligation based on fixed or variable need implies that there is a total obligation, which is allocated between the custodial and non-custodial parents. Basing the obligation solely on parental resources circumvents the problem of determining what the child needs.

The choice of material operand and the justification of the claim for child support are closely connected. The two principal justifications for child support claims are dependency or need and family tie. Dependency is more common; once children are grown, need is diminished and a need-based parental obligation to support is removed. Claims based solely on dependency imply that the material operand for the allocation rule should be the amount the child needs, with that need conceived of as a fixed amount. Using family ties as a justification implies that children are entitled to support for a given time regardless of need because of the parent-child tie and that economic responsibilities should reinforce this tie because both the child and society benefit from even token support. Claims justified by referring solely to family ties are consistent with allocation rules that operate only on the noncustodial parent's income. Basing the amount the children need on parental resources combines both justifications: dependency and family tie.

The final selection is an allocation rule, which in this case is a contribution rule. The contribution rule specifies how much of the total obligation the noncustodial parent should contribute. Five principal rules can be derived from discussions such as those summarized earlier and from proposals for child support systems.

The child's needs are the material operand for three of the rules. A remainder rule (1) specifies that the noncustodial parent pays whatever expenses the custodial parent cannot. Such a rule could be justified by stressing that custodial parents enjoy most of the pleasures of parenting and, because they may be closer to the children, can expect greater returns from the relationship later in life. Parents can also be required to make equal contributions to the total amount the child needs; this equality rule (2) could be justified by stressing that the parents are equally obligated. The amount that the child needs can also be divided between parents in some exact or rough (such as rank order) proportion to their resources; such a proportional rule (3) balances parents' obligation to the child against hardship to the parents.

In contrast, two rules operate directly on parental income without first calculating the amount the child needs. The income-equalization rule (4) would transfer income between the custodial and noncustodial parents so that the income per person was roughly equal in the two households. Income-equalization operates only on parental resources and the number of people in both parental households. The reason underlying this rule is that children are entitled to benefits of the family in which they originated, that the standard of living of children should suffer as little as possible due to their parents' decision to separate (Cassetty

and Douthitt 1984, p. 8; Sawhill 1983, pp. 80-81). A final rule, income-sharing (5), operates exclusively on the income of the noncustodial parent. Income-sharing awards a percentage of the noncustodial parent's income to the children. The basis for this rule is that every parent incurs the obligation to share his or her income with his or her children (Garfinkel 1985, p. 124). This rule implies that the obligation to support is not mitigated if the child's need or the parent's income is low and is not affected by other resources available to the child.

Table 1 cross-classifies the contribution rules by the types of material operand. Considering this cross-classification reveals that not all combinations of operand and rule are mutually consistent. Some consistencies are established by the contribution rules, which differ in the operands they require. By definition, the remainder, equal contributions, and proportional contribution rules have need as their material operand; similarly, by definition the income-equalization and income-sharing rules operate on parental resources. The proportional contribution rule is unique in that it is consistent with two material operands: fixed need and variable need. The remainder and equal contribution rules are not compatible with a variable need operand; if need were calculated by considering the resources of both parents, these rules would have the parent who is less well off contribute to a "need" that is inflated by the resources of the more affluent parent. Each of the six consistent combinations of allocation rule and material operand indicated in Table 1 constitutes a child support system, although a highly simplified system.¹⁵ Because of these structured consistencies, propositions

Table 1
Child Support Systems

Material Operand	Fixed Need	Variable Need (Need and Resources)	Parental Resources
<u>Contribution Rule</u>			
Remainder	x		
Equal	x		
Proportional	x	x	
Income-equalization			x
Income-sharing			x

Note: "x" indicates a consistent child support system.

derived from the relationships outlined in Table 1 can be used to identify the child support system underlying people's beliefs about child support.

METHODS AND SAMPLE

The data reported here are from the Wisconsin Survey of Children, Incomes, and Program Participation (CHIPPS) conducted by telephone in the spring of 1985. The survey used a random digit dialing design to sample Wisconsin households.¹⁶ If there was a custodial or noncustodial parent in the household, that parent was selected as respondent; otherwise one of the principal earners in the household was selected. The data analyzed here are individual rather than household characteristics. Details of the sample design can be found in MacDonald (1986). Altogether, the CHIPPS cross-section includes 1073 households.

Each respondent was presented with three vignettes embedded in a larger questionnaire. The exact wording of the vignettes was as follows:

The next questions are about a different subject. Frequently when a father does not live with his children and their mother, he makes regular payments to their mother for support of the children.

I am going to describe some situations to you in which children live with their mother and the father lives apart from them. For each situation, I will ask you how much money, if any, you think the father should contribute each month for the support of his children.

Here is the (first/next) situation:

A father who (HAS STARTED A NEW FAMILY, ALSO/HAS NOT REMARRIED) has (1/2/3) young child(ren) who live(s) with their mother. The mother (HAS REMARRIED/HAS NOT REMARRIED) and (IS UNEMPLOYED/MAKES \$500 A MONTH [BEFORE/AFTER] TAXES/MAKES \$1500 A MONTH [BEFORE/AFTER] TAXES). The father makes (\$500/\$1000/\$2000/\$3000/\$5000) a month (BEFORE/AFTER) taxes.

How much, if anything, should the father contribute each month for the support of his children in this situation?

The vignettes included six dimensions or variables: the number of children, whether the vignettes described before-tax or after-tax income,¹⁷ and the marital status and income of each parent. In the text of the vignette a phrase in full capitals is the value of a variable. The values each dimension could take are listed within parentheses and square brackets. This research uses the "factorial survey" approach (Rossi and Nock 1982), so that all the values in a dimension were generated randomly with equal probabilities. For example, approximately half the vignettes stated that the mother had remarried and half stated that she had not. Because of the way in which values were generated, dimensions are not correlated with each other or respondent characteristics, except for chance variation.

The vignettes incorporate a structural assumption that there are three parties to a child support situation--the custodial parent, the noncustodial parent, and the children--and that awards involve trade-offs among these three parties. Because these items are time-consuming to administer over the telephone and may be confusing or fatiguing for respondents, the language of the vignette and the selection of dimensions incorporate simplifying assumptions, which may restrict the generalizability of the results. For example, the vignettes did not explicitly give government a role in supporting children, and respondents were sometimes required to decide among a number of claimants to minimal resources without being able to specify whether or not they assumed that the government would supplement an award. The vignettes describe only the most common situation, in which the mother is the custodial parent; judgments about contributions of noncustodial mothers may differ considerably from the judgments given in this study. When the vignette

stated that a parent had remarried, the new spouse's income was not described, to avoid presenting a third income.

Each of 1003 respondents was presented with three vignettes, also called factorial objects, to judge. In the analyses presented below, approximately 9 percent of these objects are omitted because of nonresponse. Of the respondents who answered the vignettes: 4 percent are custodial parents and 2 percent noncustodial parents; the average age is 44 years; the average household income is \$27,970; 67 percent are female; 45 percent have more than a high school education; and 41 percent are parents.

PREDICTIONS FROM CHILD SUPPORT SYSTEMS

The earlier discussion described six child support systems, that is, six consistent combinations of allocation rule and material operand. Each of these systems represents a model that can be used to predict respondent behavior when the model holds. Each system predicts what factors respondents will consider when suggesting awards. These predictions differ across systems. By noting what factors respondents take into account in setting a child support award, one can infer the child support system implicit in their decisions. I use each of the six child support systems to predict how the respondents will take the following into account: father's income, mother's income, father's remarriage, and mother's remarriage. Because remarriage affects resources, the predictions about remarriage are largely parallel to the predictions about income and are described in less detail. The predictions I present are stated in terms of effects of variables on suggested awards controlling

for other vignette dimensions and selected respondent characteristics (net effects).

Father's Income

Because of the inherent limits that it establishes, the income of the father is expected to be the largest influence on the suggested awards. The first proposition describes inferences about which child support system generates awards based on the relationship between father's income and suggested awards. The six systems suggest the following predictions about how awards vary with an increase in father's income:

Remainder. The absolute amount of the award remains constant. This is because the father's contribution is determined only by the amount of the children's fixed need and the mother's income.

Equal contributions. The absolute amount of the award remains constant, because only the amount of the children's fixed need is important in setting awards.

Proportional contributions-fixed need. The absolute amount of the award increases with father's income up to a point. Because the amount of the children's fixed need sets a ceiling on the amount of the award, once the ceiling is reached, the award remains constant. Thus, the total award should decline rapidly as a percentage of father's income, even at moderate levels of the father's income.

Proportional contributions-variable need. Both the children's needs and the father's contributions increase with father's income. While the absolute amount of the award thus increases with father's income, the award could be a decreasing, constant, or increasing proportion of father's income, depending on the mother's income.

Income-equalization. This system specifies that the absolute amount of the award increases with father's income in such a way that the award is an increasing proportion of father's income. This can be seen by considering the simple case of a mother who makes \$1500 per month and cares for 1 child. Under the simplest income-equalization scheme, if the father makes \$2000 per month, the award is \$833 or 42 percent of his income; if he makes \$5000, the award is \$2833 or 57 percent of his income.

Income-sharing. Income-sharing specifies that the amount of the award increase with father's income, but again, that absolute increase could be a decreasing, constant, or increasing proportion of father's income, depending on the particular system used.

The predictions follow directly from the definitions of the contribution rules. Table 2 summarizes these predictions. Of the four systems that predict an increase in the absolute amount of the award, the award under income-equalization is highest¹⁸ and that under proportional contributions-fixed need is lowest. The relative ranking of the proportional contributions-variable need and the income-sharing systems is not specified.

Mother's Income

The predicted effects of changes in the mother's income on suggested contributions of the father parallel the predictions just made. The consequences of changes in the mother's income are discussed only for the absolute amount of the award; effects on the absolute amount of the award are not distinct from effects on the award as a proportion of father's income when father's income is held constant. With other factors held constant, the systems predict that increasing the mother's income will affect suggested awards in the following ways:

Remainder. The absolute amount of the award decreases. Assuming that all of each dollar the mother earns is dedicated to the children until their fixed needs are met, the award decreases by \$1 for each \$1 increase in the mother's income.

Equal contributions. The absolute amount of the award remains constant, because the award is determined only by the amount of the children's fixed need.

Table 2

Effects of Increases in Parental Income on Suggested Awards
under Different Child Support Systems

Child Support System Allocation Rule (Operand)	Effect of Increase in Income of:		
	Father		Mother
	On Absolute Amount of Award	On Amount of Award as Proportion of Father's Income	On Absolute Amount of Award
1. Remainder (fixed need)	no effect	constant	decrease
2. Equal contributions (fixed need)	no effect	constant	no effect
3. Proportional contributions (fixed need)	increase to need ceiling	sharply declining	decrease
4. Proportional contributions (variable need)	increase	indeterminate	no effect or decrease
5. Income-equalization	increase	increasing	decrease
6. Income-sharing	increase	indeterminate	no effect

Proportional contributions-fixed need. The absolute amount of the award decreases, because the father's proportion of total parental income decreases.

Proportional contributions-variable need. The absolute amount of the award is constant or decreases. The indeterminacy results because proportional contribution rules include both strict proportionality and rough proportionality, such as a rank order rule. Two cases illustrate the possibilities. First, the total need can be a exact fixed proportion of the sum of both parents' incomes; second, total need can be a rough proportion of this sum, so that need is roughly constant for a range of incomes. If need and contributions are both exact proportions of the parents' incomes, then an increase in either income is balanced by an increase in that parent's contribution but does not affect the contribution of the other parent.¹⁹ If need varies with income overall but is constant within specific ranges of parents' incomes, then need can be considered fixed within a range; the pattern described earlier for fixed need would apply within the range.

Income-equalization. The absolute amount of the award decreases, because the father's share of total parental resources decreases.

Income-sharing. The absolute amount of the award is constant. By definition, an income-sharing system uses only the father's income as an operand.

The effects of increases in the mother's income are summarized in Table 2. Following the reasoning given under the discussion of the effects of increases in the father's income, the effects of increases in the mother's income should be much larger under a proportional contributions-fixed need system than under income-equalization.

Remarriage of the Parents

Stepparents are not legally obligated to support their stepchildren. If they were, single parents would present a considerable obligation to a prospective spouse, and someone considering marrying a single parent would have an incentive to cohabit instead (Bruch 1983, p. 126). Even

assuming that respondents also exempt stepparents, remarriage can have indirect effects on resources. The effect of remarriage is positive if it secures additional contributions to common expenses, thus freeing up the custodial or noncustodial parent's own resources.²⁰ The effect is negative if it results in additional claims on the custodial or noncustodial parent's income. Assuming that a new spouse contributes to common expenses in proportion to his or her income, a custodial mother is likely to incur greater benefits from remarriage than a noncustodial father. Furthermore, compared to a custodial mother, a noncustodial father who remarries is more likely to incur new obligations (to stepchildren or a nonworking spouse). Remarriage may bring obligations to new children for either parent, but remarried fathers are more likely than remarried mothers to have the primary financial responsibility for the new children.

Taking the father's remarriage into account in making an award indicates that respondents consider his other obligations; in most cases these other obligations reduce his resources. Taking the mother's remarriage into account indicates that respondents acknowledge her increased resources. If remarriage is considered only as something that affects resources and expendable income, then remarriage of the father should have the same effect as a decrease in income, whereas remarriage of the mother should have the same effect as an increase in income (see Table 2) under the first four systems. For income-equalization, a similar effect may occur, but it occurs because the number of contributors and the number of people to be supported in each household changes with

remarriage (Sawhill 1983). Income-sharing by definition does not consider the resources of the custodial parent, so remarriage of the mother should not affect awards if this system is used. The implications of income-sharing for remarriage of the father are less clear-cut; if obligations are fixed in the order incurred, then the remarriage of the father should not affect the award.

THE STRUCTURE OF JUDGMENTS

The judgment model is a variant of that presented by Rossi and Nock (1982), in which judgments are regressed on vignette dimensions. Their regression model is modified to take into account that the award was zero for 10.2 percent of the vignettes. All answers were transformed to log dollars for analysis. To avoid creating small outliers, answers of 0 were recoded to 20, the smallest observed value, before taking logs.²¹ The tobit model separates the effects of the independent variables on suggested awards into two parts: a linear effect given that the award is greater than the natural log of 20, and a nonlinear effect on the probability that the award is greater than the natural log of 20 (Greene 1986; Maddala 1983). If y_i is the award suggested for the i^{th} vignette, β is a vector of parameters to be estimated, x_i is a vector of determinants of awards, and ε_i is an unobserved error term with mean zero and variance σ^2 then a tobit model is

$$y_i = \beta'x_i + \varepsilon_i \quad \text{if} \quad (\beta'x_i + \varepsilon_i) > \ln(20)$$

and

$$y_i = \ln(20) \quad \text{otherwise.}$$

Table 3 presents the estimated tobit coefficients for the effects of the vignette dimensions represented as dummy variables and selected respondent characteristics on suggested awards.²² The reported standard errors assume simple random sampling.²³ The tobit coefficients express the linear effect of the independent variables in the untruncated population (McDonald and Moffitt 1980, p. 320), taking into account that the probability of making the lowest award is a function of the same variables that determine the value of the award when it is greater than the lowest award. The relative importance of the independent variables and their effects on some continuous latent dependent variable can be described by referring to the tobit coefficients. In contrast, the expected values of the award for various combinations of the independent variables incorporate both the linearity expressed by the tobit coefficient and the nonlinearity introduced by the effect of the independent variables on the probability of being at or above the boundary.²⁴ In this application, decisions about awards at the lowest level of father's income must incorporate trade-offs between his survival needs and those of the children. To the extent that the lower bound is a function of the serious constraints imposed on awards in extreme scarcity, the tobit coefficients can be interpreted as expressing the relationship between the independent variables and awards in the absence of such constraints. The expected values, on the other hand, summarize the awards suggested in the presence of these constraints.

All of the vignette dimensions have substantial effects on suggested awards. It also appears that women propose larger awards than do men, and that there is a tendency, although it is not significant, for older

Table 3

Effects of Vignette Dimensions on Suggested Awards (Tobit Coefficients)

	Coefficient	SE	Exp(b)	Expected Values
Constant	3.952*	.119		
DIMENSIONS				
Father's monthly income				
\$ 500	---	---		\$139
1000	.870*	.066	2.39	\$199
2000	1.576*	.069	4.84	\$355
3000	1.878*	.067	6.54	\$472
5000	2.257*	.064	9.55	\$683
Mother's monthly income				
does not work	---	---		
makes \$500 a month	-.017	.048	.98	
makes \$1500 a month	-.412*	.051	.66	
Father's marital status				
has not remarried	---	---		
has started a new family	-.179*	.042	.84	
Mother's marital status				
has not remarried	---	---		
has remarried	-.417*	.043	.66	
Number of children				
1 young child	---	---		
2 young children	.276*	.052	1.32	
3 young children	.401*	.052	1.49	
RESPONDENT CHARACTERISTICS				
Female	.161*	.043		
High school graduate	.144	.066		
More than high school graduate	.192	.067		
Number of vignettes		2634		

notes continued

Table 3, continued

Notes: Data are from Wisconsin CHIPPS (1985), excluding oversample. The dependent variable is the log of the award expressed in dollars. Answers in percentages were transformed to dollars. The value "20" was added if the value was "0." Categories show the exact wording of the dimension, although the dimensions are not in the order presented. The reference category is shown first for each dimension. For the category dummy variables, the label in the stub of the table indicates the category that was coded 1.

Exp(b) is the exponentiation of the coefficient.

Expected values assume one child, that neither parent has remarried, that the mother is unemployed, and that the respondent is a 43-year-old male high school graduate who did not attend college.

*Coefficient is at least three times its standard error before rounding.

and more educated respondents to suggest higher awards. Exponentiating the coefficients indicates how much the award for that income category is multiplied compared to the reference category, holding other variables constant. The exponentiated coefficients for the vignette dimensions are also presented in Table 3. Compared to the award for 1 child, for example, the award is 1.3 times larger when there are 2 children, and 1.5 times larger when there are 3. Overall, the awards are larger when the father's resources are higher than when they are lower; the awards are larger when the mother's resources are lower.

Parents' Income and Remarriage

The results presented in Table 3 indicate that the award increases with father's income. Considering the effects in the untruncated population, compared to the award made if the father makes \$500 a month, the award is 2.4 times larger when the father's monthly income is \$1000, 4.8 times larger when the father's income is \$2000, 6.5 times larger when the father's income is \$3000, and 9.6 times larger when the father's income is \$5000. The ratio of each income category to the reference category is slightly below the ratio of their suggested awards until \$5000 monthly income is reached, when the pattern reverses. For example, the ratio of \$2000 to \$500 is somewhat lower than 4.8, which is the ratio of the suggested awards for the two income classes as indicated by the exponentiation of the coefficient for the father's income of \$2000; the ratio of \$5000 to \$500 (10) is slightly greater than 9.6, the ratio of the suggested awards for the two income classes.

The expected values, which incorporate the probabilities of being at or above the boundary, present a more strongly regressive pattern. For example, for the case in which neither parent has remarried, there is 1 child, and the mother is unemployed, the expected values of the suggested awards are \$139, \$199, \$355, \$472, and \$683 for the five values of father's income, as shown in Table 3. Thus, the absolute value of the expected value of the suggested award increases dramatically with father's income. Expressing the awards as a percentage of father's income, however, indicates that the pattern of the awards is regressive; the awards correspond to 28, 20, 18, 16, and 14 percent of the father's income. In combination, the tobit coefficients and the expected values suggest that respondents modify an underlying rough proportionality in the relationship between father's income and suggested awards in order to ensure that the survival needs of the children are met when the father's income is very low.

The relationship between father's income and suggested awards can be interpreted by referring to Table 2. The remainder and equal contributions systems, which specify that the award remain constant, receive no support. Because the increase in the absolute value of the awards is substantial throughout the range of father's income examined, it is very unlikely that the awards were generated using a proportional contributions-fixed need system. There is no indication that awards are progressive, so that the pattern is inconsistent with income-equalization. The pattern is most consistent with either a proportional contributions-variable need or an income-sharing system. The effect of father's remarriage, however, although small by comparison with the

effects of income (the award is .84 of the award made if he had not remarried), is to decrease the award. According to the argument made earlier, such an effect is consistent with a proportional contributions-variable need system.

The mother's income and resources also affect the award. A small increase in the mother's income does not appear to have much impact on the amount suggested, but larger increases in income and remarriage both have substantial negative effects on the suggested award. Considering just the tobit coefficients and their effects in the untruncated population, if the mother earns \$500 per month, the award is substantially the same as if she does not work, but the suggested award if the mother earns \$1500 per month is approximately .66 of the award if she is unemployed. These results suggest that an underlying proportionality may obtain for the effects of mother's income as well: multiplying her income by 3 reduces the award by one-third. The range of mother's income used in the vignettes is too restricted to explore this possibility further. The suggested decrease when a custodial mother remarries is comparable to the decrease when she makes \$1500 per month as compared to being unemployed. This decrease suggests that respondents treat part of the award as a contribution to common expenses required to maintain the children in a household at all; since a new spouse necessarily contributes to these expenses, the noncustodial parent need not duplicate that contribution. Overall, the equal contributions-fixed need and income-sharing systems receive no support from the results about mother's income and remarriage. Of the remaining four systems, the pattern observed for mother's resources is consistent with the system that received the strongest support

from the relationship between father's resources and award--the proportional contributions-variable need system.

Other Evidence

In addition to the predictions summarized in Table 2, the vignettes offer other evidence about the system generating suggested awards. One instance is provided by a comparison of the expected award when the parents have not remarried with the award that would be made under the simplest income-equalization system. This comparison is possible because the vignettes specify the total income and number of persons to be supported in this situation. For example, an unmarried mother with 1 child making \$1500 per month would receive an award of \$129 from a father who earned \$2000 per month, making the per person income in her household \$814; the unmarried father would have \$1871 remaining after the award.²⁵ The per capita household incomes are clearly not equal.

Both a remainder rule and income-equalization would predict that that there would be no award if the mother has more income than the father, even if the father could afford to contribute. This prediction would be true for the remainder rule as long as the the mother could meet the children's subsistence needs and would always be true under income-equalization. In the vignettes, these conditions would approximately hold if the mother earned \$1500 per month, had remarried, and was supporting one child, while the father earned \$1000 per month and had not remarried. An award was made in 16 (84 percent) of the 19 vignettes that presented this situation, further suggesting that the remainder and income-equalization rules were not used.

Finally, income-sharing requires that an award be made regardless of the father's income or other obligations. Considering the cases in which the father earned only \$500 per month, awards were made in 84 percent of the 158 vignettes in which the mother earned \$500 or less per month and even in 57 percent of the 100 vignettes in which the mother earned \$1500 monthly. While income-sharing is not dominant, in that the custodial parent's income and the marital status of the parents affect suggested awards, for the most part, the suggested awards incorporate the principle emphasized by income-sharing that some award should always be made.²⁶

In contrast to the evidence against the other systems, in the untruncated population multiplying father's income by a constant results in multiplying the suggested award by a number close to that constant, a straightforward kind of proportional contributions-variable need system. Even with the departure from this simple proportionality seen in the expected values, the combined evidence of the effects of parental resources and remarriage strongly suggests that respondents use a system that can be most simply described as proportional contributions-variable need.

DISCUSSION

By distinguishing the contribution rule from its operand, this analysis identified child support systems that differ in whether they operate on children's needs, parents' resources, or both to determine what is to be allocated between parents. Suggested child support awards appear to assume that the needs of children increase with the parents' resources and that the parents should contribute to those needs in proportion to their resources. This system is a kind of hybrid, in that it explicitly

considers needs of children and implicitly considers needs of parents, and provides an instance of invoking multiple rules so that fixed resources can be allocated justly (Cook and Yamagishi 1983). A scarce resource is being allocated to the least advantaged party among those concerned, and rules that consider need appear to supplant alternatives, for example, objective equality, as previous research suggests would occur (Greenberg 1981; Lamm and Schwinger 1980; Rawls 1971, p. 302). The preference for proportionality over equality in making child support awards implements a modified version of "from each according to their abilities, to each according to their needs" in seeking justice for all parties.²⁷

The study of principles of justice has often focused on allocations of positive goods, and of income or wages in particular. This is true of both the experimental and the nonexperimental literatures (recent examples include Markovsky 1985; Alwin 1987; Mirowsky 1987). The conditions under which positive values are allocated equally or in proportion to some recipient characteristic have been addressed (Cook and Hegtvedt 1983), but the conditions affecting the choice of rule for negative values are less well specified (Hamilton and Rytina 1980; Lamm, Kayser, and Schanz 1983). Furthermore, distinctions among the situations in which negative values are dispensed are needed. For example, Tornblom and Jonsson (1987) compared the perceived justice of equality and proportionality rules in allocating positive and negative outcomes. They find that the equality rule was considered just in all conditions regardless of which type of outcome was distributed, whereas the proportionality rule was considered unjust in all but two conditions, both of which involved positive outcomes. The applicability of these findings to the

case of child support is limited; because the study associated negative outcomes with a task failure, the negative outcomes were a kind of punishment. Making child support awards requires allocating costs between parents so that a benefit can then be passed on to children. The costs allocated are responsibilities, not punishments, and there is strong evidence that respondents use a proportionality rule.

If it is true that in natural settings people focus on procedures rather than outcomes in assessing the fairness of institutions (Tyler and Caine 1981), then developing just procedures for arriving at child support awards is important for the political and practical success of child support reforms. While the argument has been made that mathematical formulas are simply rules that judges can use to express preferences about who should share the costs of the children (Giampetro 1986, p. 388), judges presumably could express their preferences even more easily in the absence of such rules. Furthermore, it appears that ordinary judgments themselves use a kind of mathematical formula; respondents' suggested awards appear to be a fairly constant percentage of the father's income over at least moderate levels of income.

Neither the system that underlies responses to these vignettes nor the absolute value of the suggested awards is clearly more just than other possible systems or awards. One cannot, for example, simply recommend that the system embodied in these beliefs be implemented. A child support system that differs in important ways from the system that citizens ordinarily use, however, will need to be justified and explained to gain support. The findings reported here indicate that the preferences embodied in child support rules are not based on narrow or situational

interests, but use general rules of fairness to arrive at an outcome. A system based on the everyday principles of justice embodied in these citizen preferences, however, may be less important in a changing society than a child support system that supports broader social values, such as the continuing responsibilities of parenthood.

Notes

¹The Child Support Enforcement Amendments specify that states institute three of the following: (1) voluntary wage withholding; (2) standards for determining awards; (3) security bond; (4) initiating paternity proceedings when the liable parent refuses to cooperate; and (5) use of paternity tests (Stuart 1986, p. 204).

²Eckhoff (1974, pp. 148-152) lists three types of reciprocation in which negative values are exchanged: revenge, punishment, and competition. The case of child support is most like competition, the case he does not discuss.

³Secondary parties with an interest in the income of the noncustodial and custodial parents, such as new spouses and children of either parent or taxpayers, are largely ignored in this discussion. For simplicity, I assume several children, a male noncustodial parent, and a female custodial parent.

⁴This is not to say that principles of justice are the only influences on such judgments or that the payment suggested is the only one that would be considered fair. The same person may reach different judgments about the fairness of a situation depending, for example, on whether he or she focuses on procedures or outcomes, on personal relationships or processes (Lerner 1981); which of these is salient may depend on the information available as well as other factors. Directly rating the justice of a given payment in a given situation is substantively different from the task analyzed here and cannot be assumed to lead to the same results. In the case of income, for example, Shepelak and Alwin (1986, pp. 41-42) present evidence that suggests that subjective

judgments of fair income, theoretically derived just income values, and ratings that can be assumed to be influenced by perceptions of justice, such as ratings of overpayment and underpayment and of satisfaction with income, are distinct in some ways. Discussions of judgments involving justice do not always preserve such distinctions.

⁵Eckhoff (1974, pp. 30-31) characterizes these as the domains of retributive and distributive justice respectively. Cook and Hegtvedt (1983) use the terms equity and distributive justice. The terminology in this literature is not standard. In contrast to the usage just cited, for example, Cook and Hegtvedt (1983, p. 218) and Törnblom and Jonsson (1987) refer to the allocation of positive outcomes as distribution and the allocation of negative outcomes as retribution. Because Eckhoff (1974) makes many distinctions that are relevant here, I use his terminology when possible. A major exception is that I call "allocation" or "contribution" rules what he usually refers to more generally as "principles of equality."

⁶One could argue, for example, that the noncustodial parent offers help with support in return for the day-to-day child care offered by the custodial parent. If children offer tangible and intangible rewards in exchange for support, in the long run there is also exchange between parents and children. Thus, parents may consider the amount, frequency, and likelihood of expected returns from their children when making child support decisions. The usefulness for the present research of viewing child support as involving reciprocation between parents and children is limited by the long time frame for parent-child exchanges. Parents do not repeatedly adjust the amount they spend on children to take into

account received or expected returns, in part because many of the expected returns are due only after parental support has ceased. Most important, while parents' commitment to meeting their obligations to support their children may depend on expected rewards, the obligation to support children is not contingent upon receiving these rewards.

⁷The discussion of Cohen and Greenberg (1982, p. 2) distinguishes between formal principles of justice (what I call allocation rules) and material principles of justice (what I call the procedural operand). What I call the material operand is not discussed.

⁸Following Eckhoff (1974, p. 205), an allocation is a set of related transfers. The distribution of outcomes within a group is the result of allocations. In the discussion that follows, I call an "allocation," what Deutsch (1985, pp. 31-35) calls a "distribution." The sources of a sense of injustice with respect to a particular allocation of benefits or costs that Deutsch distinguishes are (1) the value underlying the allocation; (2) the nature of the thing being allocated; (3) the roles of the parties to the allocation; (4) the timing and character of the allocation process; (5) the rules or criteria that operationalize the underlying values; (6) the measurement of the underlying values; and (7) the process of making decisions about any of these elements. All but the first explicitly refer to procedural aspects of allocation (Deutsch 1985, pp. 31-35). To Deutsch's list could be added the resulting distribution, since the resulting distribution may be unfair even if all individual outcomes are fair (Brickman et al. 1981).

⁹In the case of child support, two different distributions could be considered: the distribution of contributions to the children's support,

or of outcomes, that is, of money after the allocations are complete. All of the child support systems discussed here except income-equalization focus on the former.

¹⁰In equity theory, these characteristics are sometimes referred to as "inputs" (Walster, Berscheid, and Walster 1976), and these discussions also assume that all allocation rules can be reduced to proportionality rules once the input is correctly identified (Schwinger 1980). The distinction developed here emphasizes the logical role of such "inputs" in allocation decisions, explicitly recognizes each dimension as a variable requiring a decision when an allocation is made, and provides flexibility when dealing with decisions involving multiple partners who provide different "inputs," as is the case with child support.

¹¹Deutsch (1975, 1985) and Schwinger (1980) also discuss bases for selecting an allocation rule, but they are concerned with how values affect social relationships, for example, with whether or not equal allocations promote solidarity. Similarly, Hochschild (1981) suggests that the allocation rule used may also vary according to whether justice in the socializing, economic, or political life domain is being considered. She argues that the allocation rules used in the socializing and political domains are more likely to emphasize objective equality than differentiation.

¹²A preliminary issue, who should contribute, is not considered here because the answer is the same for all the cases examined in detail. Resolving this issue is relatively straightforward: the principal rule names parents as the appropriate contributors because support of minor children is a moral and legal obligation of the parent-child tie. The

obligation of the noncustodial parent to contribute to his children's support is always established by family tie; while this social and legal obligation can be defaulted on, for example by desertion, it is difficult to gain a total exemption. In situations where resources are not sufficient to meet all legitimate demands, another rule may identify the government as a supplementary contributor to the continued existence of a citizen.

¹³In discussing material operands, what the child "needs" is assumed to equal the "cost" of the child. In discussing the justification for child support claims, "need" refers to the child's dependency. Note also that parental resources may be used as either a procedural or a material operand. As a procedural operand, parental resources are used to calculate how the amount the child needs should be divided between parents. As a material operand, parental resources are used to determine how much the children need or some share of parental resources is given directly to the children.

¹⁴As discussed below, I assume that the cost of the child increases with the resources of the parents and is a relatively constant proportion of the parents' income, except, perhaps, at very high or very low levels of resources. Alternatively, it has been argued that the cost of a child is a constant proportion of consumption, and thus a declining proportion of income. (Discussions are presented in Eden 1977; Espenshade 1984; Garfinkel 1987; van der Gaag 1981.) Determining the cost of the child (or the child's needs) also involves questions of justice, which are not considered here.

¹⁵The child support systems described in Table 1 are necessarily simplified; furthermore, to resolve inconsistencies among these discussions and to emphasize certain distinctions, the labeling of the systems differs from that found in some proposals for child support systems. While actual and proposed systems do not include all the combinations summarized in Table 1, the table can be used to classify the major systems. The system Sawhill describes as "absolute needs" (1983, p. 101) applies a remainder rule to a fixed need. Bergmann describes a system in which a proportional contributions rule is applied to a fixed need (1983, p. 117). The Income Shares Model and Washington Uniform Child Support Guidelines described by Williams (1986, pp. 55-69, 76-77) prescribe proportional contributions to a variable cost of child. The Melson formula (Williams 1986, pp. 70-74) first calculates proportional contributions to fixed needs and then makes an adjustment for standard of living; this could be considered a variable need system using proportional contributions or a combination of proportional contributions-fixed need and income-sharing. Income-equalization systems are proposed by Cassetty and Douthitt (1984) and Sawhill (1983). The Wisconsin income-sharing system (Garfinkel 1985; Garfinkel and Melli, no date) computes the award as a fixed percentage of the noncustodial parent's income, making adjustments only for preexisting children. All these formulas consider the number of children and most assume that the additional cost of the next child is lower than the cost of the previous child; some proposals consider that the cost of a child varies with age (Williams 1986). Except for income-sharing, actual or proposed systems may modify a basic award based on any of the following: the income an unemployed parent

would expect if he or she worked, child care expenses or contributions to child care, extraordinary medical expenses, shared custody, other dependents of the noncustodial parent. For the most part, the systems listed above are the systems I refer to in the discussion below. I was not able to find an example of an equal contributions-fixed need system, but the system is retained because equality rules are prominent in discussions of allocation rules.

¹⁶Of the households contacted, 22.5 percent refused to participate. Twelve attempts, on systematically rotated shifts, were made before a number was classified as continual ring or continual busy. Of the telephone numbers generated in the main sample 21.5 percent were disconnected, 11.0 percent were business phones, 16.4 percent gave continual ring, continual busy, or were crossed lines, and the remainder were confirmed household numbers. Because analyses tested for differences between custodial and noncustodial parents and others, these analyses also omit 23 households in which the questions were answered by an adult who was both a custodial and a noncustodial parent; 4 households in which the interview was completed with a proxy for a minor custodial or non-custodial parent were also omitted.

¹⁷The dimension "income type" was included only to test whether or not respondents attended to the specification of whether before or after tax income was to be considered. For this reason, the value "after taxes" was randomly assigned to a only 1/8 sample of the vignettes. (Values for other dimensions were all assigned with equal probabilities.) The same income type was used for both parents. When this dimension was included in the models presented later, it was not significant ($t < 1.0$).

Therefore, this dimension is omitted in the analysis and discussion below; because it is independent of the others, omitting it does not affect the estimates of the coefficients presented.

¹⁸This assumes that income-equalization represents a ceiling. That is, there is an implicit rule that the award transfer cannot make the noncustodial parent worse off than the custodial parent and children, controlling for the number of persons.

¹⁹If need is 20 percent of the sum of both parents' incomes and parents make exactly proportional contributions, then need is $.2(\text{CP income} + \text{NCP income})$ and contributions are $.2 * \text{CP income}$ and $.2 * \text{NCP income}$ respectively. An increase in the noncustodial parent's income affects his contribution but not that of the custodial parent. This illustration is similar to the Income Shares Model, except that the model combines parental incomes to select the percentage, which declines with total income (Williams 1986, p. 56).

²⁰Some child support systems specify a self-support reserve, an amount that the noncustodial parent needs to survive and which is therefore not subject to a child support award. The Melson formula, for example, considers income of a spouse as reducing the self-support reserve (Williams 1986, p. 74).

²¹Respondents originally expressed their answers in dollars for 82.6 percent of the vignettes and in percentages for the remainder. The form of the dependent variable was chosen by examining normal probability plots and the pattern of outliers for several OLS models analyzing alternative transformations of the dependent variable. A linear regression on

log dollars for the nonzero observations resulted in a straight line normal probability plot for respondents answering in dollars ($R^2 = .44$); the plot deviated only slightly from a straight line for those answering in percentages ($R^2 = .69$). Altogether, there were fewer than 20 outliers with standardized absolute values greater than or equal to three. Using logs, however, is problematic when some observations have the value zero. Compared with adding 1 to cases with the value 0, the method chosen results in a slightly larger intercept and slightly smaller effects for father's income.

²²Models with several interaction terms and other respondent characteristics were examined, but a simplified model is presented because conclusions are only slightly different in the more complex models. Preliminary analysis suggested that the respondent's income, number of children, and status as a custodial or noncustodial parent were not significant ($t < 2.0$). In addition to those shown, the following terms were tested: income type in the vignette (before-tax or after-tax income); the response metric (dollars or percentages); interactions between metric and all vignette dimensions, and between father's income and number of children, father's marital status, mother's marital status, and mother's income. Of these, t values greater than 2 occurred for the interaction between metric and the highest category of mother's and father's incomes, for the interactions between mother's income of \$1500 per month and father's income, and for the interaction between 3 children in the household and father's income of \$3000 per month. All interaction coefficients had positive signs. Coefficients for sex, age, and the dummy variable indicating at least some college also had t values greater

than 2. To enable the reader to consider the effects of sample composition, the model presented retains sex, education, and age.

²³The number of respondents is almost exactly one-third the number of vignettes. Inflating the standard error or the t value required to reject the null hypothesis by the square root of 3 are equivalent methods of making this adjustment, but the latter is simpler. Multiplying 1.96 by the square root of 3 gives a t value of 3.39.

²⁴The expected values assume that neither parent has remarried, that the mother is unemployed, that the respondent is a 43-year-old male high school graduate who did not attend college. The expected value of the award is

$$E(y_i | f_i, \bar{z}) = P(y_i \leq \ln(20) | f_i, \bar{z}) \cdot E(y | f_i, \bar{z}, y_i \leq \ln(20)) \\ + P(y_i > \ln(20) | f_i, \bar{z}) \cdot E(y | f_i, \bar{z}, y_i > \ln(20))$$

where f_i refers to the value of father's income, \bar{z} refers to the constant and the average or reference value of the other independent variables among the x 's. The actual calculation of the expected values uses

$$E(y_i | f_i, \bar{z}) = \phi_i \ln(20) + [1 - \Phi_i] \left[\alpha + \beta_k f_i + \gamma \bar{z} + \sigma \left(\frac{\phi_i}{1 - \Phi_i} \right) \right],$$

where ϕ_i and Φ_i are the density and distribution function of the standard normal evaluated at $[(\ln(20) - \beta'x_i)/\sigma]$ (see Mare and Chen 1986; Maddala 1983; McDonald and Moffitt 1980).

²⁵The awards described here are computed in the same fashion as the expected values described above, except that the mother's income is set at \$1500.

²⁶For example, the Colorado child support system largely implements the Income Shares model, but does not include the self-support reserve. Some award, even if only \$20 monthly, is required (Colorado Child Support Commission 1986).

²⁷Eckhoff argues that this rule aims to make the distribution of costs and benefits more even (1974, p. 225). If taken to its logical end in the case of child support, this rule would imply the system described as income-equalization. If solidarity and an equal distribution are mutually consistent (Deutsch 1985, pp. 41-44), one would predict low acceptance of income-equalization because the rule promotes and presupposes a kind of solidarity that may seem irrelevant to the families involved. For example, Cassetty and Douthitt argue that the philosophical basis for income-equalization is similar to that for shared custody and that if families cannot share economic aspects of parenting (presumably in the way implemented in income-equalization), they probably cannot cooperate amicably in the other ways required by joint parenting (1984, p. 11).

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