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# Intergenerational Transfer and Reporting Bias: An Application of the MIMIC Model

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## Abstract

**Objectives:** Parents' and adult children's reports of transfer do not always agree, because each has respective bias. This study demonstrates a method to separate reporting bias from transfer and identify their respective correlates.

**Method:** The analysis was based on 4,947 parent-child dyads from the Family Roster and Transfer Module added to the 2013 wave of the Panel Study of Income Dynamics. Drawing on classical test theory, a multiple-indicators-and-multiple-causes (MIMIC) model was used to decompose parents' and adult children's reports of time and money transfers into a latent factor (true transfer) and unique factors (bias). This model further identified respective covariates associated with true transfer and bias.

**Results:** A substantial amount of bias existed in parents' and adult children's reports. The self-enhancement hypothesis did not fully explain how resources to help and need for support relate to the direction of reporting bias. Some correlates of transfer identified in prior studies were associated with transfer only, some with bias only, and others with both transfer and bias.

**Discussion:** Bias is common in both parents' and adult children's reports of transfer. Separating bias from transfer and identifying their respective correlates makes it possible to explain why intergenerational transfer and reporting bias occur.

**Keywords:** Downward transfer—Money—Time—Upward transfer

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The last decades have witnessed several demographic shifts, such as an increase in life expectancy and prolonged dependence of adult children on their parents, that influenced individuals' need for support from as well as their resources available to help family members (Bianchi, Hotz, McGarry, & Seltzer, 2008). Gerontological scholars have examined transfers of resources between parents and their adult children to understand whether, facing these demographic shifts, family remains an important safety net later in life (Silverstein & Giarrusso, 2010). Parents and adult children often provide discrepant reports about the same transfer between them (Rossi & Rossi, 1990), likely because parents and adult children include bias from their

distinct perspectives (Giarrusso, Feng, & Bengtson, 2004). Moreover, choosing between using parents' or adult children's reports can lead researchers to different conclusions about the correlates of transfer (Klein Ikkink, van Tilburg, & Knipscheer, 1999). Most researchers have relied on parents' or adult children's reports to measure transfer without considering how to control for bias in these reports (e.g., Bianchi, Evans, Hotz, McGarry, & Seltzer, 2007), which begs the question of the extent to which empirical findings and theoretical explanations of intergenerational transfer are indeed accurate.

Recognizing that reporting bias has the potential to alter research findings on intergenerational transfer, a

handful of studies have examined the differences between parents' and adult children's reports and identified covariates associated with the differences (Kim, Zarit, Eggebeen, Birditt, & Fingerman, 2011; Mandemakers & Dykstra, 2008; Shapiro, 2004). Although bias embedded in parents' and/or children's reports can lead to differences between reports, examinations of such differences shed little light on whether reporting bias is present in the reports and if so, which direction the bias leans toward and why. These studies also do not address the question of how to accurately identify the correlates of intergenerational transfer when the measure of transfer may be biased.

In this study, we demonstrate how the multiple-indicators-and-multiple-causes (MIMIC) model simultaneously separates bias from intergenerational transfer in reports and identifies respective correlates of transfer and bias. To our best knowledge, only Lin (2008) has adopted this analytic strategy, but her study examined transfers from daughters to their mothers using data collected two decades ago. Using newly available large-scale data from the 2013 Panel Study of Income Dynamics, we applied the MIMIC model to examine transfers given to and received from between parents and their adult children. Specifically, this article addresses three important questions: First, do parents or adult children provide more reliable reports of transfer? Second, how are parents' and adult children's need for support and resources to help related to reporting bias? Last, how are parents' and adult children's need for support and resources to help related to the likelihood of giving or receiving support, net of their associations with bias?

In the following, we first review what prior literature has suggested about the determinants of transfer between parents and adult children and discuss why reporting bias should not be ignored in this line of research. Next, we review what past studies have found about the discrepancies between parents' and adult children's reports of transfer and discuss the limitations of their analytic approach. Finally, we introduce the MIMIC model and describe what research questions can be addressed with the model and how its application can improve the understanding of intergenerational transfer.

## Determinants of Intergenerational Transfer

Social norms prescribe that family members should help each other when they need support (Rossi & Rossi, 1990). Gerontologists are particularly interested in mutual assistance between adult children and their parents in later life. Although parents and adult children are supposed to help each other when needs arise, not all of them do so (Henretta, Soldo, & Van Voorhis, 2011; Pillemer & Suito, 2014). The extent to which assistance takes place depends, in part, on parents' and adult children's resources to help and the extent of their need for support (Silverstein & Giarrusso, 2010).

Prior studies have shown that parents with fewer economic resources, such as those who are nonworking and

have less education or lower incomes, less often provide help to but more often receive help from adult children (Fingerman et al., 2015; Pezzin, Pollak, & Schone, 2015). As parents age, they are prone to experience poorer health, and thus they need more support from and are less capable of providing support to children (Clark & Kenney, 2010; Henretta et al., 2011). Parents with a spouse or partner have more resources to assist children and are less likely to rely on adult children for assistance (Fingerman et al., 2015; Silverstein, Conroy, & Gans, 2008). Perhaps because of cultural norms and cumulative disadvantages, Black and Hispanic parents are less likely than White parents to make transfers to adult children, but they are more likely to rely on adult children for time and money transfers (Berry, 2008; Wong, Kitayama, & Soldo, 1999). Family composition also determines how parental resources are allocated. Holding parental resources constant, the more children parents have, the fewer resources they can give to each child, as providing help to some children depletes the parents' resources to help other children (Fingerman et al., 2015). Yet, the more children parents have, the more likely they will receive support from children, though prior studies have yielded mixed findings regarding whether help received from some children encourages (Tolkacheva, van Groenou, & van Tilburg, 2010) or discourages (Pezzin et al., 2015) help from other children.

As for adult children's resources and needs, extant studies have demonstrated that daughters are more likely than sons to engage in exchanges with their parents, likely due to gender-role expectations (Clark & Kenney, 2010; Pillemer & Suito, 2014). Adult children with more resources, such as those who are older or working and those who have more education, higher incomes, or better health, less often receive support from but more often give support to parents (Fingerman et al., 2011; Pezzin et al., 2015; Suito, Pillemer, & Sechrist, 2006). Children with a spouse or partner who can help them in times of need are less likely to engage in exchanges with parents than unpartnered children (Sarkisian & Gerstel, 2008). When adult children have minor offspring, they more often receive help from but less often give support to parents (Henretta et al., 2011; Sarkisian & Gerstel, 2008). Receiving help from parents-in-law reduces adult children's need for support from their parents, whereas providing help to parents-in-law reduces adult children's resources to assist their parents (Shuey & Hardy, 2003). Adult children who live with their parents tend to engage in more exchanges than adult children who live apart from their parents (Silverstein et al., 2008).

Although past studies have laid an important foundation for understanding why intergenerational transfer may take place, most of these studies have overlooked bias in reports of transfer. Researchers typically have used either parents' or adult children's reports to measure intergenerational transfer, yet parents and adult children often provide incongruent reports about the same transfer (Rossi & Rossi, 1990), suggesting that parents, adult children, or both have included bias in their reports. Some research has

shown that a researcher's choice to use parents' or children's reports can influence a study's conclusions about the correlates of transfer, likely due to bias in reports (Klein Ikkink et al., 1999; Lin, 2008). Because most researchers conducting studies on intergenerational transfer have not controlled for bias in parents' or adult children's reports, it is unclear to what extent past studies have accurately identified covariates of transfer.

### Discrepancies in Reports of Intergenerational Transfer

Social scientists have long recognized that self-reports often contain idiosyncratic bias, resulting in discrepant reports of the same event (Dykema & Schaeffer, 2000). Similarly, parents and adult children likely provide different reports about the same intergenerational transfer (Rossi & Rossi, 1990). Researchers have adopted the self-enhancement hypothesis to explain why parents and adult children provide different reports of transfer. This hypothesis postulates that individuals tend to enhance their self-image by over-reporting desirable behaviors and under-reporting undesirable behaviors (Kim et al., 2011; Klein Ikkink et al., 1999; Mandemakers & Dykstra, 2008). Therefore, recipients with a greater need may under-report the support received to mitigate feelings of dependency that may threaten the self-concept. By contrast, givers with fewer resources may over-report the support given to maintain their positive self-image when they cannot meet the normative expectations of helping family members.

Some studies have found support for the self-enhancement hypothesis. Kim and her colleagues (2011), for example, showed that adult children with poorer health (i.e., having a greater need for support) reported receiving less support than their parents reported giving. Zweibel and Lydens (1990) also found larger discrepancies in reports about caregiving when care recipients needed additional medical care and when caregivers reported health problems. While recognizing this empirical support for the self-enhancement hypothesis, it is important to note that examining the differences between reports tells little about bias in the reports. For instance, when parents report giving larger transfers to adult children than the adult children report receiving, five scenarios could occur: (a) parents over-report the transfer and adult children provide accurate reports without bias, (b) parents provide accurate reports and adult children under-report the transfer, (c) both parents and adult children over-report the transfer and parents over-report by a greater magnitude than adult children do, (d) both parents and adult children under-report the transfer and adult children under-report by a greater magnitude than parents do, and (e) parents over-report but adult children under-report the transfer. Thus, studies examining the differences in reports cannot answer critical questions as to whether reporting bias is present and if so, which direction the bias leans toward and why. More importantly, these studies cannot answer the question of how to accurately

identify covariates of intergenerational transfer when reports of transfer may contain bias. In the following section, we introduce the MIMIC model, which enables us to address this question.

### The MIMIC Model

The MIMIC model is a structural equation model that combines factor analysis and regression. Factor analysis is based on classical test theory, a psychometric theory for scale development, which assumes that respondents have true scores on the construct being measured (McDonald, 1999; Nunnally & Bernstein, 1994). True scores are not directly observable but can be estimated from respondents' answers to a series of related questions. When parents' and adult children's reports are treated as scale questions measuring the same underlying construct (i.e., transfer), researchers can partition the covariance among these reports into two components: the shared variance attributable to the latent, common factor of all questions and the unique variance within each question that is not accounted for by the latent factor. Therefore, classical test theory can be used to distinguish the true transfer (i.e., shared variance) from bias (i.e., uniqueness) in each set of parents' and adult children's reports. Because the squared factor loading of a question represents the proportion of variance that is attributable to the underlying construct, factor loading can be used to indicate the extent to which a question is reliable in measuring the underlying construct.

The MIMIC model also includes a regression component. When the true score is separated from bias via factor analysis, regressions can be used to simultaneously examine the respective associations of covariates with the true score and with bias (Fleishman, Spector, & Altman, 2002; Gallo, Anthony, & Muthén, 1994; Grayson, Mackinnon, Jorm, Creasey, & Broe, 2000). Consequently, the MIMIC model provides a better understanding of intergenerational transfer than the conventional approach used by prior studies, because reporting bias and transfer are analyzed as separate constructs.

To our best knowledge, only one study (Lin, 2008) has adopted the MIMIC model to examine intergenerational transfer. Using data from the 1997 National Longitudinal Surveys of Mature Women and Young Women, Lin (2008) applied the MIMIC model to examine mothers' and adult daughters' reports of daughters' help to their mothers. The study, however, did not capture the full scope of intergenerational transfer and was dated, as it focused exclusively on upward transfer using mother-daughter dyads from two birth cohorts with data from the 1990s.

### The Present Study

Intergenerational transfer in late life is an important topic in gerontology. The choice between using parents' or adult children's reports generates different sets of covariates of

intergenerational transfer, likely because of bias in parents' and adult children's reports. Some studies have looked at the differences between these reports but did not examine bias in these reports. Consequently, it remains unclear how to control for reporting bias when transfer is examined. In this study, we used the MIMIC model to control for reporting bias in identifying the determinants of the transfer, therefore addressing three important questions that would be unanswerable using the conventional approach: First, do parents or adult children provide more reliable reports of transfer? Second, how are parents' and adult children's need for support and resources to help related to bias in reports? Last, how are parents' and adult children's need for support and resources to help related to the likelihood of giving or receiving support, net of their associations with bias?

## Method

Data came from the Family Roster and Transfer Module, a substudy of the 2013 wave of the Panel Study of Income Dynamics (PSID). The PSID began in 1968 with an original sample of 18,230 individuals living in 4,802 households. The original sample and all individuals who were later born to or adopted by the original sample persons were followed annually until 1997 and every other year thereafter. In 2013, the Family Roster and Transfer Module was implemented to help understand the structure of extended families and the flow of intergenerational assistance within and between households in contemporary American society (Schoeni, Bianchi, Hotz, Seltzer, & Wiemers, 2015). PSID respondents were asked to provide information about their parents, stepparents, parents-in-law, children, and stepchildren, as well as about the time and money transfers they exchanged with their parents (younger than 80 years old) and adult children (age 18 or older). For parents living in the same household, both parents were identified as a unit (i.e., parent unit) without differentiating whether the transfers were made to or from the father or the mother.

In total, 9,063 households containing 13,697 individuals were interviewed, with a response rate of 91% (PSID Main Interview User Manual, 2015). After matching parents' and adult children's reports, we identified 2,675 unique parent units. Because some parent units had more than one adult child participating in the PSID, a total of 4,947 parent unit-adult child dyads were included in the analysis. This is by far the newest and largest-scale U.S. data set that provides information on intergenerational transfers from both parents and their adult children.

## Measures

Intergenerational transfers were measured by whether parents and adult children gave or received time and money transfers to and from each other during the year prior to the interview. Time transfers include hours spent on giving or receiving help with errands, rides, chores, babysitting,

or hands-on care. Money transfers refer to the amount of money, loans, or gifts of \$100 or more given or received. Because most respondents reported no transfers, this analysis used only dichotomous measures. Four dichotomous variables were created for downward transfers (1 = *yes*, 0 = *no*): (a) parent's report of giving time to the child, (b) child's report of receiving time from the parent, (c) parent's report of giving money to the child, and (d) child's report of receiving money from the parent. An additional four dichotomous variables were created for upward transfers (1 = *yes*, 0 = *no*): (a) parent's report of receiving time from the child, (b) child's report of giving time to the parent, (c) parent's report of receiving money from the child, and (d) child's report of giving money to the parent.

We constructed a series of variables from the main PSID interview to capture parents' and adult children's attributes that past studies have shown to be related to need for support and resources to help. The same operationalization was applied to the following variables for both parents and adult children: partnership status, age, education, race-ethnicity, employment status, health, and family income. Partnership status refers to being married (including cohabiting, reference category) or unmarried. Age and education were measured in years. In the preliminary analysis, no significant difference between Blacks and Hispanics was found, so we used Whites (reference category) versus nonwhites (80% Blacks, 16% Hispanics, and 4% other racial and ethnic groups) to simplify the analysis. Employment status was captured by working (coded 0) or not (coded 1). Health was gauged using the total number of Activities of Daily Living (ADL) or Instrumental Activities of Daily Living (IADL) difficulties. Family incomes were measured in 2013 dollars. In cases where parent units included both mother and father, we took the average of both spouses' information for age, education, and ADL or IADL difficulties and used whether either spouse was nonwhite or working for the variables of race-ethnicity and employment status, respectively.

Other variables were constructed slightly differently for parent units and adult children to reflect their respective resources and needs. The number of children that parents had was treated as a continuous variable, because having a larger number of children is likely to reduce parents' need for support and resources to help, whereas the presence of any minor offspring in the adult children's household (1 = *yes*; 0 = *no*) tends to increase adult children's need for support but decrease their resources to help. A series of dichotomous variables was created to indicate whether the parent units gave or received time or money transfers to or from children other than those in the parent unit-child dyads, as well as whether children gave or received time or money transfers to or from their parents-in-law (1 = *yes*; 0 = *no*).

Because some parent units consist of both mother and father, but mother and father may not have the same knowledge about time and money transfers, we included a series of indicators representing who in the parent's

household responded to the survey—mother (reference category), father, or another person in the parent’s household. Similarly, we considered who in the adult child’s household answered the survey—child him/herself (reference category), child’s spouse, or another person in the child’s household. We also included adult child’s gender (1 = daughter; 0 = son) in the analysis.

### Analytic Strategy

Two analyses were conducted. First, we examined parents’ and adult children’s agreement on downward and upward time and money transfers using cross-tabulation and Kappa statistics. The agreement is considered excellent when the Kappa statistic is greater than 0.75 and poor when it is below 0.40 (Fleiss, Levin, & Paik, 2003). In the second analysis, we estimated two MIMIC models—one for downward transfer and one for upward transfer—to identify who provided a more reliable report, how parents’ and adult children’s need for support and resources to help were related to bias in reports of intergenerational transfer after holding the level of transfer constant, and how parents’ and adult children’s needs and resources were associated with the likelihood of giving or receiving a transfer net of reporting bias.

The specification of the MIMIC model of this study is illustrated in Figure 1. Specifically, when the information of all scale items is combined, the variances of these scale items are conceptualized as coming from two sources: (a) the common factor that an item shares with the rest of the other items (i.e., true transfer) and (b) factors that are item-specific and not shared among items (i.e., item bias). Factor loadings from the factor analysis indicate the reliability of items, because they measure how well observed items are correlated with a latent, theoretical construct of interest (Bohrnstedt, 2010). Items with higher values in factor loadings are considered more reliable indicators of the common

factor than items with lower values. The model has two sets of regression paths linking covariates to true transfer and item bias. The first set of paths (c) links informants’ characteristics to their respective reports, denoting the associations between covariates with variances in the reports that are not explained by the common factor (item bias). A positive coefficient indicates over-reporting, whereas a negative coefficient indicates under-reporting, after holding the true transfer constant. The second set of paths (d) connects informants’ characteristics to the common factor, indicating the associations between covariates and the true transfer, net of covariates’ associations with bias. Finally, we allowed measurement errors from the same type of informant (parent or adult child) and from the same type of transfer (time or money) to be correlated to control the associations among items not accounted for by the common factor.

To achieve model identification, we set the latent factor mean to 0 and the variance to 1. We first allowed the paths from all covariates to the common factor and individual items to be freely estimated and then gradually constrained nonsignificant paths to be 0. The more-restricted models were compared with the less-restricted models to examine whether constraining some paths to 0 would significantly worsen the model’s fit (results not shown). The final model contained only significant coefficients. Goodness of fit was assessed using the comparative fit index (CFI), the Tucker–Lewis index (TLI), and the root mean square error of approximation (RMSEA). CFI and TLI values in excess of 0.95 and RMSEA values smaller than 0.06 indicate that the model fits well (Hu & Bentler, 1999).

A statistical concern is that including multiple children of the same parent unit in the analytic sample may violate the classical assumption of independence among observations and thus underestimate the variance of estimated coefficients. To address this concern, we used Huber-White estimators (Johnston & DiNardo, 1997) to provide robust standard errors of the coefficients in the presence of clustering. We used a multiple imputation procedure to handle missing cases (3.48% of the sample), such that the missing value for a single variable was imputed as a function of other covariates in the analysis (Acock, 2005). To preserve the randomness of imputed variables, the study results were based on 10 random, multiple-imputed replicates.

### Results

#### Characteristics of Parents and Adult Children

Regarding parents’ characteristics, Table 1 shows that 39% of parent units consisted of one parent. On average, these parents were 61 years old and had received 13 years of education. Two fifths of parents were nonwhite, and 40% of parents were not working at the time of interview. These parents had an average income of \$71,000, one ADL or IADL difficulty, and three children. Downward transfer was more prevalent than upward transfer for the sample.

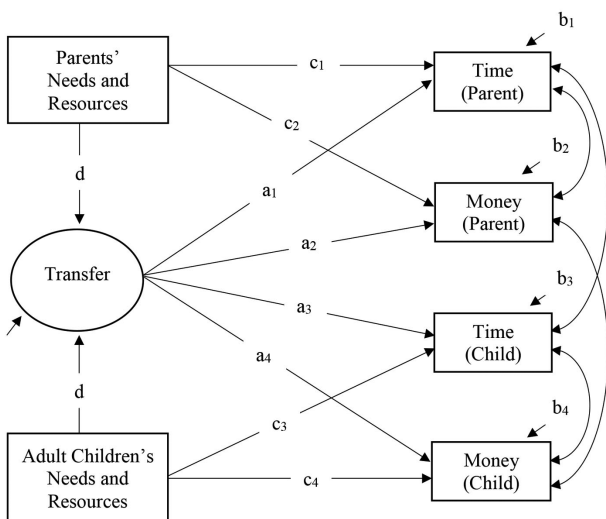


Figure 1. Path diagram of the MIMIC model for transfers.

Approximately one half of the parent units gave time and money transfers to children other than the child in the dyad, whereas only 41% and 17% of the parent units received time and money transfers from other children, respectively.

As for adult children's characteristics, more daughters than sons were in the dyads (55% vs. 45%). These children averaged 37 years old. Overall, they had received more years of education (14 years), were more often unmarried (54%), and had higher incomes (\$72,000) than their parents, but they were less likely to be not working (24%) and had fewer ADL or IADL difficulties (0.25) than their parents. Nearly one half of the adult children (49%) had an

offspring living in the household at the time of interview. While 16% and 6% of the children reported giving time and money transfers, respectively, to their parents-in-law, 14% and 8% of the children reported receiving time and money transfers, respectively, from their parents-in-law.

About 7% of the parent-child dyads were residing in the same household. Most of the parent-unit respondents were mothers (62%), followed by fathers (32%) and other persons in the household (7%), whereas most of those who answered the questions about intergenerational transfers were adult children (87%), followed by their spouses (9%) and other persons in the household (4%).

**Table 1.** Parents' and Adult Children's Characteristics (4,947 Parent Unit-Child Dyads)

	Mean or %	SD
<i>Parents' characteristics</i>		
Unmarried	39.03	
Age	60.73	11.77
Non-White	44.26	
Years of education	12.99	2.51
Number of ADL/IADL difficulties	1.09	2.33
Nonworking	40.41	
Family income (in \$1,000)	71.12	98.44
Number of children	3.36	2.06
Gives time transfer to other children	52.41	
Gives money transfer to other children	52.11	
Receives time transfer from other children	41.35	
Receives money transfer from other children	17.05	
<i>Adult children's characteristics</i>		
Daughter	54.84	
Unmarried	54.26	
Age	36.63	11.22
Non-White	43.16	
Years of education	13.91	2.11
Number of ADL/IADL difficulties	0.25	1.07
Nonworking	24.02	
Family income (in \$1,000)	72.13	114.83
Any offspring in household	48.79	
Gives time transfer to parents-in-law	16.21	
Gives money transfer to parents-in-law	6.09	
Receives time transfer to parents-in-law	13.63	
Receives money transfer to parents-in-law	7.83	
<i>Parent-child coresidence</i>	6.95	
<i>Who provides report</i>		
Mother	61.53	
Father	31.74	
Other persons in parent's household	6.73	
Child	87.00	
Child's spouse	8.99	
Other persons in child's household	4.01	

Note: ADL = Activities of daily living; IADL = Instrumental activities of daily living.

## Disagreement Between Parents' and Adult Children's Reports

Table 2 compares parents' and their children's reports of money and time transfers. For downward transfers, 31% and 29% of parent unit-child dyads provided discrepant reports about time transfers and money transfers, respectively. For upward transfers, 33% and 20% of parent unit-child dyads gave inconsistent reports about time transfers and money transfers, respectively. Because all Kappa statistics were below 0.40, the extent of agreement between parents' and adult children's reports is considered poor (Fleiss et al., 2003), suggesting that for both downward and upward transfers, parents, adult children, or both may have included bias in their reports.

## Downward Transfer

Findings from the MIMIC model about downward transfer are shown in Table 3. The model fits the data well, as the model fit statistics RMSEA, CFI, and TLI were 0.022, 0.969, and 0.947, respectively. Factor loadings were 0.53 for parents' reports of time transfers and 0.31 for money transfers, and those for adult children's reports of time and money transfers were 0.39 and 0.40, respectively (results not shown). Therefore, parents' reports of giving time were the most reliable measure, followed by children's reports of receiving money, children's reports of receiving time, and parents' reports of giving money. The squared factor loadings also indicate that the latent construct (i.e., true transfer) accounted for just 28% (= 0.53<sup>2</sup>) and 10% (= 0.31<sup>2</sup>) of the variance in parents' reports of time and money transfers, respectively, and 15% (= 0.39<sup>2</sup>) and 16% (= 0.40<sup>2</sup>) of the variance in adult children's reports of time and money transfers, respectively. Thus, much of the variance in parents' and adult children's reports of downward transfer is attributable to bias.

Our study provides mixed support for the self-enhancement hypothesis explaining the associations between parents' resources to help and reporting bias. Specifically, unmarried parents, parents with lower incomes, and parents who spent time helping other children tended to over-report time given, while unmarried parents and parents

**Table 2.** Discrepancy in Parents’ and Adult Children’s Reports of Intergenerational Transfers (4,947 Parent Unit-Child Dyads)

Child reports receiving	Downward transfer				Parent reports receiving	Upward transfer			
	Time		Money			Time		Money	
	Parent reports giving		Parent reports giving			Child reports giving		Child reports giving	
	No	Yes	No	Yes		No	Yes	No	Yes
No	51.47%	14.66%	58.76%	18.11%	No	51.53%	24.20%	76.59%	13.36%
Yes	16.21%	17.67%	10.57%	12.55%	Yes	9.08%	15.20%	6.19%	3.86%
Kappa	0.30		0.28		Kappa	0.25		0.18	

**Table 3.** Coefficients From Regressions of Latent Factor and Item Uniqueness on Parents’ and Adult Children’s Characteristics for Downward Transfers (4,947 Parent Unit-Child Dyads)

	Latent factor	Item uniqueness (Reporting Bias)			
	True transfer	Parent gives time	Child receives time	Parent gives money	Child receives money
<i>Parents’ characteristics</i>					
Unmarried	-0.24	0.24	-	0.32	-
Age	0.03	-0.02	-	-	-
Non-White	-	-	-	-	-
Years of education	0.07	-	-	0.05	-
Number of ADL/IADL difficulties	-0.07	-	-	-	-
Nonworking	-	-	-	-	-
Family income	0.60	-0.22	-	-	-
Number of children	-0.11	-0.09	-	-0.17	-
Gives time to other children	-	0.71	-	-	-
Gives money to other children	-	-	-	0.92	-
<i>Adult children’s characteristics</i>					
Daughter	0.32	-	0.11	-	-
Unmarried	0.28	-	0.49	-	0.37
Age	-0.05	-	-0.01	-	-
Non-White	-	-	-	-	-
Years of education	-	-	0.03	-	0.05
Number of ADL/IADL difficulties	-	-	0.06	-	-
Nonworking	0.20	-	-0.13	-	-
Family income	-0.39	-	-	-	-
Any offspring in the household	0.87	-	-	-	-0.46
Receives time from parents-in-law	-	-	1.08	-	-
Receives money from parents-in-law	-	-	-	-	1.32
<i>Parent-child coresidence</i>	0.72	-	0.61	-	-
<i>Who provides report</i>					
Father	-	-0.16	-	-0.11	-
Other persons in parent’s household	-	-	-	-	-
Child’s spouse	-	-	0.25	-	0.25
Other persons in child’s household	-	-	-	-	-
Model fit statistics	RMSEA = 0.022, CFI = 0.969, TLI = 0.947				

Note: ADL = Activities of daily living; IADL = Instrumental activities of daily living.

who gave money to other children were prone to over-report money given. Because these parents generally had fewer resources, their tendency to over-report corroborates the self-enhancement hypothesis. Nonetheless, older parents and parents who had more children were inclined

to under-report time given. Parents who had received fewer years of education and who had more children were likely to under-report money given. Because these parents typically had fewer resources, their tendency to under-report contradicts the self-enhancement hypothesis.

Similarly, our study lends mixed support for the self-enhancement hypothesis explaining the associations between adult children's need for support and reporting bias. Notably, adult children who had fewer years of education, who were not working, and who did not receive time transfers from parents-in-law tended to under-report time received. Adult children who had fewer years of education, who had an offspring living in the household, and who did not receive money from parents-in-law were prone to under-report money received. Because these children generally had more need for support, their tendency to under-report supports the self-enhancement hypothesis. Nevertheless, unmarried children, younger children, and children with more ADL or IADL difficulties were inclined to over-report time received, while unmarried children were likely to over-report money received. Because these children typically had more need for support, their tendency to over-report opposes the self-enhancement hypothesis.

Table 3 also shows that not all of parents' resources to help and adult children's need for support are related to downward transfer after bias is accounted for. Specifically, parents helped more often when they were older or more educated and when they had higher incomes, but they helped less often when they were unmarried and when they had more ADL/IADL difficulties or more children. In addition, daughters, unmarried children, children who were not working, and children with an offspring living in the household more often received help, but older children and children who had higher incomes less often received help. Parent-child coresidence was positively related to downward transfer.

### Upward Transfer

Findings from the MIMIC model about upward transfer are shown in Table 4. The model fits the data well, as the model fit statistics RMSEA, CFI, and TLI were 0.017, 0.975, and 0.962, respectively. Factor loadings were 0.16 for parents' reports of time transfer and 0.27 for money transfer, and those for children's reports of time and money transfers were 0.71 and 0.56, respectively (results not shown). Therefore, adult children's reports of giving time are the most reliable measure, followed by children's reports of giving money, parents' reports of receiving money, and parents' reports of receiving time. The squared factor loadings also indicate that the latent construct (i.e., true transfer) accounted for 3% ( $= 0.16^2$ ) and 7% ( $= 0.27^2$ ) of the variance in parents' reports of time and money transfers, respectively, and 50% ( $= 0.71^2$ ) and 31% ( $= 0.56^2$ ) of the variance in adult children's reports of time and money transfers, respectively. That is, a large share of the variance in parents' and adult children's reports of upward transfer is attributable to bias.

We found mixed support for the self-enhancement hypothesis explaining the associations between parents'

need for support and reporting bias. Specifically, older parents and parents who did not receive help from other children tended to under-report time received. Older parents, parents with fewer years of education, and parents who did not receive money from other children were prone to under-report money received. Because these parents generally had more need for help, their tendency to under-report corroborates the self-enhancement hypothesis. Nonetheless, unmarried parents and parents with fewer children were likely to over-report both time and money received, contrary to what the self-enhancement hypothesis would predict.

The self-enhancement hypothesis was supported in explaining the associations between adult children's resources to help and reporting bias. Adult children who had lower incomes and who spent time helping parents-in-law were inclined to over-report time given. Adult children who were nonwhite and who gave money to parents-in-law were likely to over-report money given. In general, these children had fewer resources to help. Their tendency to over-report is consistent with the self-enhancement hypothesis.

Table 4 also shows how parents' need for support and adult children's resources to help are related to upward transfers after their associations with reporting bias are controlled for. Notably, parents more often received help when they were older, had more ADL/IADL difficulties, and received time or money transfers from other children, but parents less often received help when they had higher incomes. Daughters, unmarried children, and children with more education or higher incomes helped more often, while older children and children with an offspring living the household helped less often. Parent-child coresidence was positively related to upward transfer.

Finally, parent-child coresidence was associated with adult children's over-reports of downward time transfer and parents' and adult children's over-reports of upward time transfer. Regardless of the direction and type of transfer, fathers were more likely than mothers and adult children were more likely than their spouses to under-report whether a transfer had been exchanged.

### Discussion

Intergenerational transfer is key to ensuring the succession of generations and maintaining individuals' well-being (Silverstein & Giarrusso, 2010). Parents' or adult children's reports have commonly been used to measure intergenerational transfer (Bianchi et al., 2007). Yet these reports, like other self-reports, often contain bias that can alter findings on intergenerational transfer (Klein Ikkink et al., 1999; Lin, 2008). A handful of studies have examined differences between reports of transfer (Kim et al., 2011; Mandemakers & Dykstra, 2008; Shapiro, 2004) but they have not examined bias in the reports. Subsequently, it remained unclear how reliably these reports could measure transfer, why the



**Table 4.** Coefficients From Regressions of Latent Factor and Item Uniqueness on Parents' and Adult Children's Characteristics for Upward Transfers (4,947 Parent Unit-Child Dyads)

	Latent factor	Item uniqueness (reporting bias)			
	True transfer	Parent receives time	Child gives time	Parent receives money	Child gives money
<i>Parents' characteristics</i>					
Unmarried	-	0.27	-	0.25	-
Age	0.02	-0.01	-	-0.02	-
Non-White	-	-	-	-	-
Years of education	-	-	-	0.03	-
Number of ADL/IADL difficulties	0.03	-	-	-	-
Nonworking	-	-	-	-	-
Family income	-0.14	-	-	-	-
Number of children	-	-0.14	-	-0.11	-
Receives time from other children	0.07	0.76	-	-	-
Receives money from other children	0.08	-	-	1.10	-
<i>Adult children's characteristics</i>					
Daughter	0.20	-	-	-	-
Unmarried	0.91	-	-	-	-
Age	-0.01	-	-	-	-
Non-White	-	-	-	-	0.32
Years of education	0.05	-	-	-	-
Number of ADL/IADL difficulties	-	-	-	-	-
Nonworking	-	-	-	-	-
Family income	0.46	-	-0.45	-	-
Any offspring in the household	-0.18	-	-	-	-
Gives time to parents-in-law	-	-	0.94	-	-
Gives money to parents-in-law	-	-	-	-	1.56
<i>Parent-child coresidence</i>	0.68	0.67	0.32	-	-
<i>Who provides report</i>					
Father	-	-0.25	-	-0.32	-
Other persons in parent's household	-	-	-	-	-
Child's spouse	-	-	0.33	-	0.19
Other persons in child's household	-	-	-	-	-
Model fit statistics	RMSEA = 0.017, CFI = 0.975, TLI = 0.962				

bias occurred, and how to identify correlates of transfer, net of the bias.

This study used the MIMIC model to address the questions lingering from previous research by separating and analyzing downward and upward transfers and bias in reports. Our findings suggest that the parent's report of time given to children is the most reliable indicator of downward transfer, whereas the adult child's report of time given to parents is the most reliable indicator of upward transfer. This finding can help researchers decide from whom information about intergenerational transfer should be obtained if only one generation will be interviewed. Our study also reveals that much of the variance in parents' and adult children's reports is indeed attributable to bias, not transfer, serving as a stark reminder that the correlates of intergenerational transfer may be erroneously identified when parents' or children's reports are used to examine transfer, but bias in the reports is not adequately controlled for.

Our study found complex patterns of over- or under-reports of time and money transfers among parents and

adult children that the self-enhancement hypothesis cannot fully explain. It should be noted that although the MIMIC model separates the true transfer from bias in reports, it does not explain what the reporting bias means, except that it is independent of the true transfer. We suspect that bias in reports may reflect differences between how parents and adult children interpret the questions, recall past transfers, or perceive familial responsibility to each other. The measures of these potential sources of bias are not available in the PSID. More studies are needed to understand why parents and adult children include bias in their reports and to develop theoretical explanations.

Finally, like prior studies on intergenerational transfer (e.g., [Fingerman et al., 2015](#); [Pezzin et al., 2015](#)), our study also examined whether parents' and adult children's needs and resources are predictive of transfer. Because this study controlled for reporting bias, the findings can be used to validate prior study findings on the correlates of intergenerational transfer. We found that some correlates, such as parents' ADL/IADL difficulties, were associated with

intergenerational transfer only, which confirms prior studies' findings. Nonetheless, other correlates were associated with not only intergenerational transfer but also reporting bias (e.g., parent's age), and still other correlates (e.g., children's exchanges with parents-in-law) were correlated with reporting bias only. Together, these findings suggest that some correlates of transfer are likely to be biasedly estimated or erroneously identified when the correlates' associations with reporting bias are not accounted for. This important insight cannot be attained using the conventional approach adopted in prior studies.

Although our study makes significant contributions to the intergenerational transfer literature, it has some weaknesses. First, one strength of the MIMIC model is that it uses factor analysis to separate reporting bias from transfer. We used four indicators—time and money transfers from parents' and adult children's reports—to identify the model. Future studies should incorporate other dimensions of exchange, such as emotional support, to fully capture the scope of intergenerational transfer. Second, another strength of the MIMIC model lies in its regression component, which simultaneously estimates respective covariates for transfer and bias. We focused on resources and needs as predictors of transfer and bias. Future studies should consider including other predictors, such as perceived obligation (Silverstein et al., 2008) and exchange history (Henretta et al., 2011; Leopold & Raab, 2013), in the MIMIC model to expand our understanding of intergenerational transfer.

Bias in parents' and adult children's reports of transfer presents a methodological challenge for researchers studying intergenerational transfer. Using the MIMIC model, researchers can separate reporting bias from transfer, and its flexibility makes it easily extendable to include additional indicators and predictors of transfer that future studies may collect. As gerontologists continue to study intergenerational transfers and parents and adult children are likely to include bias in their reports of transfer, the MIMIC model serves as a promising tool for researchers to gain a better understanding of intergenerational transfer, net of reporting bias.

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## Conflict of Interest

The authors declare no conflict of interest.

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