

# On the Application of the “Adjusted Winner” Conflict Resolution Methodology to Divorce Cases: An Introduction for Forensic Economists

David W. Boyd<sup>A</sup>

## Abstract

This paper examines the application of a recently patented conflict resolution methodology, known as “Adjusted Winner (AW)”, to the equitable distribution of assets and efficient resolution of contentious issues in divorce cases. The AW procedure is the only known resource allocation methodology whose output, at least in two-party disputes, is guaranteed to satisfy three meaningful criteria of fairness. The AW methodology is described, and then applied in a hypothetical divorce case.

Many forensic economists, at one time or another, have been asked by an attorney to apply their expertise to issues arising in a marital dissolution case. The 1996 Brookshire and Slesnick survey of forensic economists indicated that respondents earned an average of 6% of their forensic consulting business revenues from divorce cases,<sup>1</sup> a small but not insignificant percentage. And with well over one million divorces in the United States every year,<sup>2</sup> the opportunity for economists to ply their wares in these kinds of cases is not likely to disappear anytime soon.

The types of economic analyses performed in marital dissolution matters vary fairly widely, yet, beyond business valuation, scant attention in the forensic economic literature has been paid to the specialized economic analysis divorce cases often entail. The work that has appeared in print has tended to focus on the equitable distribution of future income streams and other human capital issues.<sup>3</sup> While these issues are certainly germane to economic work in divorce matters, forensic economists may find themselves involved in other, less traditional economic aspects of divorce proceedings.

---

<sup>A</sup> Associate Professor, Denison University.

Send all correspondence to David W. Boyd, Denison University, Department of Economics, Granville, OH 43023.

Email: [boyd@denison.edu](mailto:boyd@denison.edu)

---

<sup>1</sup> Brookshire and Slesnick (1996), p. 23.

<sup>2</sup> U. S. Census Bureau, *Statistical Abstract of the United States: 1999*, Table No. 155, p. 110.

<sup>3</sup> See, for example, Bartlett (1996), Means (1989), and Pepin (1995).

Noticeably absent from the literature of divorce economics is analysis involving the distribution of existing marital assets and the efficient resolution of other contentious marital issues. Since these problems are fundamentally about value, it is somewhat surprising that economics appears to have so little to say about them. Forensic economists practicing in the area of divorce may therefore find of interest a recent asset distribution and conflict resolution methodology, patented by mathematician Alan D. Taylor and political scientist Steven J. Brams. This procedure, called Adjusted Winner (AW), satisfies a number of properties economists are sure to find attractive. Indeed, at least in two-party disputes, it is the only currently known allocation procedure to satisfy three important criteria of fairness.

AW has been applied to the distribution of assets and conflict resolution in a number of contexts, including the Egyptian-Israeli negotiations at Camp David in 1978, the Clinton-Dole negotiations over the format of the 1996 Presidential debates, the division of territory after World War II, and the current dispute over the division of the Spratly Islands in the South China Sea.<sup>4</sup> Mediators have also recently used AW successfully in divorce cases.<sup>5</sup>

The purpose of this paper is to introduce forensic economists to the AW procedure in the context of divorce litigation. First, the fairness criteria that AW satisfies are briefly described. The AW methodology itself is then presented, and applied to a hypothetical divorce case. We then turn to a number of issues pertaining to the practical implementation of AW in divorce matters. A brief conclusion comments on ways in which forensic economists might facilitate the use of AW in divorce negotiations.

Emphatically, the exposition is not meant to be exhaustive. Rather, the intent is to briefly describe a workable asset distribution and conflict resolution procedure that some forensic economists may wish to explore further, should they be asked to assist with these problems in a marital dissolution case. Economists interested in a more thorough explanation of AW, or in examples outside the realm of divorce litigation, are referred to the two Brams and Taylor books and the references cited therein.<sup>6</sup>

## Allocation Properties

AW can be applied to the distribution of assets, the resolution of issues, or a combination of the two. For our purposes, assets will be defined as tangible objects, while issues will be matters about which the parties disagree. Thus, AW can be applied in the common divorce situation involving both common marital assets and disputed issues, such as the custody of a child or the choice of the school a child will attend.

Although AW can be utilized in negotiations involving multiple parties, we limit our discussion here to the divorce case of just two sides. It should be noted that some of the

properties AW satisfies in two-party disputes cannot be guaranteed in situations involving three or more parties.<sup>7</sup>

Although the AW methodology itself is described in some detail later in this paper, having a general understanding of this procedure will facilitate discussion of the properties AW satisfies. Briefly, AW requires that each party distribute 100 “points” across a list of contested assets and issues, which we will call “goods”. The points assigned reflect the relative subjective values the individual places on the various goods. Once the parties privately allocate their points, the AW procedure assigns each of the goods to one party or the other. As mentioned above, in two party situations the allocation satisfies a number of attractive fairness criteria, to which I now turn.<sup>8</sup>

### Envy-Freeness<sup>9</sup>

An allocation is *envy-free* if each party prefers its own allocation to the allocation assigned to the other party. In two-party negotiations, envy-freeness implies that each party perceives that it is receiving at least 50% of the total available value, a property sometimes called *proportionality*. As we will see later, this guarantee of proportionality provides a strong incentive for each party to refrain from attempting to strategically manipulate the process by assigning point totals that do not reflect one’s true subjective values. Moreover, an allocation that is envy-free is especially attractive in divorce cases, where feelings and emotions are often particularly salient.

### Equitability

Consider an allocation of assets and issues between two parties, *A* and *B*. An allocation is *equitable* if the percentage of the total available value that *A* perceives he has received is equal to the percentage of the total available value that *B* perceives she has received. That is, *A*’s subjective valuation of his share is equal to *B*’s subjective valuation of her share. While envy-freeness implies that *A* and *B* both perceive that they have received at least 50% of the total available value, equitability ensures that each side perceives that its share exceeds 50% by the same amount. In situations of divorce, where individuals may often be as concerned with how content the other side appears to be as they are about their own happiness, this can be quite an appealing property.

### Efficiency

An allocation is *efficient* if there is no other allocation that is better for one party without being worse for the other party. In common economic parlance, the allocation resulting from AW is Pareto-optimal.

<sup>7</sup> These properties also do not necessarily hold if one or more parties are not truthful about the valuations they place on some of the items or issues in dispute. For more on this possibility, see the discussion on potential strategic manipulation of point assignments in section IV.

<sup>8</sup> Readers interested in the proofs that AW satisfies the listed properties are referred to Brams and Taylor (1996). See, specifically, pp. 70-75.

<sup>9</sup> I use the term “envy-freeness” to be consistent with the Brams and Taylor exposition. Different terminology has been utilized by economists in other contexts. For example, envy-free allocations are called “fair” by Feldman and Kirman (1974) and Crawford (1977), and “superfair” by Baumol (1986).

<sup>4</sup> Brams and Taylor (1999).

<sup>5</sup> Lavery (1996 and 1997).

<sup>6</sup> Brams, Steven J. and Alan D. Taylor, *The Win-Win Solution: Guaranteeing Fair Shares to Everybody*, W. W. Norton & Company, 1999, and *Fair Division: From Cake-Cutting to Dispute Resolution*, Cambridge University Press, 1996.

One final additional attractive attribute of the AW methodology is that it assures that at most one item (an asset or an issue) be divided between the two parties. Rather than requiring a divorcing couple to liquidate a host of assets to reach an amicable parting, a divorce negotiation utilizing the AW procedure will require that at most one item be divided. In many cases, it is possible to reach a settlement in which no asset or issue need be divided.

## The AW Procedure

Suppose that two parties,  $A$  and  $B$ , are to allocate  $n$  items we will call “goods”. These goods could be either tangible assets, or well-defined issues. Before commencing with the allocation scheme itself,  $A$  and  $B$  must agree on the definitions of the  $n$  goods, and what it means to “win” each of the  $n$  goods. For example, if one of the goods is custody of a minor child, both sides have to agree that winning this good means that the loser will never see the child, or see the child only on weekends, etc.

Parties  $A$  and  $B$  begin by placing subjective values on winning each of the  $n$  goods. Let the values that parties  $A$  and  $B$  place on the  $n$  goods be  $X_1, X_2, \dots, X_n$  and  $Y_1, Y_2, \dots, Y_n$  respectively. Then define

$$x_i = 100 \frac{X_i}{\sum_{j=1}^n X_j} \quad \text{and} \quad y_i = 100 \frac{Y_i}{\sum_{j=1}^n Y_j}, \quad i = 1, 2, \dots, n$$

That is, the  $x$ 's and  $y$ 's are normalized to sum to 100.

These  $x$ 's and  $y$ 's are referred to as “points” in the AW procedure.

Next, reorder the  $n$  goods such that  $\frac{x_1}{y_1} \geq \frac{x_2}{y_2} \geq \dots \geq \frac{x_n}{y_n}$ . In

some sense, the  $n$  goods are ordered from  $A$ 's relative favorite to  $B$ 's relative favorite.

At this point, all the goods for which  $\frac{x_i}{y_i} \geq 1$ ,  $i = 1, 2, \dots, n$

are initially assigned to party  $A$ . The remaining goods are initially assigned to party  $B$ . In other words, if  $A$  places at least as high a value on the good as  $B$  does, initially assign it to  $A$ , while if  $B$  places a higher value on the good than  $A$  does, initially assign it to  $B$ . This is the “winner” part of the AW procedure.

Suppose that the first  $k$  goods are initially assigned to party  $A$ . Define  $X = \sum_{j=1}^k x_j$  and  $Y = \sum_{j=k+1}^n y_j$ . If  $X = Y$ , the procedure stops. If  $X > Y$ , then some goods must be transferred from  $A$  to  $B$  until  $X = Y$ . Likewise, if  $Y > X$ , then some goods must be transferred from  $B$  to  $A$  until  $Y = X$ . This transfer process, the “adjusted” portion of AW, is what guarantees equitability.

Suppose  $X > Y$  after the initial allocations. Then, begin by transferring good  $k$  from  $A$  to  $B$ . Continue to transfer good  $k-1$ ,  $k-2$ , etc. until  $X = Y$ . If  $Y > X$  after the initial allocations, then begin by transferring good  $k+1$  from  $B$  to  $A$ . Continue to transfer good  $k+2$ ,  $k+3$ , etc. until  $X = Y$ . The order in which these goods are transferred is what guarantees efficiency.

That is, the transfer order assures that the value gained by one party minimizes the value given up by the other party.

It may well be that to achieve  $X = Y$  a fraction of a good needs to be transferred from one party to the other. In the AW methodology, this is the one item which may need to be divided. A hypothetical example might better illustrate how these precise division percentages are determined.

## Hypothetical Divorce Case

Suppose that Adam and Beth have decided to end their marriage and have agreed on the division of most of their assets and the resolution of most of the issues pertaining to the divorce. Seven assets and issues remain to be divided between or resolved by Adam and Beth: 1) a house, 2) a vacation condominium, 3) custody of their one minor child, 4) a sailboat, 5) a collection of antique shaving mugs, 6) two pet dogs, and 7) stock options, currently in both their names. These items are listed in column 1 of Table 1. After careful consideration, Adam and Beth have placed subjective values on these seven items. Their respective monetary valuations are shown in columns 2 and 4 Table 1.<sup>10</sup> Given these monetary valuations, the normalized points for the two parties are shown in columns 3 and 5 of Table 1. As described in the AW methodology above, the seven items listed in column 1 of Table 1 are arranged in descending order of the ratio of Adam's point assignment to Beth's point assignment. These ratios are shown in column 6 of Table 1.

Initially, the stock options, the antique shaving mug collection, the vacation condominium, and the boat are assigned to Adam (these four goods are shown in bold in column 1), leaving him with 65 of his points. The house, the dogs, and custody of the minor child are initially assigned to Beth, granting her 62 of her points. Because Adam's initial point total exceeds Beth's initial point total, some item or items must be transferred from Adam to Beth, until their point allotments are equal. The item initially assigned to Adam with the smallest ratio of Adam's point assignment to Beth's point assignment is the boat. If the boat were entirely transferred from Adam to Beth, Adam's point total would drop to 60, while Beth's point total would rise to 66. Thus, only a fraction of the boat needs to be transferred. It is the only good being allocated that must be divided. Let  $\alpha$  be the portion of the boat that needs to be transferred from Adam to Beth to equate the final point allocations of the two parties. Thus, the portion,  $\alpha$ , of the boat that needs to be transferred from Adam to Beth is the solution to the equation  $65 - 5\alpha = 62 + 4\alpha$ , or  $\alpha = 1/3$ . That is, one third of the boat must be transferred from Adam to Beth to achieve equitability. In the end, then, Adam is allocated the stock options, the mug collection, the condo, and 2/3 of the boat. Beth receives the house, the dogs, custody of the minor child, and 1/3 of the boat. Both Adam and Beth receive 63.33% of the subjective value each assigns to the pool of goods to be divided.<sup>11</sup>

<sup>10</sup> Note that the subjective valuations need not be equal.

<sup>11</sup> The degree to which the final allocations exceed 50% depends in part on the disparity between the values the two parties assign to the goods. The

(1)	(2)	(3)	(4)	(5)	(6)
Item	Adam's Assigned Value	Adam's Points	Beth's Assigned Value	Beth's Points	Adam to Beth Ratio
<b>Options</b>	\$ 60,000	10	\$ 20,000	4	<b>2.50</b>
<b>Antiques</b>	150,000	25	70,000	14	<b>1.79</b>
<b>Vacation Condo</b>	150,000	25	80,000	16	<b>1.56</b>
<b>Boat</b>	30,000	5	20,000	4	<b>1.25</b>
House	150,000	25	200,000	40	0.63
Dogs	6,000	1	10,000	2	0.50
Custody	54,000	9	100,000	20	0.45
<b>Total</b>	<b>\$600,000</b>	<b>100</b>	<b>\$500,000</b>	<b>100</b>	

Note that the sailboat need not be liquidated to achieve equitability. If Adam and Beth are told that one of them is to receive 1/3 of the sailboat and that the other is to receive 2/3, but not which of them is to receive which portion, they may very well reach an agreement as to what a 1/3 share and a 2/3 share mean. For example, they may agree that a 1/3 share means having full access to the boat four months out of the year, while a 2/3 share implies exclusive rights for the other eight months. Of course, if such an agreement could not be reached, the boat could either be sold, with Adam receiving 2/3 of the price, or one party could opt to purchase the other party's share.

## Practical Considerations

In this section, I discuss some issues economists may find germane in utilizing AW in divorce cases.

### **Potential Strategic Manipulation of Point Assignments**

Is it possible for one party to strategically manipulate its point assignments so as to increase his or her final point assignment? Brams and Taylor show that while it is theoretically possible for one party to gain by assigning carefully-calculated false values to some items,<sup>12</sup> they argue that a party who follows this strategy will almost always end up with a smaller percentage of the total available value than he would have received if he had assigned point values honestly. They conclude that in virtually all applications, including situations of divorce where each party is apt to possess knowledge about the relative values the other party

places on the goods in question, successful strategic manipulation is virtually impossible.<sup>13</sup>

In practice, a party attempting to gain by strategic point manipulation exposes himself to three risks. First, assigning false values removes the guarantee of envy-freeness and proportionality. That is, it becomes possible that the strategic manipulator will receive less than 50% of the total available subjective value. Second, since the number of available points to be allocated is fixed, increasing the point assignment on one good to increase the chances of winning it necessarily entails a reduction in the points assigned to other goods, thereby raising the possibility that the manipulator will lose a good he would otherwise have won. Finally, because the final allocation is equitable, increasing the perceived number of points a manipulator is initially assigned implies that he will lose a correspondingly larger share during the "adjustment" phase of AW.

As a concrete example of potential strategic manipulation, suppose that Beth were to try to exploit her knowledge that Adam's relationship with his child is somewhat rocky, and that he therefore is likely to place a relatively low value on custody of the child. In fact, suppose that Beth knows exactly the value that Adam will assign to custody. She then reduces the value she strategically assigns to custody from her true valuation of \$100,000 down to \$55,000, which is just above the true value Adam places on custody (\$54,000). She then assigns the extra \$45,000 value to the stock options, which allows her to increase her strategic valuation of the options from \$20,000 to \$65,000, which is just high enough to have the options initially assigned to Beth, rather than Adam. Beth's strategic valuations are shown in column 4 of Table 2.

more the values differ, the greater will be the percentage of the total available value each party perceives it has won.

<sup>12</sup> The problem of not inducing honest responses is common in mechanism design (see Osborne and Rubinstein (1994), Chap. 10). According to the so-called "revelation principle" (Myerson (1991), Chap. 6 or Fudenberg and Tirole (1991), pp. 253-7), honesty can always be induced, but in so doing efficiency is often sacrificed (Tadenuma and Thomson (1995)).

<sup>13</sup> To be more precise, they argue that in practice *perfect* knowledge about the other party's assigned values is necessary for manipulation to be successful.

(1)	(2)	(3)	(4)	(5)	(6)
Item	Adam's Assigned Value	Adam's Points	Beth's Assigned Value	Beth's Points	Adam to Beth Ratio
<b>Antiques</b>	\$150,000	25	\$ 70,000	14	<b>1.79</b>
<b>Vacation Condo</b>	150,000	25	80,000	16	<b>1.56</b>
<b>Boat</b>	30,000	5	20,000	4	<b>1.25</b>
Custody	54,000	9	55,000	11	0.82
Options	60,000	10	65,000	13	0.77
House	150,000	25	200,000	40	0.63
Dogs	6,000	1	10,000	2	0.50
<b>Total</b>	<b>\$600,000</b>	<b>100</b>	<b>\$500,000</b>	<b>100</b>	

Now, only the antiques, the condominium, and the boat are initially assigned to Adam. The options are now initially assigned to Beth, as are the house and the dogs, and custody of the child. Note that, although she reduced the value she placed on custody of the child, that item is still initially assigned to Beth. Adam initially receives 55 of his points. The false values that Beth places on the goods initially assigned to her indicate that she is initially assigned 66 of her points. Since she is initially assigned more points, some good or goods must be transferred from Beth to Adam. The good initially assigned to Beth with the highest ratio of Adam's point assignment to Beth's point assignment is custody of the child. If custody were entirely transferred from Beth to Adam, Adam's point total would increase to 64, while Beth's announced point total would fall to 55. (In fact, her true point total would fall by 20 points, since the strategic valuation she placed on custody was artificially low). Therefore, a fraction of custody must be transferred from Beth to Adam. The appropriate portion is given by the solution to the equation  $55 + 9\alpha = 66 - 11\alpha$ , or  $\alpha = 11/20 = 55\%$ . Adam ends up with the antiques, the condo, the boat, and 55% custody of the child, giving him 59.95 points. Beth is assigned the options, the house, the dogs, and 45% custody. It appears, based on her strategic point assignments, that she also receives 59.95 of her points. Yet, her final allocation yields just 55 of her *true* points (these come from Table 1, not Table 2), which is less than the 63.33 points she would have received had she assigned her values truthfully.

**Separable Goods**

For the final point assignments in AW to be meaningful, the goods themselves must be separable for both parties. A good is *separable* for a party if the value that party assigns to winning the good does not depend on whether the party wins or loses any of the remaining goods. For example, in the Adam and Beth divorce, if the house is landlocked and the vacation condominium is located adjacent to water, then the value Adam or Beth place on the boat might be higher if

the winner also receives the condominium. In this case, the boat is not separable from the condominium. In practice, if not all items are separable, separability can usually be achieved by lumping goods together into larger packages. In the Adam and Beth example, the boat could be bundled with the condominium to forge a vacation package, separable from the remaining goods. However, the fewer and the larger the items on the list of goods to be allocated become, the smaller the final point totals are likely to be. That is, the extent to which the final allocations exceed 50% of the total available value depends in part, and is directly related to, the number of goods to be assigned.

**Advantages of Using AW in Divorce Negotiations**

AW is an attractive procedure in divorce cases for a number of reasons. Perhaps most important, the rigid, formal methodology utilized by AW is in stark contrast to the informal and ad-hoc negotiations often utilized in actual marital dissolution proceedings. The fixed procedure implies that it is pointless for any party to devote time or energy trying to influence or otherwise mold the AW procedure to his or her advantage. Moreover, because it is virtually impossible to gain by misrepresenting the true values one places on the items to be allocated, AW minimizes the posturing and other strategic behavior often found in less structured procedures. Indeed, in analyzing the informal processes in actual divorce negotiations, one study concludes:<sup>14</sup>

Based on open-ended interviews with the parties and lawyers in twenty-five informally settled divorce cases, this study finds that the informal process is often contentious, adversarial, and beyond the perceived control of one or both parties. Although settlement in some cases reflects flexibility, party participation, and true agreement, in most cases it reflects unequal financial resources, *procedural support*, or emotional stamina. *Parties*

<sup>14</sup> Erlanger, et. al. (1987), p. 585.

*report settling issues such as child support according to nonlegal, situational factors -- particularly their relative impatience to finalize the divorce -- and mutual satisfaction with settlement terms is low. (emphasis added)*

Another study found that the standard, largely ad-hoc negotiations relied upon in divorce cases left one-third to over one-half of divorced individuals “seriously unhappy” with the final settlement.<sup>15</sup>

Further, the subjective valuation and point allocation aspects of the AW methodology should help divorcing individuals separate the assets and issues in dispute from the powerful emotions and bittersweet feelings attached to them. Requiring participants to allocate hard points to the goods and issues forces each party to think long and hard about what is truly most important.

Moreover, when AW is facilitated by a neutral third party, such as a mediator or even a forensic economist, the values the parties place on the goods and issues need not be made public. This aspect could be useful in situations in which one party would find a subjective valuation embarrassing if discovered by an outside party, i.e., Adam would probably prefer that his child not learn of the relatively low value he placed on custody of that child.

Because the final allocation under AW depends on the subjective values each party places on the list of available goods and issues, rather than values determined by a judge or the market or any other external party or other mechanism, it is quite possible for each party to receive two-thirds to three-fourths of what he or she perceives to be the total available value. This result alone may be enough for divorcing parties to be willing to give AW a try.

## Conclusions

Forensic economists who practice in the area of divorce may find themselves asked to assist in the equitable distribution of common assets or the resolution of other contentious marital issues. In these circumstances, divorcing individuals or their agents might wish to explore the possibility of utilizing the Adjusted Winner procedure. Indeed, frustrated divorcing parties may actually be quite anxious to listen to an independent and learned forensic economist’s description of a new settlement methodology arising from within academia. If so, the forensic economist should be able to facilitate the application of AW in a number of ways. First, the forensic economist could assist in defining the goods and issues to be divided, help the parties decide what it means to win each item, and assure that each item is separable for both parties. The economist could explain to both sides the fairness criteria that AW satisfies. He or she could illustrate, perhaps through a hypothetical example or two, the futility of attempting to strategically manipulate the process by assigning false valuations to any good in question. The economist could work with one or both parties to assure that the assigned valuations or allocated points are proper and accurate, and that the final point assignments reflect correct relative valuations. If a mediator is not employed, the economist could actually perform the AW procedure. Finally, the forensic economist may help prevent liquidation of the sole asset or issue to be divided by suggesting various ways in which appropriate percentages could be reached through shared ownership or utilization. To be sure, the multiple aspects of AW assure that any forensic economist involved in its application in a divorce case will be required to use at least some skills not often utilized in the more typical kinds of cases in which forensic economists are usually retained.

---

<sup>15</sup> Kressel (1985), p. 12.

## References

- Bartlett, Robin L., "Discovering Diversity in Introductory Economics", *Journal of Economic Perspectives*, 10(2), 1996, pp. 141-153.
- Baumol, William J., *Superfairness: Applications and Theory*, MIT Press, 1986.
- Brams, Steven J. and Alan D. Taylor, *The Win-Win Solution: Guaranteeing Fair Shares to Everybody*, W. W. Norton & Company, 1999.
- Brams, Steven J. and Alan D. Taylor, *Fair Division: From Cake-Cutting to Dispute Resolution*, Cambridge University Press, 1996.
- Brookshire, Michael and Frank Slesnick, "A 1996 Study of 'Prevailing Practice' in Forensic Economics", *Journal of Forensic Economics*, 10(1), 1997, pp. 1 - 28.
- Crawford, Vincent, "A Game of Fair Division", *Review of Economic Studies*, 44(2), 1977, pp. 235-47.
- Erlanger, Howard S., Elizabeth Chambliss, and Marygold S. Melli, "Participation and Flexibility in Informal Processes: Cautions from the Divorce Context", *Law & Society Review*, 21(4), 1987, pp. 585-604.
- Feldman, Allan and Alan Kirman, "Fairness and Envy", *American Economic Review*, 64(6), 1974, pp. 995-1005.
- Fudenberg, Drew and Jean Tirole, *Game Theory*, MIT Press, 1991.
- Kressel, Kenneth, *The Process of Divorce: How Professionals and Couples Negotiate Settlements*, Basic Books, 1985.
- Lavery, Norman G., "Dividing Things Fairly or Fair Division in the Real World - Part II", *The Canadian Journal of Dispute Resolution*, No. 13, July 1997, pp. 4-5.
- Lavery, Norman G., "Mathematics and Mediation?", *The Canadian Journal of Dispute Resolution*, No. 10, October, 1996, pp. 4-5.
- Means, T. S., "The Case for Community Reimbursement Upon Divorce for a Spouse's Education", *Journal of Forensic Economics*, 2(2), 1989, pp. 33-40.
- Myerson, Roger, *Game Theory: Analysis of Conflict*, Harvard University Press, 1991.
- Osborne, Martin J. and Ariel Rubinstein, *A Course in Game Theory*, MIT Press, 1994.
- Pepin, Raymond A., "On Using PBGC Methodology to Evaluate Defined Benefit Pensions in Divorce Cases", *Journal of Forensic Economics*, 8(2), 1995, pp. 195-197.
- Tadenuma, Koichi and William Thomson, "Games of Fair Division", *Games and Economic Behavior*, 9(2), 1995, pp. 191-204.