

# Can Lessons from Game Theory be Applied to Family Law Negotiations?

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## **Abstract**

The author suggests using lessons from Game Theory to improve the negotiation process and to construct more fitting agreements upon the breakdown of the family unit in the cases of separation or divorce. Currently many settlement agreements are inappropriate for the parties for a variety of reasons, including not establishing the parties' true interests during the negotiations. Furthermore, an inappropriate agreement may not be reopened by the court, given strict procedural and jurisprudential requirements. Game Theory lessons promote communication, cooperation, and forgiveness without allowing either party to be manipulated. These elements, already found in Collaborative Law, favour incorporating the lessons from Game Theory into this negotiation process.

## **Abrégé**

L'auteur suggère utiliser les leçons tirées de la Théorie des Jeux afin d'améliorer le processus de négociation dans le contexte de séparation ou divorce et d'élaborer de meilleures ententes. Dans le contexte actuel, maintes ententes de règlement sont inappropriées pour nombre de raisons, notamment par défaut de reconnaître les réels intérêts des parties au moment des négociations. La réouverture des ententes de règlement négociées est aussi difficile à cause des exigences des procédures et de la jurisprudence. Les leçons de la Théorie des Jeux favorisent la communication, la coopération et le pardon sans que les parties abdiquent leur intérêt. Comme ces éléments rejoignent les objectifs du droit Collaboratif, il devient opportun d'incorporer les leçons de la Théorie des Jeux dans ce processus de négociation.

## **Acknowledgments**

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## INTRODUCTION

Consider O. Henry's short story the "Gift of the Magi."<sup>1</sup> It is a tale of love and sacrifice with an unsatisfactory, although touching, ending. Both the husband and wife failed to accomplish what they set out to do because of a fundamental lack of cooperation. Now, you could say that they did accomplish the larger goal of showing each other how they loved and cared for each other; enough to sacrifice their greatest possessions, the wife's hair and the husband's pocket watch, but ultimately, without her hair the wife could not use the fancy combs her husband purchased by selling his pocket watch, and without the pocket watch he could not use the chain she had purchased with her locks.

This couple shared a devotion to each other, the same interests, and they started with the same goals, still their immediate goals were thwarted by their desire to keep their gifts a surprise. Imagine now how a separating couple can fail when they do *not* have similar interests nor a desire to please each other and yet somehow they have to make perceived sacrifices to ensure that each spouse obtains what he or she needs and each has his or her interests satisfied in some way.

This is the complicated, multi-faceted problem faced by jurists in family law every day as they try to handle negotiations with, or for, their separating clients. In this thesis, I will apply *Game Theory* to family law negotiations in an attempt at improving the social dynamics of the negotiation process as well as the results. The ultimate goal is

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<sup>1</sup> O. Henry, The Gift of the Magi (China: Running Press Miniature Editions, 2001).

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to have the warring couples put down their boxing gloves long enough to understand that by having their spouse win they will win as well. Presumably this will not only improve the negotiation process and the true validity of their separation agreements, but also ultimately improve their future relations.

Economics Nobel Laureate, Herbert A. Simon, expressed the following:

The distribution of the world's goods owes little to virtue.... There must be better games. If I were to select a research problem without regard to scientific feasibility, it would be that of finding how to persuade human beings to design and play games that all can win.<sup>2</sup>

This is also the goal of this thesis but on a less lofty plane. I will attempt in this paper to define and apply Game Theory to existing negotiation models in the family law context to determine whether Game Theory is a feasible addition to negotiation strategies such as traditional courthouse negotiations that take place leading up to trial, quasi-cooperative negotiations such as mediation, and cooperative negotiations found in Collaborative Law. I will also draw on my own experiences as a family law practitioner where appropriate.

In brief, Game Theory “is a branch of mathematical analysis developed to study decision making in conflict situations.”<sup>3</sup> Game theory can introduce scientifically proven elements to support the belief that cooperation between parties can produce better agreements for both. Further, Game Theory can demonstrate how a lack of cooperation and communication between the parties can ultimately be detrimental to both as well.

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<sup>2</sup> Steven J Brams and Alan D. Taylor, The Win-Win Solution: Guaranteeing Fair Shares to Everybody (New York: W.W. Norton & Company, Inc., 1999) at 18.

<sup>3</sup> Web Dictionary of Cybernetics and Systems, s.v. “Game Theory” online: Principia Cybernetica Web <[http://pespmc1.vub.ac.be/ASC/GAME\\_THEOR.htm](http://pespmc1.vub.ac.be/ASC/GAME_THEOR.htm)>.

Game Theory can also be used to visually understand the issues at play by taking the time to lay out the issues and map how different actions will produce certain results. This can allow the parties to think before they act by attempting to predict behaviour and the consequences of the behaviour, all the while encouraging the need for cooperation between the parties. In addition, the application of certain Game Theory strategies can provide a negotiator with techniques that will assist in obtaining a win-win separation agreement. Finally, I will look closely at Collaborative Family Law to demonstrate how the strategies encouraged in this process are highly compatible with the descriptive and normative lessons derived from Game Theory.

The application of mathematics is proving to be more and more interesting to the field of family law. "Lately the range and depth of the economic approach to law have been enlarged by developments in Game Theory, signalling theory, and the economics of nonrational behaviour..."<sup>4</sup> I will focus on Game Theory as an addition to the current applications mathematics to family law as with the child support and spousal support guidelines. Game theory can be succinctly described as follows:

**Game theory** is a hybrid branch of applied mathematics and economics that studies strategic situations where players choose different actions in an attempt to maximize their returns. First developed as a tool for understanding economic behavior and then by the RAND Corporation to define nuclear strategies, game theory is now used in many diverse academic fields, ranging from biology and psychology to sociology and philosophy. Beginning in the 1970s, game theory has been applied to animal behavior, including species' development by natural selection. Because of games like the prisoner's dilemma, in which rational self-interest hurts everyone, game theory has been used in political science, ethics and philosophy. Finally, game theory has recently drawn attention from computer scientists because of its use in artificial intelligence and cybernetics.<sup>5</sup>

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<sup>4</sup> Richard A. Posner, *Frontiers of Legal Theory* (London: Harvard University Press, 2001) at 35.

<sup>5</sup> *Wikipedia*, s.v. "Game Theory" online: Wikipedia < [http://en.wikipedia.org/wiki/Game\\_theory](http://en.wikipedia.org/wiki/Game_theory) >.

Game Theory is a term used in economics for what psychologists call the *theory of social situations*. The fields of mathematics/economics as well as psychology look at precisely the same subject matter, that is, how people interact in conflict situations.<sup>6</sup>

Applying science, especially mathematics, to social interactions is attractive to many disciplines. I argue that science has a way of lending credence to our opinions and beliefs. We live in a time when technology is in the forefront in our lives and we seem to feel comfortable when our daily beliefs can be validated by science. It is this very principle that will be examined in the context of family law negotiations. We have already recently seen how mathematical formulas are being introduced to family law procedure with the application of the Child Support Guidelines<sup>7</sup> in May 1997. In an attempt to limit judicial discretion and provide stability of support orders across Canada,<sup>8</sup> the Guidelines were developed using mathematical formulas and statistics to obtain realistic support figures for children whose parents are in a variety of income brackets.<sup>9</sup>

Certain parameters about the guidelines are known and must be accepted;<sup>10</sup> therefore, it is presumably easier for a payor to acknowledge that he or she must pay child support according to a scientifically developed formula than it is to comply with

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<sup>6</sup> David Levine, "What is Game Theory" online: UCLA <<http://levine.sscnet.ucla.edu/>>. See also Joseph Greenberg, *The Theory of Social Situations: An Alternative Game-Theoretic Approach* (Cambridge: Cambridge University Press, 1990).

<sup>7</sup> *Regulation Respecting the Determination of Child Support Payments*, R.L.Q. 1996, c. 68 and L.Q. 2004, c. 5. Sections 585 to 596 of the *Civil Code* govern the support of children, with sections 587.1 to 587.3 implementing the child support rules. Sections 825.8 to 825.14 of the *Code of Civil Procedure* regulate the procedure for determining child support.

<sup>8</sup> Jean-Marie Fortin & Jocelyn Verdon, *Aliform annoté Barème québécoise: Aspects civils et fiscaux*, 2d ed. (Brossard: Publications CCH Ltée, 2004) at 5ff. However, the reader should examine the exceptions to this as found and developed by the Supreme Court of Canada for particular factual circumstances in *Contino v. Leonelli-Contino*, [2005] 3 S.C.R. 217 and *Francis v. Baker*, [1999] 3 S.C.R. 250.

<sup>9</sup> *Ibid.* at xvi.

<sup>10</sup> The use of the Child Support Guidelines is of public order subject to the *Regulation Respecting the Determination of Child Support Payments*.

paying for a variety of expenses submitted by a spouse and their attorney. Even though there is still room for discretion, the guidelines are providing a stable starting point to determining child support.<sup>11</sup> The same will hopefully be true of the new Advisory Spousal Support Guidelines<sup>12</sup>, which also rely on mathematical formulae. The advent of the child support guidelines has started a transformation in our legal culture. The mathematical (formulaic) approach fosters average justice instead of individualized justice. With the Advisory Spousal Support Guidelines, as with the Child Support Guidelines, support can now be determined without budgets.<sup>13</sup> As an extension of these uses of mathematical analyses in family law, it would seem that parties involved in family law disputes may be ready to embrace the scientific principles of Game Theory in their negotiations.<sup>14</sup> I argue that *certain* lessons from the Game Theory approach should only apply to spousal support and property division. The mathematical elements of average justice should not apply to child custody issues.

Game theory provides descriptive and normative elements that can be applied to negotiation strategies. The goals once again are to obtain “better” separation agreements so that future relationships can possibly be salvaged, a crucial factor when children are involved, and so that the separation agreements actually satisfy both spouses’ interests

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<sup>11</sup>Fortin, *supra* note 8 at 1. See also D.A. Rollie Thompson, “Who Wants to Avoid the Guidelines? Contracting Out and Around” (2001) 19 Can. Fam. L.Q. 1, wherein the need for a more creative use of the guidelines is suggested.

<sup>12</sup>Carol Rogerson & Rollie Thompson, “Spousal Support Advisory Guidelines: A Draft Proposal” online: Department of Justice Canada <<http://www.justice.gc.ca/en/dept/pub/spousal/project/index.html>>

<sup>13</sup> *Ibid.*

<sup>14</sup>Mathematical equations cannot be applied to custody disputes as the element of best interests cannot be quantified in this fashion.

and needs. Given the difficulties faced by litigants attempting to reopen negotiated agreements, attorneys and their clients should strive to “get it right the first time.”

In family law, a large percentage of cases end with a separation agreement.<sup>15</sup> This alone should create a significant impetus to construct these domestic contracts in a way that is beneficial to both parties. As a general rule, a negotiated agreement is better for all involved. Not only does it reduce costs in most cases, but it also allows for the parties to have an input in decisions that directly affect their lives.<sup>16</sup> Furthermore, if a party believes he or she had a say in creating the agreement, he or she will be more likely to respect it.<sup>17</sup> The alternative of litigation can be detrimental to both parties.<sup>18</sup> Litigation is a zero-sum game meaning that one party must lose for the other to win.<sup>19</sup> In fact, it can be even worse than a win-lose game in that both parties can end up *losing* because of the legal costs involved in litigation.<sup>20</sup>

Given that a subjectively bad agreement may not be easily corrected should a party try to *reopen* it, there is even more motivation in developing agreements which both parties can live with right from the beginning. One now finds the task extremely difficult,

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<sup>15</sup> Richard J. Kulerski, “What is Collaborative Law” online: Divorcenet <[http://www.divorcenet.com/states/illinois/ilart\\_14](http://www.divorcenet.com/states/illinois/ilart_14)> at 1.

<sup>16</sup> Penelope Eileen Bryan, “Women’s Freedom to Contract at Divorce: A Mask for Contextual Coercion” (1999) 47 Buff. L. Rev. 1153 at 1153-1154. See also Robert H. Mnookin, & Lewis Kornhauser, “Bargaining in the Shadow of the Law: The Case of Divorce” (1979) 88 Yale L. J. 950.

<sup>17</sup> Nicholas Bala, “Domestic Contracts in Ontario and the Supreme Court Trilogy: “A Deal is a Deal” (1998) 13 Queen’s L. J. 1 at 2; Bryan, *supra* note 16 at 1155.

<sup>18</sup> John Zeleznikow, & Emilia Bellucci, “Family Winner: Integrating Game Theory and Heuristics to Provide Negotiation Support.” online: Proceedings of Sixteenth International Conference on Legal Knowledge Based Systems. IOS Publications, Amsterdam, Netherlands: 21-30. <<http://www.jurix.nl/pdf/j03-03.pdf>> at 1.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.* at footnote 1.

given the line of jurisprudence from the Trilogy<sup>21</sup> and leading up to the Supreme Court decision in *Miglin v. Miglin*.<sup>22</sup> The legal trend is to maintain validly contracted agreements. Therefore, it has become all the more important to ensure that agreements are well drafted, equitable, and actually reflect the needs and the will of the parties. This line of reasoning is the same with marriage contracts, as was seen in *Hartshorne v. Hartshorne*,<sup>23</sup> wherein the Supreme Court upheld the principle of freedom of contract.<sup>24</sup> Even though the Supreme Court left open the door to judicial intervention in *Miglin*, the bar is set very high. The lesson that can be drawn from both *Miglin* and *Hartshorne* is that parties should not sign a contract unless they are prepared to live with it.<sup>25</sup> Many of the techniques used throughout this thesis apply primarily to property issues given that with the advent of the guidelines there are already mathematical solutions to child and spousal support.

It is very clear that once capable adults enter into a domestic agreement, even though it may very well be one of the most difficult experiences in their lives, they will be held to the terms of their agreement. Even though we are dealing with married parties, the parties' civil status will not change the interpretation of the contract. Carol Rogerson explains:

The modern spousal relationship was reconfigured in contract rather than status. The new view of marriage was as a contract between two autonomous and equal individuals freely choosing the structure of their relationship to meet their own needs and aspirations, without the paternalistic intervention of the state.<sup>26</sup>

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<sup>21</sup> *Pelech v. Pelech* [1987] 1 S.C.R. 801, *Richardson v. Richardson* [1987] 1 S.C.R. 857, *Caron v. Caron* [1987] 1 S.C.R. 892.

<sup>22</sup> *Miglin v. Miglin* [2003] 1 S.C.R. 303, 224 D.L.R. (4<sup>th</sup>) 193, 34 R.F.L. (5<sup>th</sup>) 255.

<sup>23</sup> *Hartshorne v. Hartshorne* [2004] 1 S.C.R. 550

<sup>24</sup> Martha Bailey, "Marriage à la Carte: A comment on *Hartshorne v. Hartshorne*" (2004) 20 Can. J. Fam. L. 249 (Proquest) at 1.

<sup>25</sup> *Ibid.* at 2.

<sup>26</sup> Carol Rogerson, "They are Agreements Nonetheless" (2003) 20 Can J. Fam. L. 197 at 198. See also Robert Rowthorn, "Marriage and Trust: some lessons from economics" (1999) 23 Cambridge J. of

Inevitably, however, not all agreements are suitable for the parties for a variety of reasons; including a lack of self-understanding about the parties' own true interests. It is up to family law lawyers to understand this and attempt to obtain an agreement for their client that the client can live with.<sup>27</sup>

The overall pervasive dynamic in traditional negotiations leads to a win-lose scenario as both parties feel that it is "every man for himself."<sup>28</sup> In reality, however, it is only a win-win mentality that will ultimately reflect both parties' interests. Given this, a new approach to negotiations should be developed. Such an approach may be made possible by applying Game Theory, as it embraces the concept of a win-win approach.

This paper will examine whether it is possible to apply Game Theory to family law negotiations in an attempt to produce agreements that the parties can actually live with in the years following their settlement. In brief, this will be accomplished by looking at each party's *interests* instead of his or her *rights*, through the application of a mathematical analysis as it pertains to financial matters, and by using what lessons from Game Theory such as communication, cooperation, and forgiveness can tell us about how we can better negotiate to achieve better agreements. I will also discuss how the use of a mathematical analysis is *inappropriate* in cases of custody or access.<sup>29</sup>

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Economics 661.

<sup>27</sup> Bala, *supra* note 17 at 3.

<sup>28</sup> Spain, Larry L. "Collaborative Law: A Critical Reflection on Whether a Collaborative Orientation Can Be Ethically Incorporated into the Practice of Law" (2004) 56 Baylor L. Rev. 141 at 144.

<sup>29</sup> This is not to say that the lessons learned from the normative strategies of game theory cannot be applied to the issue of custody. The general lessons from game theory strategies including the need in negotiations for cooperation and communication can easily be applied to child custody issues.

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Chapter 1 of this paper will guide the reader through some of the problems with negotiated separation agreements looking specifically at agreement formation and how some agreements are created from a male-perspective which may not satisfy both parties' needs. I refer to this throughout the paper as "gender bias." Without oversimplifying the complex dynamics between men and women and particularly without minimizing the experiences of women, one can see that the formation of Domestic Contracts are frequently occasions for witnessing unequal bargaining positions between spouses, with the wife traditionally being the weaker party resulting in inequitable contracts for women. The fact that more and more women are entering the workplace does not necessarily affect the roles assumed by the parties within the matrimonial framework. This issue brings up the problem of applying traditional contract ideas to marital contracts. In the former, autonomy, and freedom of choice are paramount and do not take into consideration the specific difficulties with bargaining power in domestic contacts. This concept has been discussed by the Supreme Court of Canada on several occasions and quite eloquently by Justice Lebel in the dissent of *Miglin*<sup>30</sup> and will be further examined in this paper. The paper will then examine the procedural and jurisprudential difficulties with overturning an agreement. In Chapter 2, the focus will shift to describe Game Theory and Collaborative Law, examining the similarities in approach between the two. In Chapter 3, Lessons from Game Theory will be applied to family law and finally, in Chapter 4, the application of Game Theory to family law will be critiqued and mediation techniques such as integrative bargaining will be examined.

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<sup>30</sup> *Miglin*, *supra* note 22 at paragraph 142ff. See also Martha Minow, *Making all the Difference, Inclusion, Exclusion, and American Law* (Ithaca: Cornell University Press, 1990) Chapter 9.

While a very significant purpose of this thesis is to arrive at recommendations for improving the handling of separation agreements in the actual practice of family law, other important purposes are to advance the scholarly literature in three key areas:

(1) The use of Game Theory as a tool for Collaborative Law practice has not yet been considered in-depth by the scholars writing about Collaborative Law. In particular, the precise means of applying Game Theory and the limitations in that regard have not been probed in the literature in regard to family law. (2) The field of Game Theory itself, at the crossroads of Mathematics and social situations, is also extended by the tools recommended for use in family law as discussed in detail in this paper. (3) As well, this paper treats some of the gender bias issues raised by feminist scholars and suggests certain practical and innovative means of addressing them through the use of Game Theory. As such, it is expected that this paper will be helpful for practitioners who are looking to employ Game Theory and Collaborative Law more effectively, but more importantly it aspires to make a contribution of significance to the academic discussions about ensuring equality within the formation process and substance of domestic agreements between separating spouses.

**Chapter 1****STATEMENT OF THE PROBLEM****A. NEGOTIATED SETTLEMENTS AND GENDER BIAS**

Whether one is referring to domestic contracts, separation agreements, or transactions, similar problems can be found. One such serious problem is what I refer to generally as *gender bias* throughout this paper. As discussed, for the purposes of this paper, the term “gender bias” encompasses the historical disparity in bargaining power existing between spouses that traditionally disadvantage women. This problem will be further examined alongside the school of liberal feminism later in this paper. Certainly power imbalances in domestic contract formation are not a universal constant and the reader must keep in mind that this paper is only addressing situations where problems with domestic contracts arise. The author does not intend in any way to detract from the existence of well formulated and fair contracts that may exist between parties. The problems with domestic contracts not necessarily providing parties with what is fair and equitable in regards to all of their interests must be addressed in this paper to fully understand why proper contract formation is necessary, especially considering the difficulties associated with requesting courts to overturn such agreements at a later date.

Some domestic contracts can discount the experience of women and in so doing deprive women of true autonomy and choice. Contracts *freely* entered into can further trap women in disadvantage and degradation.<sup>31</sup> In addition, domestic contracts can

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<sup>31</sup> Gillian K. Hadfield, “The Dilemma of Choice: A Feminist Perspective on the Limits of Freedom of

enforce an impoverished and acerbic vision of relationships. Contracts often pay no attention to human interaction qualities of love, care and responsibility,<sup>32</sup> elements that are of importance to women. Females often define themselves and their worth through caring for others. While women tend to put special importance on care and responsibility in relationships, men tend to emphasize rights and rules. Therefore, when conflicts arise men may look for solutions in rules while women may seek solutions that will preserve relationships. "In short, while males tend to proceed by the "ethic of rights", females tend to rely on an "ethic of care."<sup>33</sup> If this is not acknowledged in the negotiation of these agreements or worse still, if the individual interests are used as a weapon in the negotiation process, it is difficult to see how these agreements could provide appropriate protection for women.

As one analyses contracts and contract formation through the lens of gender bias,<sup>34</sup> one can see that the so-called *freedom of contract* in the family law context is fraught with subtle imbalances created from emotional upheaval, financial disparity between the parties and the woman's traditional role in the family, all of which may greatly diminish the women's bargaining power and disturb the bargaining process.<sup>35</sup> Furthermore, as was advanced by Justice Lebel in the dissent in *Miglin* and echoed somewhat in the dissent by Justice Deschamps in *Hartshorne*, the examination of contract validity should reflect an awareness of this reality but does not<sup>36</sup>:

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Contract" (1996) 33:2 Osgoode Hall L.J. 337 at 338.

<sup>32</sup> *Ibid.* at 340.

<sup>33</sup> Sue Davis, "Do Women Judges Speak "In a Different Voice?": Carol Gilligan, Feminist Legal Theory, and The Ninth Circuit" (1992-1993) 8 Wis. Women's L. J. 143 at 144-145.

<sup>34</sup> Carol M Rose, "Women and Property: Gaining and Losing Ground" (1992) 78 Va. L. Rev. 421.

<sup>35</sup> Rogerson, *supra* note 26 at 200.

<sup>36</sup> Miglin, *supra* note 22 at paragraphs 142 ff *Hartshorne*, *supra* note 23 at paragraphs 69ff.

The unconscionability test is blind to these and other subtle ways in which the economic disparities between the parties and the parties' respective familial roles, both of which continue to be gender-based, may play into the negotiating process and significantly influence its outcome. The test that governs judicial intervention in spousal support agreements must be one that is responsive to these realities.<sup>37</sup>

There is also a great concern that when contracts are formed in the context of mediation and separation agreements in the event of divorce, the only difference for women is that they have now assisted in their own demise.<sup>38</sup> Some domestic contracts can be negotiated without taking into account individual interests and therefore do not address both parties' needs adequately. If the process does not address this, no matter how neutral the process itself is, women whose needs are not being met are simply participating in a procedure that still does not provide them with what they need. The major criticism is that even mediation fails to correct or address the imbalance of power that may exist between some men and women.<sup>39</sup>

In addition to the fundamental difference in the way men and women bargain, there is also often considered to be a disparity in what they consider valuable.<sup>40</sup> As stated by Carol Gilligan “[w]hile women adopt a holistic approach in that they are able to see the whole picture, and attempt to reconcile and harmonize conflicting interests and variant points of view, men adopt a more myopic and strategic approach in that they focus their energies on their own self-interested goals.”<sup>41</sup>

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<sup>37</sup> *Ibid.* Miglin at paragraph 216.

<sup>38</sup> Hadfield, *supra* note 31 at 342.

<sup>39</sup> Sandra Zaher, “The Feminization of Family Mediation” [May 1998] *Disp. Resol. J.* 36 at 36. Please note that imbalances in power can exist for men as well in certain relationships but this paper will focus on imbalances that disfavor women.

<sup>40</sup> *Ibid.* at 42.

<sup>41</sup> Carol Gilligan, *A Different Voice: Psychological Theory and Women's Development* (Cambridge:

Some argue that the key to resolving the inherent problems present in some domestic contracts would be to alter the potential patriarchal dynamics of mediating an agreement. This is further explained by Sandra Zaher:

The problem, however, does not lie in the “feminization” of mediation, but in the “emasculatation” of the rules of the game. If men and women both were to adhere to the problem-solving, “win-win” philosophy of mediation, this particular mode of dispute resolution would be highly effective in not only mending the fabric of their lives, but in reinventing the fabric of society at large.<sup>42</sup>

For the time being, however, there is definite concern with the validity of domestic contracts because they have the potential to be unfair, and the laws pertaining to them are not gender neutral.<sup>43</sup> Often in a domestic situation, it is the woman rather than the man who is in the economically and socially weaker position.<sup>44</sup> A position of patriarchal subordination also can severely weaken a woman’s “freedom” to contract<sup>45</sup> and this must be addressed.

This gender bias may be actively or passively detrimental to women.<sup>46</sup> An example of an active strike can be seen when a party specifically exploits a woman’s weaker financial status. A vengeful spouse can choose not to comply with support orders, making her desperate to settle. This tactic is called “starving her out.”<sup>47</sup> Fear of a custody battle can also scare a woman into an inappropriate settlement.<sup>48</sup> Despite legislation that allows judges to divide marital property, these rules need not apply to private

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Harvard University Press, 1982) at 3.

<sup>42</sup> Zaher, *supra* note 39 at 43.

<sup>43</sup> Bala, *supra* note 17 at 60-61.

<sup>44</sup> *Ibid.* at 61.

<sup>45</sup> Bryan, *supra* note 16 at 1171.

<sup>46</sup> Once again, in some circumstances, this could apply to men as well if they are financially dependant on their wives.

<sup>47</sup> Bryan, *supra* note 16 at 1174.

<sup>48</sup> *Ibid.* at 1179.

bargaining<sup>49</sup> given that the parties can opt out of any legal provisions that are not of public order such as provisions relating to child support.

Gender bias in the negotiation of settlement agreements can have far reaching effects post-divorce; not only for the woman but also for the children she has in her custody,<sup>50</sup> given that women are still the primary caregivers of small children after divorce.<sup>51</sup> Children can sink into poverty, which may inhibit their academic performance as well as their social and psychological development.<sup>52</sup> Children can often suffer from depression as well when faced with poverty. These factors can adversely affect their future success.<sup>53</sup> Essentially, the individual and societal potential lost in childhood as a result of consequences linked to poverty after divorce cannot be reclaimed.<sup>54</sup>

Given that women may be at a disadvantage because of gender inequality and a male-oriented legal process and thus, can enter into poor agreements that can have far-reaching effects on their lives, certainly it must be a priority for jurists to improve the process of formation and the substance of domestic contracts. Some of these poor agreements may be inappropriate, but if they fall short of being unconscionable they will not likely be overturned given the jurisprudence in this area.

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<sup>49</sup> Jeremy A. Matz, "We're all Winners: Game Theory, the Adjusted Winner Procedure and Property Division at Divorce" (2000-2001) 66 *Brook. L. Rev.* 1339 at 1340.

<sup>50</sup> Bryan, *supra* note 16 at 1155.

<sup>51</sup> Jane Biondi, "Who Pays for Guilt?: Recent Fault-Based Divorce Reform Proposals, Cultural Stereotypes and Economic Consequences" (1998-1999) 40 *B.C.L. Rev.* 611 at 617.

<sup>52</sup> Bryan, *supra* note 16 at 1158-1159.

<sup>53</sup> *Ibid.* at 1159-1160.

<sup>54</sup> *Ibid.* at 1157-1161.

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**B. PROCEDURAL AND JURISPRUDENTIAL DIFFICULTIES**

At least 90% of family law cases<sup>55</sup> end in a negotiated agreement between the parties. Different provinces attribute different names to these agreements. The term “Domestic Contract” is derived from the Common Law and is used to denote marriage contracts, cohabitation agreements, or separation agreements.<sup>56</sup> The separation agreement is the most common domestic contract. It is essentially a contract in which spouses decide the various issues which arise upon breakdown of the marriage or relationship.<sup>57</sup> In the civil law, separation agreements go by many names, but for the purpose of this paper they will simply be referred to as separation agreements or transactions.

The effect of the separation agreement in Quebec is final<sup>58</sup> unless there is evidence of vitiated consent.<sup>59</sup> A transaction can only be annulled under Quebec law for vitiated consent, that is, the consent was not given in a free and enlightened manner because of error, fear or lesion.<sup>60</sup> In Ontario, ‘domestic contracts’ are also *conceptually* contracts in that the general law of contracts applies.<sup>61</sup>

In Quebec, even if a party’s consent had been vitiated, a party cannot apply for the annulment of the separation agreement if the agreement has been ratified or confirmed.<sup>62</sup> Often an agreement will be confirmed by the acceptance of payments

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<sup>55</sup> Kulerski, *supra* note 15 at 1.

<sup>56</sup> Derek Mendes da Costa, “Domestic Contracts in Ontario” 1978 1 Can. J. Fam. L. 232 at 233.

<sup>57</sup> Bala, *supra* note 17 at 1.

<sup>58</sup> Art. 2633 C.C.Q.

<sup>59</sup> This does not apply to elements pertaining to children and some alimentary aspects.

<sup>60</sup> Art. 1399 C.C.Q.

<sup>61</sup> Mendes da Costa, *supra* note 56 at 244.

<sup>62</sup> Art. 1420 C.C.Q.; *G.R. v. A. (L)*, REJB 2000-18107 at 13, *V.(L.) v. A.(L.)* EYB 2004-79907 at 28.

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stipulated in the agreement,<sup>63</sup> despite the fact that said agreement may be considered inappropriate in the circumstances. Imagine, for example, the situation of a spouse accepting support payments and thereby unwittingly confirming the validity of the agreement.

Some agreements are not suitable for the parties because of an initial lack of understanding about their own true interests. It is up to family law lawyers to account for this and attempt, in a creative fashion if necessary, to obtain the “best” agreement for their clients. The conundrum is that in family law negotiations there are two attorneys each attempting to do the same thing for their respective clients who seemingly have conflicting interests.

Prescription and time limitations are also elements that must be considered when trying to annul a negotiated agreement. Even if a party has a valid reason to annul the contract, the remedy of requesting nullity can quickly be extinguished. There may seem to be ample time to contest the validity of an agreement, but in the real world time may pass by very quickly while a party attempts to live with an inappropriate agreement. By the time a party realizes that he or she can no longer live with the agreement, as it was not appropriate in the first place, the delay may have been prescribed. The party will have no choice but to accept the agreement and live with the results, sometimes with dire financial and psychological consequences.

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<sup>63</sup> G.R. v. A. (L), REJB 2000-18107 at 13.

In addition to the purely procedural difficulties of overturning a transaction, the jurisprudence on transactions states that the Court must be very cautious in overturning validly negotiated and executed agreements. This will be seen in the analysis in the next section of this paper. All requests for modification must be carefully scrutinized before changing what had seemed to be the intention of the parties. The Court should not lightly disturb the terms of a duly negotiated contract<sup>64</sup> nor should it put aside an agreement without serious reason<sup>65</sup> and then, it should only intervene if public interest so requires.<sup>66</sup>

The Courts have also emphasized that one should be careful not to disturb agreements pertaining to spousal support, especially when the agreement contains “consideration” in terms of the property settlement which cannot be overturned.<sup>67</sup> Spousal support provisions are often tied into the overall settlement and arbitrarily sequestering different provisions can affect the overall agreement.

The ability to overturn a clause in an agreement (or an entire agreement) was further circumscribed with the rendering of the Supreme Court judgment in *Miglin v. Miglin*. The Court examined the appropriate threshold for judicial intervention in valid agreements and set out two stages of examination to determine if an agreement should be altered through court intervention.

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<sup>64</sup> *Menard c. Ricard*, 1974 C.A. 157; *McLeod v. Thompson*, [1978] C.S. 727  
*Genereux c. Vocisano*, [1979] C.S. 1006; *Newman c. Newman*, 4 Man. R. (2d) 50.

<sup>65</sup> *Lavigne c. Goulet*, [1980] C.S. 683; *Droit de la famille - 225* [1985] C.A. 479.

<sup>66</sup> *Viau c. Baillargeon*, [1981] C.S. 42.

<sup>67</sup> *Webb vs. Webb*, 5 O.A.C. 161.

At stage one there are two considerations for the Court: i) the circumstances surrounding the negotiations and ii) the substance of the agreement.<sup>68</sup> At sub-stage i), the Court should examine the circumstances surrounding the way the agreement was negotiated and executed. At this stage, the Court will examine if either party was oppressed or vulnerable,<sup>69</sup> and whether the parties were duly represented by independent attorneys.<sup>70</sup> At part ii) of stage one, the Court must examine the substance of the agreement. Only if there is a significant departure from the objectives of the *Divorce Act* will the Court intervene.<sup>71</sup>

At stage two of the analysis, the Court will examine the extent to which the enforcement of the agreement still reflects the original intention of the parties and if it is still in compliance with the *Divorce Act*.<sup>72</sup> In order to modify an agreement, the “stage two” analysis requires a significant change of circumstances. If there is no significant change, the agreement must be left as it is. The Supreme Court also specified that one must use the intentions of the parties at the time of the signing of the agreement as a backdrop for this analysis.<sup>73</sup> As stated by Bastarache and Arbour JJ. “Parties must take responsibility for the contract they execute as well as for their own lives.”<sup>74</sup>

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<sup>68</sup> Miglin, *supra* note 22 (S.C.R.) para 79 ff.

<sup>69</sup> *Ibid.* at para.81.

<sup>70</sup> *Ibid.*

<sup>71</sup> *Ibid.* at para. 84. The objectives of a spousal support order are listed at Section 15.2 (6) of the *Divorce Act* and reads as follows: An order made under subsection (1) or an interim order under subsection (2) that provides for the support of the spouse should a) recognize any economic advantages or disadvantages to the spouse arising from the marriage or its breakdown; b) apportion between the spouses any financial consequences arising from the care of any child of the marriage over and above any obligation for support of any child of the marriage; c) relieve any economic hardship of the spouses arising from the breakdown of the marriage ; and d) in so far as practicable, promote self-sufficiency of each spouse within a reasonable time period.

<sup>72</sup> *Ibid.* at para. 87.

<sup>73</sup> *Ibid.* at para 88

<sup>74</sup> *Ibid.* at para 91.

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It is generally favourable for an agreement, rather than litigation, to terminate a family file, given that the parties have more control, it is more cost effective, an agreement is more likely to be respected, and the parties can walk away with their dignity intact.<sup>75</sup> If one needs to re-open a transaction, one now finds the task extremely difficult given the Supreme Court decision in *Miglin*. The trend is to consider that the contract will be maintained. It has therefore become all the more important to ensure that agreements are well drafted, equitable and that they actually reflect the needs and will of the parties.

It is very clear that when capable adults enter into an agreement, even though it may not be an appropriate agreement for a variety of reasons, they will, in the great majority of cases post-*Miglin*, be held to the terms of their agreement. The agreements therefore, must represent the parties' interests from inception. I will now examine the basics of Game Theory and Collaborative Law before examining any potential value either or both may have in improving the negotiations between parties, and ultimately yielding agreements which parties will be less tempted to reopen. In this connection, I will assess the promise held by Game Theory and Collaborative Law to foster domestic agreements that will satisfy parties' actual interests and needs without causing psychological or financial harm to spouses and their children.

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<sup>75</sup> Bryan, *supra* note 16 at 1153-1154.

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**Chapter 2****INTRODUCTION TO GAME THEORY AND COLLABORATIVE LAW**

The dynamic currently existing in troublesome negotiations is not necessarily conducive to a “win-win” scenario, in that parties are often only interested in getting their own needs met. Yet, a win-win mentality is absolutely crucial in obtaining an agreement that reflects both parties’ individual interests. Unless both parties agree to the principle that both can succeed simultaneously, a win-win solution cannot be achieved. Game Theory can demonstrate the value and necessity of a win-win approach. The paradigm shift from litigation to Collaborative Law also involves this approach. This chapter will provide the reader with the basics of Game Theory and Collaborative Law in order to better evaluate their value in the following chapter involving their application to family law.

**A. GAME THEORY*****a) General and historical***

Game Theory is a mathematical approach to human interaction. The premise is that human behaviour can be calculated and tracked.<sup>76</sup> An example of this can be found in the subsection called the Prisoner’s Dilemma in this chapter. Game Theory has existed in various forms throughout history. It is a way of calculating behaviour and employing certain strategies to achieve a desired result. In reality, there is not a single ‘theory’ of games; there are actually many different theories.<sup>77</sup>

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<sup>76</sup> Morton D. Davis, Game Theory: A Nontechnical Introduction (New York: Dover Publications Inc., 1997) Introduction.

<sup>77</sup> *Ibid.* at xiv.

The first work on Game Theory was published in 1944 and is attributed to John von Neumann and Oskar Morgenstern.<sup>78</sup> For the last three decades, Game Theory has been considered the most useful theory in analysing situations of decisional conflict between two players where rational decision-making relies on expectations about what the other player will do, and vice-versa.<sup>79</sup>

Historically, Game Theory may have been applied without being labelled as such. A classic military strategy used by the Spanish conqueror Hernando Cortez is a prime example of how Game Theory was utilized prior to the actual verbalization of the theory. In 1519, Hernando Cortez arrived in the newly discovered Mexico in order to establish Spanish colonies. Having a force of only 600 men and 20 horses, Cortez was substantially outnumbered by the Aztecs. In order to prevent his men from retreating under the rush of Aztec soldiers, Cortez burned all the ships his men had sailed on in their voyage to Mexico. This sole act had two outcomes. First, his men could not retreat, but rather were forced to stay and fight despite being so greatly outnumbered. Second, it weakened the confidence of the Aztec soldiers. Cortez carefully planned the burning of the ships to be done in full view of the Aztec soldiers. The Aztecs reasoned that it would not be wise to attack an army so confident in winning that they destroyed their only option for retreat if things went badly. As a result of Cortez's bold actions, the Aztecs retreated and Cortez had a victory absent of any bloodshed.<sup>80</sup> Cortez had to be aware of the thought processes of his soldiers in order to properly anticipate their actions.

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<sup>78</sup> Douglas G Baird, Robert H. Gertner, & Randal C Picker, Game Theory and the Law (Cambridge: Harvard University Press, 1994) at 4; Davis, *supra* note 76 at x.

<sup>79</sup> Don Ross, "Game Theory", The Stanford Encyclopedia of Philosophy (Winter 2005 Edition), Edward N. Zalta (ed.), online: <<http://plato.stanford.edu/archives/win2005/entries/game-theory/>> at 1.

<sup>80</sup> *Ibid.*; Bryan Pavlovic, "Hernando Cortez" online: Hernando Cortez <<http://ntap.k12.ca.us/whs/projects/history/cortez.html>>.

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This exact scenario was analysed by Plato in The Republic.<sup>81</sup> Plato had Socrates examine the following fact pattern, which is quite analogous to the situation faced by Cortez's men. A soldier in the front line, preparing for battle will reason as follows: if his army will be successful, the chances of him making a significant contribution are minimal. If he remains and fights, he can be wounded, or worse, killed. On the other hand, if the opposing army wins the battle his chance of death or injury rises and the frontline will be overrun anyhow. In either scenario, the soldier would logically assume that he should defect and save his life. His staying in place in either scenario will not help the greater good and his chance of death or injury is extremely high.

Now if all soldiers acted on these thoughts, and assuming that all soldiers would have the same thought patterns, the battle would surely be lost. Will the knowledge that the war will be lost if all the soldiers defect influence his decision? Technically it should not. The greater the soldier fears that the battle will be lost, the greater his fear of death or injury; therefore, the greater his desire to run. Further, he would have no reason to believe that other soldiers would not follow suit. If he believes, on the other hand, that the battle will be won, there is still no reason to believe that he will make a significant contribution to the battle and the victory.

It is important to note in this analysis that the soldiers' motivation in retreating does not necessarily stem from their personal interpretation of the danger but rather it is cemented by the assessment of the other soldiers' actions. Imagine the reaction of a soldier, even one inclined to stay and fight, if he knows that he will be the only soldier left fighting. His fighting would therefore be meaningless.

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<sup>81</sup> Plato, The Republic (London: Dent, 1976).

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If one is dealing with brave dedicated soldiers, despite their natural inclination to stay, all should behave rationally and retreat even though this is not their desired outcome. Being brave and dedicated soldiers, they would have desired a victory for themselves and for their people which would be possible if all would stand and fight.<sup>82</sup> Leaders have dealt with this problem by instantly shooting deserters, therefore adding another element to the analysis and thereby changing the logical outcome of the “game”.

What can be drawn from this scenario from The Republic is that the knowledge of what people want, or what people will do, can alter each individual’s actions. The more information available, the more likely a reasoned logical choice will be made that accomplishes the player’s ultimate desire. Without the necessary information, logic will dictate a possible lose-lose situation, something not desirable for anyone. The analysis of the elements and the interaction of individuals in given situations is the essence of Game Theory. The elements of a game are the players, the consequences of different actions, and the strategies available.<sup>83</sup>

Some parties believe that they are in complete control of the negotiation process; that life is simple and that if they want something, all they have to do is reach out and grab it. The reality is, however, that very often there is someone who wants the exact same thing, at the exact same time, and may have the same skills as the other party. This should be strong motivation to try to understand the other player’s interests. Other such reasons are explored by David P. Barash.

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<sup>82</sup> Ross, *supra* note 79.

<sup>83</sup> Matz, *supra* note 49 at 1366.

There are many circumstances in which the interests of individuals are interdependent and yet in conflict, so that payoff to individual A, who is pursuing a particular goal, depends on the actions of individual B, who may be pursuing the same goal. In these cases, the return to each player – which can be a person, animal, organization, country, or even a bacterium – is determined by the actions of both, taken together. Furthermore, each is in a sense at the mercy of the other, in two ways. First, the outcome to each party depends on the other's actions, and second, it is often the case that neither can change the other's behavior. It is one of life's crucial constraints.<sup>84</sup>

Game Theory can provide the missing elements and methods for dealing with situational conflict. Its use of strategies, its understanding of the importance of specific individualized payoff and strategic equilibrium has made it applicable at large throughout the social sciences.<sup>85</sup> By viewing a conflict as a game, observations can be transformed into a quantitative model. This allows decisions to be made that are far from obvious.<sup>86</sup>

One immediate concern stems from a very pragmatic issue. How does one apply complicated mathematical formulas if one does not have a background in the traditional sciences or more specifically mathematics, physics and economics? Actually, one can apply Game Theory without having a mathematical background. “[F]or all the mathematical abracadabra ... Game Theory is actually an over simplification.”<sup>87</sup> What is important to retain from the analysis of Game Theory is that the theory allows us to understand factors that are true but not necessarily obvious.<sup>88</sup> Once these basic principles are understood, they are easily applied. Perhaps this in itself is what has made the application of Game Theory so practical in fields outside of the traditional sciences.

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<sup>84</sup> David P. Barash, The Survival Game: How Game Theory Explains the Biology of Cooperation and Competition (New York: Henry Holt and Company, 2003) at 2.

<sup>85</sup> “Game Theory” online: SFB 504 Glossary: Game Theory <http://www/sfb504.uni-mannheim.de/glossary/game.htm> at 1.

<sup>86</sup> Davis, *supra* note 76 at xv.

<sup>87</sup> Barash, *supra* note 84 at 10.

<sup>88</sup> *Ibid.* at 25.

Some games that we are all very familiar with, such as checkers, chess and tic-tac-toe, are referred to as games of “perfect information” because both players know the past moves and the rules of the game.<sup>89</sup> Any player can therefore fully participate in the game, something that is very useful. A very simplistic example of how knowing the rules can help with the ultimate payoff is the scenario of the *Interrupted Telephone Call*.<sup>90</sup> In this example, you are speaking to a friend, long distance, and in the middle of the conversation the line cuts off and you get a dial tone. You wish to continue the telephone conversation and you know your friend does also. What do you do? If you both redial the number, neither of you will get through as both lines are now engaged. If you both wait then neither of you call, and your goal of completing the conversation is not met. The only way to get to the desired goal is for one of you to dial and one of you to wait. You find yourself in a scenario where you have common interests and yet the ultimate payoff, continuing the conversation, is dependant on the other party’s actions. If both parties had communicated the rules prior to the conversation (“If we lose the line you call me back”) then both parties would receive their ultimate payoff.<sup>91</sup>

Another interesting strength of Game Theory is that it is not one-sided. The whole premise of the theory is developed upon the belief that each player will have individual concerns. Game Theory recognises each party’s interests and this will help produce realistic outcomes for all parties<sup>92</sup>. As we are reminded by David Barash:

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<sup>89</sup> Davis, *supra* note 76 at 9.

<sup>90</sup> Barash, *supra* note 84 at 2.

<sup>91</sup> *Ibid.* at 2-3.

<sup>92</sup> *Ibid.* at 21.

...there is nothing diabolical about the fact that other people exist, and that they have their interests, which often compete with, complement, or otherwise interact with our own. It contributes much -maybe all- of the spice of life. But at the same time, it complicates things, and immensely so.<sup>93</sup>

Yet, Game Theory is not a miracle cure for all conflict situations. It is hard to see how the mathematical elements can be applied to custody situations.<sup>94</sup> On the other hand, it is sufficiently general to believe that it will illuminate some important aspects of many conflict situations,<sup>95</sup> such as the settlement of property issues, and some support issues in the context of domestic agreements.

### *b) Current Applications in Law*

The application of Game Theory in law has recently been growing “at an interesting rate.”<sup>96</sup> Game Theory models are discussed frequently at the annual meetings of the American Law and Economics Association and have been applied to a wide variety of areas including alternative dispute resolution and bankruptcy,<sup>97</sup> as well as to any area where economics can help analyse the law.

“The “new” economic analysis of law embraces such nonmarket, or quasi-nonmarket, fields such as tort law, family law, criminal law, free speech, procedure, legislation, public international law, the law of intellectual property, the rules governing the trial and appellate process, environmental law, the administrative process, the regulation of health and safety, the laws forbidding discrimination in employment, and social norms viewed as a source of, and obstacle to, and a substitute for formal law.”<sup>98</sup>

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<sup>93</sup> *Ibid.* at 11.

<sup>94</sup> See Chapter 3 of this paper.

<sup>95</sup> JD. Williams, *The Compleat Strategyst: Being a Primer on the Theory of Games of Strategy* (New York: Dover Publications, Inc, 1986) at 11.

<sup>96</sup> Peter H. Huang, “Strategic Behaviour and the Law: A Guide for Legal Scholars to Game Theory and the Law and Other Game Theory Texts” (1995) 36 *Jurimetrics J.* 99 at 100.

<sup>97</sup> *Ibid.*

<sup>98</sup> Posner, *supra* note 4 at 5.

We have also witnessed the use of Game Theory by legal scholars, who are using it to “better understand corporations, international negotiations, torts settlement, labour relations and contract law.”<sup>99</sup> The Game Theory analysis of business is also applied in antitrust and competition law.<sup>100</sup> Given that Game Theory is ultimately an analysis of strategy, attorneys faced with anti-trust issues can use the theory to determine the benefit of having their clients plead guilty (for a better criminal sentence) or deny the crime (potentially serving no time but serving more time if the clients’ true guilt is discovered), while at the same time examining the ramifications of a civil suit on the company if a guilty plea is indeed entered. The benefits and drawbacks can be mathematically analysed with Game Theory.<sup>101</sup>

Game Theory is currently used to determine whether parties should decide to settle out of court or proceed to trial.<sup>102</sup> This application of Game Theory in family law will be examined later in this paper. Game Theory, however, has a much wider application and can prove useful in a wide range of decision making processes.<sup>103</sup>

### *c) The elements used in a Game Theory analysis*

The elements used in Game Theory include the *matrix*, the *utility* or *payoff*, and the *strategy*. These elements require a basic explanation for a better understanding of how they interact.

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<sup>99</sup> Matz, *supra* note 49 at 1366.

<sup>100</sup> Phillip C. Zane, “The Price Fixer’s Dilemma: Applying Game Theory to the Decision of Whether to Plead Guilty to Antitrust Crimes” (Spring 2003) 48 Antitrust Bulletin 1 at 6. See also John K. Setear, “Issues in Civil Procedure: Advancing the Dialogue a Symposium: The Barrister and the Bomb: The Dynamics of Cooperation, Nuclear Deterrence, and Discovery” (1989) 69 B.U.L. Rev. 569 and Gilson, Ronald J. & Mnookin, Robert H. “Disputing through Agents: Cooperation and Conflict between Lawyers in Litigation” (1994) 94 Colum. L. Rev. 509.

<sup>101</sup> *Ibid.* (Zane) at 2-3.

<sup>102</sup> *Ibid.* at 7.

<sup>103</sup> *Ibid.*

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**i) The Matrix**

A matrix is a visual demonstration of strategies and their resulting payoffs.<sup>104</sup> The matrix sets out in tabular form the strategies and payoffs for a given game. In a two player game the strategies for one of the players are listed in the rows and the other player's strategies are listed in the columns. "The intersection of two strategies produces a cell in the payoff matrix in which the first part of the pairing of numbers in the cell is the payoff for the player whose strategies are listed in the rows, and the second number in the cell is the payoff for the player whose strategies are listed in the columns."<sup>105</sup> The matrix is therefore essentially the table that represents the players' options. The game can only begin once the problem, whatever it may be, is brought to a physical formation that maps the players, the options, the descriptions of the strategies, and very importantly the utility, or payoff. The matrix is the Game Theory model of the conflict at hand, "and the applicability of the subsequent analysis will depend completely on the adequacy of this form of representation – a set of strategies and a payoff matrix."<sup>106</sup>

**ii) Utility**

Game Theory is a mathematical analysis used in decision making to help one develop strategies to obtain one's goals. Before one can attain these goals, however, one needs to know what they are. Determining what one wants, and how to obtain it, is called "utility theory". This is the mechanism that links the *goals* of the players with the *strategies* needed to accomplish the goals.<sup>107</sup>

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<sup>104</sup> David Crump, "Game Theory, Legislation, and the Multiple Meanings of Equity" (2001) 38 Harv. J. on Legis. 331 at 362.

<sup>105</sup> Setear, *supra* note 100 at 571.

<sup>106</sup> Williams, *supra* note 95 at 20.

<sup>107</sup> Davis, *supra* note 76 at 61.

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As game theorist Morton D. Davis reminds us, this is not always as simple as it may seem as it is important to first discover a person's true interest, not simply his or her stated goal.<sup>108</sup> For instance, "I must keep the house," may really mean "I like the security of staying in the same place." The way one would achieve the latter is not necessarily the same way one would achieve obtaining the ownership of a house. Actual knowledge of the player's interest is central to Game Theory.

...players don't need to know anything about game theory, but they have to know what they like – a slightly altered version of the popular bromide, "I don't know anything about art but I know what I like."<sup>109</sup>

The next challenge is to quantify these subjective interests, goals or desires. There is no possibility of *completely* evaluating something subjective in a quantitative fashion; however, a close approximation is sufficient for the purpose of applying Game Theory.<sup>110</sup>

"Utility", as described by game theorists, refers to the amount of interest a player has in the predetermined object or event. Utility denotes a measure of psychological fulfillment.<sup>111</sup> If a player particularly likes the idea of travelling to Paris, he or she would associate a high utility with the trip. If a player does not care much for travelling but may like to see Paris one day, the utility may be lower. Finally, if a player is certain the he or she will not like French food and be miserable, he or she may attribute a "0" utility factor, as this player derives no psychological fulfillment from going to Paris. This concept of utility can apply to any element. It can relate to a love of chocolate bars just as easily as a desire for owning a car. This quantification process is called a "utility function." As Davis indicates,

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<sup>108</sup> *Ibid.* at 57.

<sup>109</sup> *Ibid.* at 61.

<sup>110</sup> *Ibid.*

<sup>111</sup> Ross, *supra* note 79 at 1.

A utility function is simply a “quantification” of a person’s preferences with respect to certain objects. Suppose I am concerned with three pieces of fruit: an orange, an apple, and a pear. The utility function first associates with each piece of fruit a number that reflects its attractiveness.<sup>112</sup>

If the preferences of a player are sufficiently consistent, these preferences can be translated into a utility function.<sup>113</sup> If however on one day the party really wants the house, and the next day it is the furniture that is desired, it is highly possible that the player has not decided what he or she wants, or it may be simply that the player’s true interests have yet to be revealed. In order to properly play the game, this interest and utility analysis must be accomplished before putting the strategies into place.

### iii) Strategies

Strategies come into play once the game has started and for the purpose of our evaluation, it is the strategies that will provide the most informative insight into an improved negotiation strategy. The plan of action, how one will react in the game, and what position one takes is one’s strategy. One essentially plots out how one will react to certain moves ahead of time and what the countermove will be after that. Given that there are also elements that are atypical, a strategy may also include random moves.<sup>114</sup> What is important is that a player decides the strategy in advance, even allowing for randomness is a strategy, and the player must remain true to the strategy. A combination of strategies, from which neither party has an incentive to deviate, is called the Nash Equilibrium.<sup>115</sup> “While this does not result in the best possible outcome, it is the most stable and efficient

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<sup>112</sup> Davis, *supra* note 76 at 62.

<sup>113</sup> *Ibid.* at 63.

<sup>114</sup> Manheim, *supra* note 85 at 1.

<sup>115</sup> Matz, *supra* note 49 at 1368.

outcome.”<sup>116</sup> The Nash equilibrium is named after John Nash, a mathematician and Nobel prize-winning economist.<sup>117</sup>

Additional strategies will be discussed in Chapter 3. The strategies can be divided into two categories: One category is descriptive; how humans behave<sup>118</sup> while the other is normative; how people ought to behave.<sup>119</sup> Some of the strategies can be used in an actual application of the game theory matrix and can demonstrate how the game is played. The normative category of strategies demonstrates principles which should be retained in the negotiation process. Often, as with the Prisoner’s Dilemma discussed below, the strategy can be both normative and descriptive.

### *The Prisoner’s Dilemma*

In the 1950s, Merrill Flood and Melvin Dresher, theoreticians at the Rand Corporation, a nonprofit institution which assists in improving policy and decision-making through research and analysis,<sup>120</sup> developed a basic mathematical model that incorporated the element of temptation into an interaction between two players. The model was presented as a game. Flood and Dresher were examining Game Theory as developed by mathematical physicist John von Neumann in the 1920s.<sup>121</sup>

The game involved a gamble because one had to factor in the other player’s choices. It has become known as the “Prisoner’s Dilemma” and it introduced Game

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<sup>116</sup> *Ibid.*

<sup>117</sup> John Nash won the Nobel Prize for Economics in 1994.

<sup>118</sup> Wikipedia, s.v. “Game Theory” online: Wikipedia <[http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page)>.

<sup>119</sup> *Ibid.*

<sup>120</sup> “About Rand” Online: Rand Corporation <<http://www.rand.org/about/history/>>.

<sup>121</sup> Philip Ball, *Critical Mass: How One Thing Leads to Another* (New York: Farrar, Straus and Giroux, 2004) at 416.

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Theory into a variety of fields including sociology and biology.<sup>122</sup> The Prisoner's Dilemma can be an example of a "sum-zero game" depending on how it is played. A sum-zero game is a win-lose game; if one person wins, another person must lose. A non-sum zero game, on the other hand, allows for cooperation. In a non-sum zero game there are actions that can benefit both players.<sup>123</sup> It will be the non-sum zero games that will be of interest when I apply Game Theory to family law.

In the Prisoner's Dilemma game, two people are detained by the police and are interrogated in two separate cells. They have no contact with one another, and have no chance to speak to one another before the interrogation starts. Both "players" are given the same information by the police and it is irrelevant to this game whether or not they actually committed the crime in question. The reader may also be concerned that the end result does not allow for justice if the prisoners are actually guilty and succeed in manipulating the system through collaboration, but it is a useful illustration of the value of collaboration in other situations. In the instance of a family law problem, the collaboration is intended to yield equity and justice unlike the potential outcome in this fictional scenario.

This is what the prisoners are told by the police:

- If they both confess they both get four years in prison.
- If neither confesses, the police will be able to pin part of the crime on both, and they will each get two years.
- If one of them confesses but the other doesn't, the confessor will make a deal with the police and will go free, while the other one goes to jail for five years.

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<sup>122</sup> *Ibid.* at 417.

<sup>123</sup> Davis, *supra* note 76 at 14.

The rational analysis of this problem would lead to each confessing because no matter what the other player ultimately decided to do, each will statistically be better off by confessing. This can be explained as follows from the perspective of player 1 with respect to the amount of time he will serve. If both players confess, player 1 gets four years (Box D). If player 1 confesses and player 2 does not, player 1 goes free (Box C). This is visually represented in the matrix of choices below reading from left to right. The first figure represents Player 1's payoff, the second figure represents Player 2's payoff.

	Player 2 does not confess	Player 2 does confess
Player 1 does not confess	<b>Box A</b> 2,2	<b>Box B</b> 5,0
Player 1 does confess	<b>Box C</b> 0,5	<b>Box D</b> 4,4

**Matrix 1.0**

If player 2 applies the same logical reasoning, he will come to the same conclusion and both players will end up with four years in order to avoid five years. In this scenario even though both parties behaved rationally, both are worse off than they would have been had they had the opportunity to cooperate. This lesson can be used in family law to demonstrate how communication and collaboration between separating parties can be used to obtain a subjectively acceptable agreement.

If the players continue to play the game and attempt to minimize the time served while still trying to figure out what the other player will do, the game becomes more complicated and depending on the strategy taken, the outcome will continue to change because each party will learn something about the behaviour of the other in each round.

The time that each party would receive is considered the utility points or payoff. If, as in this case, the time represents time spent in prison, the lower the utility point the better. The same game, however, can be played from many other perspectives including determining payoff and strategies to shape outcomes in family law negotiations. This shall be further examined in Chapter 3 of this paper where the reader shall see how utility points can be applied to property divisions.

One can make a *logical* decision which will not yield the best result, but one cannot make the *best* decision when one does not know what the other will do. The need for cooperation, that is communication, is essential. Communication could take the players from a sum-zero game to a non-sum zero game. Prisoner's Dilemma is a clear demonstration of how communication between parties in a game or negotiations, can help all involved. This will become a key factor when considering the need and value of full disclosure in family law cases.

The process, however, becomes more complicated and the outcomes will be different when both players do not behave rationally or logically. The outcomes will also change when the games are repeated. These elements will be fully examined when Game Theory principles are applied to family law in Chapter 3.

## B. COLLABORATIVE LAW

Cooperative negotiations can be best associated with Principled or Interest-based negotiations. *Principled negotiations* were first described by Roger Fisher, William Ury and Bruce Patton of the Harvard Negotiation Project. In their book Getting to Yes, they list four basic points for this model:

People: separate the people from the problem

Interests: Focus on interests, not positions

Options: Generate a variety of possibilities before deciding what to do.

Criteria: insist that the result be based on some objective standard.<sup>124</sup>

Mediators endorse principled negotiation.<sup>125</sup> As will be shown, principled negotiation is also the model of choice for Collaborative Law. Although Collaborative lawyers refer to this negotiation style as *Interest-based*,<sup>126</sup> it is essentially the same as principled negotiations.

Effective facilitation in a negotiation requires a different skill set than advocacy.<sup>127</sup> Upon close examination of Collaborative Law, one is struck by the complete paradigm shift from traditional negotiations with its focus on positions and individuals to a focus on interests and problem solving.

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<sup>124</sup> Roger Fisher, William Ury & Bruce Patton, Getting to Yes: Negotiating Agreement Without Giving In, 2d ed. (New York: Penguin Books, 1991) at 10.

<sup>125</sup> Richard W. Shields, Judith P. Ryan, & Victoria L Smith, Collaborative Family Law: Another Way to Resolve Family Disputes (Scarborough: Thomson Carswell, 2003) at 30.

<sup>126</sup> *Ibid.* at 33.

<sup>127</sup> *Ibid.* at 129.

Collaborative Law is not to be confused with simply compromising and arriving at a middle ground agreement. “Compromising is neither entirely assertive nor entirely cooperative. The concerns of both are satisfied in part... [c]ollaborating is both assertive and cooperative. The parties endeavour to satisfy the concerns of both in full.”<sup>128</sup>

In Getting to Yes,<sup>129</sup> a simple but effective example of interest-based negotiations is provided. The authors relate the story of two men arguing in a library. One of the men is insisting that the window be opened and the other is firm in his desire to have the window closed. They continue their argument for some time, disputing how much the window should be left open, if at all. Despite several options being proposed, such as, leaving it open a slight bit, half-way, and still further, the men were unable to agree and the argument continued with no satisfactory outcome in sight.

At some point the librarian heard the argument and approached the men to see if she could help. She asked the first man why he wanted the window open. He replied that he wanted to have fresh air. She asked the other man why he wanted the window closed and he replied that he wanted to avoid the draft. After thinking about this for a minute she left the room and opened a window in the next room bringing in fresh air without creating a draft.<sup>130</sup>

This story provides a very illuminating example of the principles at play in Collaborative Law negotiations. Instead of focusing on positions, the Librarian looked at

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<sup>128</sup> *Ibid.* at 7.

<sup>129</sup> Fisher *et al.*, *supra* note 124.

<sup>130</sup> *Ibid.* at 40.

what the men really wanted and where their interests lay. Once these were clarified, she was able to find a creative solution that met both men's true needs. Even though this problem was very simplistic in nature and issues in family law are often far more complicated, this useful tool of determining true interests remains a main focus of Collaborative Law and its intent to develop a fair agreement.

The librarian in our story came up with the solution independently. This is not the case with Collaborative Law. In fact, the verb, *collaborate* is a derivative of two Latin roots, being *com*, *with* and *laborare to work*. In the English language, to "collaborate" means to work with,<sup>131</sup> something that is key in Collaborative Law.

The Collaborative Law movement was started by Stuart Webb in 1990, in Minneapolis, Minnesota.<sup>132</sup> Since that time Collaborative Family Law has become a viable option in both the United States and Canada. I would argue that the attraction lies in using a less stressful procedure that will not add to the existing stressors associated with divorce, as well as the potential for reducing the cost of the dispute.<sup>133</sup> In Medicine Hat, Alberta, for example, Collaborative Law is so frequently used it has virtually eliminated the litigation aspect of family law.<sup>134</sup> In other provinces, such as Quebec, the process is relatively new and the potential of Collaborative Law has yet to be fully explored.

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<sup>131</sup> Shields, *supra* note 125 at 3.

<sup>132</sup> Pauline H Tesler, Collaborative Law: Achieving Effective Resolution in Divorce without Litigation (USA: American Bar Association, 2001) at 171. Pauline H. Tesler, "Collaborative Family Law" (2004) 4 Pepp. Disp. Resol. L.J. 317 at 317.

<sup>133</sup> "Collaborative Practice in Alberta" online: Collaborative Law <<http://www.collaborativelaw.ca/>>.

<sup>134</sup> Sherri Goren Slovin, "The Basics of Collaborative Law: A Divorce Paradigm Shift" (2004) 18:2 Am. J. Fam. L.74 (Proquest) at 1.

Collaborative Law is the next step after mediation in the evolution of alternative dispute resolution theories.<sup>135</sup> As Collaborative Law pioneer Pauline H. Tessler has commented, “Collaborative Law combines the explicit commitment to settlement that is at the core of mediation with the enhanced creative power of a model that builds into the settlement process from the start individual legal advocacy and counsel, as well as conflict management and guidance in negotiations.”<sup>136</sup>

Collaborative Law is a form of alternative dispute resolution where the attorneys *and* their clients sign a binding contract to work together to find a non-litigated settlement of the contentious issues between them. If the case does not result in settlement and litigation is required, each attorney must withdraw from the file.<sup>137</sup> In other words, while the clients do not lose their right to litigate, they cannot take their collaborative attorneys to court with them.

Collaborative Law uses only interest-based negotiation techniques, abandoning traditional methods in favour of a team-centered approach where clients and their attorneys play active roles, each with different responsibilities.<sup>138</sup> The clients are responsible for deciding which issues need to be resolved, and they exchange all the information needed to come to a mutually acceptable outcome. The clients also share their needs, interests and goals as well as present proposals for settlement. This process

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<sup>135</sup> Tessler, *supra* note 132 (Book) at 3.

<sup>136</sup> *Ibid.* at 4.

<sup>137</sup> Sheila M. Gutterman, Collaborative Law: A New Model for Dispute Resolution (Denver: Bradford Publishing Company, 2004) at 16.

<sup>138</sup> Slovin, *supra* note 134; Kim David Kurodason & Donna Beck Weaver, “Collaborative Family Law – The Big Picture” Symposium (2004) 4 Pepp. Disp. Resol. L.J. 401. Victoria L. Smith, and June A. Maresca, Introduction to Collaborative Family Law Process Training (2003) [unpublished].

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takes place freely as both parties agree to try to understand the needs and interests of the other.<sup>139</sup>

The lawyers' tasks are quite distinct from the above. Their primary concern is creating an environment where the parties feel safe and where communication and cooperation can flourish. The lawyers also help in advocating interests over rights and ensuring that the collaborative process is respected.<sup>140</sup> Throughout the process, the attorneys will act as negotiation coaches and as an information resource. We will see later that these roles are quite instrumental in applying Game Theory to the collaborative process.

Of utmost importance to the aspect of cooperation is that the parties must treat each other respectfully during the negotiation sessions and act in good faith at all times.<sup>141</sup> Given that the negotiations are cooperative rather than adversarial, the problem-solving abilities of the members can take full flight. The parties take an active role in the negotiations and all reasonable offers and potential solutions are examined as the parties agree to try to understand the other's point of view and in turn expect to be understood and listened to as well.<sup>142</sup>

Collaborative Law represents a paradigm shift where clients are advised by their respective attorneys that they will be able to reach a successful settlement; that there will be no adversarial courtroom proceedings, and that neither attorney will intentionally do

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<sup>139</sup> Slovin, *supra* note 134; Smith, *supra* note 138 at 86.

<sup>140</sup> Slovin, *supra* note 135 at 87-88.

<sup>141</sup> Tessler, *supra* note 132 (article) at 328, Baird, *supra* note 78 at 88.

<sup>142</sup> Tessler, *supra* note 132 (article) at 328; Slovin, *supra* note 134; Smith, *supra* note 138 at 88.

anything which will make the parties' emotional difficulties any worse.<sup>143</sup> As author Richard K. Kulerski informs us,

The fact is that over 90% of all divorce cases settle without going to trial. Litigants routinely spend months preparing for a trial that (statistically, at least) isn't going to happen. Proponents of Collaborative Law believe that the energy that was formerly used in preparing to litigate should now be used (at the front-end of the process) in trying to settle.<sup>144</sup>

Collaborative lawyers agree to take on cases for the purpose of settlement only.<sup>145</sup> This shift in dynamic is at the core of Collaborative Law. It also cuts down on the inevitable early stages of the debate where the parties are posturing and the lawyers are working on discovery.<sup>146</sup> The parties and their lawyers go into settlement mode immediately. Should the settlement process not work for whatever reason, neither attorney can continue to represent their client.<sup>147</sup> Ultimately this collaborative process promotes creative problem solving, which is essential to arriving at an acceptable settlement for both parties. Attorneys will have failed in their mandate if their clients have to resort to litigation. Accordingly, the attorneys' and their clients' collective energy is focused on problem solving. This is in contrast to traditional negotiations where the parties may not be truly invested in the process because they can simply resort to court if the process breaks down or fails.<sup>148</sup>

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<sup>143</sup> Stanford M. Portnoy, "Divorce Coaches: A New Resource for Matrimonial Lawyers" (2006) 19:4 Am. J. Fam. L. 231 (Proquest) at 1, D. Todd Sholar, "Collaborative Law – A Method for the Madness" (1993) 23 Mem. St. U.L. Rev. 667 at 670.

<sup>144</sup> Kulerski, *supra* note 15 at 1.

<sup>145</sup> Shields, *supra* note 125 at 33.

<sup>146</sup> Tessler, *supra* note 132 (article) at 323;

Chip Rose, J.D., Collaborative Family Law Practice (1996) [unpublished] at 7.

<sup>147</sup> Shields, *supra* note 125 at 33.

<sup>148</sup> *Ibid.* at xiv.

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Key to having a productive and creative experience is knowing what the parties truly want. Simply achieving any settlement is not the goal of Collaborative Law. The purpose is to achieve an agreement that works and truly reflects the parties' interests rather than simply law-based rights.<sup>149</sup>

In the *Miglin* fact pattern, the parties arrived at a settlement to their divorce issues: *inter alia*, within the framework of their separation agreement, the parties signed a five-year consulting agreement between Mrs. Miglin and the resort owned by the parties, whereby Mr. Miglin agreed to pay Mrs. Miglin \$15,000 per year through the business as consulting fees. The agreement provided for a renewal "from time to time" by mutual consent. Shortly after the divorce, Mr. Miglin, who was displeased with some of Mrs. Miglin's decisions, began to treat her differently and their amicable relationship deteriorated. Mr. Miglin became aggressive and dominating. As of the third year of the contract, Mrs. Miglin had ceased to work for the resort. The contract was nonetheless honoured until the fifth year but was not renewed.

The couple did arrive at a slightly unusual negotiated agreement in that the parties decided on a consulting contract for Mrs. Miglin, as opposed to spousal support. Although the agreement must have been thoroughly considered, it can be argued that the agreement was not acceptable given that Mrs. Miglin's needs and interests were not met in that she was not provided any true financial security with the existing agreement and hence her return to court to obtain spousal support. It is unknown from the judgments whether or not the parties' true interests were ever revealed or dealt with in the

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<sup>149</sup> *Ibid.* at iv.

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agreement. What does seem obvious is that while Mrs. Miglin sought stability and protection of her financial future, what she received was a consulting contract that relied on her husband's good-will and ultimately did not meet either of her goals.

The goal behind Collaborative Law is to help the participants to focus on the process instead of substantive perspectives. The shift from rights to interests is examined in this process. Collaborative Law attorney, Chip Rose conceptualises this shift as follows:

**Individual perspectives:** each participant brings to the negotiation his or her own distinct viewpoint on the relationship, the facts, the issues and possible outcomes;

**Interests:** each participant has interests that are unique to the individual **and** interests that overlap those of the other party;

**Beliefs and values:** each participant has beliefs and values that result from an accumulation of their life experience.<sup>150</sup>

Understanding and working with these elements instead of simply concentrating on substantive issues is central to effective negotiations and is at the heart of the collaborative process.

The traditional adversarial process is designed to challenge and defend a position which is the antithesis of agreement-making. The task of the attorneys in collaborative negotiation is to identify the real interests behind the positions.<sup>151</sup> This is accomplished through exploring and discussing the issues in question with the parties and by actually

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<sup>150</sup> Rose, *supra* note 146, chapter one at 2.

<sup>151</sup> Sholar, *supra* note 143 at 669.

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listening to the concerns brought up. In addition, the Collaborative Law process, from the start of the negotiations, ensures that discussions are instrumental to obtaining an equitable and satisfactory agreement for both parties by establishing a procedure that promotes collaboration, trust and success. This is accomplished by setting very firm ground rules for the parties and by insuring that everyone has the opportunity to truly express him or herself and to know that he or she is being heard.

Moreover, the collaborative process ensures, and is dependent on, full and voluntary disclosure from the very earliest stage. The parties are trained immediately in the knowledge that they have the highest fiduciary duty to each other regardless of whether this is imposed by law.<sup>152</sup> This is maintained and enforced through a participation agreement that is signed at the outset of the process. If the contract is breached the party cannot continue with Collaborative Law and will lose his current representation.

This policy is consistent with the view that negotiations based on low disclosure levels result in misrepresentations about true interests, an element at the heart of the Collaborative Law process. When full disclosure is not met parties end up with an unsatisfactory agreement even though obtaining an optimal one was possible.<sup>153</sup>

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<sup>152</sup> Tessler, *supra* note 132 (book) at 8.

<sup>153</sup> Ernest M. Thiessen, & Joseph P. McMahon Jr., "Beyond Win-Win in Cyberspace" online: J.P. McMahon [http://www/jpmcmahon.com/beyond\\_win.html](http://www/jpmcmahon.com/beyond_win.html) at 2.

Furthermore, as Pauline Tessler observes, the Collaborative Law process is completely transparent. There are no back-room negotiations between the lawyers in Collaborative Law; everything takes place right in the open.<sup>154</sup> Meetings involving the parties and their attorneys are the norm by which the negotiations proceed. The true desires, interests and needs are open to both parties, and both clients must be truly committed to meeting each party’s legitimate goals whenever possible.<sup>155</sup>

Collaborative Law functions within a complete paradigm shift from an adversarial approach to a cooperative or collaborative approach. The chart that follows demonstrates this distinctive shift.

<i>Adversarial</i>	<i>Collaborative</i>
Focus on legal analysis, facts/ law	Focus on client and the other party
Focus on outcome	Focus on process to meet clients’ needs
Positional bargaining	Interest-based negotiation
Listen to obtain facts for evidence	Listen to discover interests by understanding needs and relationships
Controlled by lawyers (the lawyers and the Court s set the pace)	Controlled by clients (the clients decide which issues are to be dealt with first and will also determine the pace of the negotiations and discussions)

<sup>154</sup> Tessler, *supra* note 132 (book) at 8.

<sup>155</sup> *Ibid.* Also note that this does not mean that the individual client cannot have meetings with their own attorney to discuss issues fully and freely in private.

Take direction which may arise from client's anger, fear, grief	Work to discover client's true interests
Support client's desire for undue advantage	Encourage compassion and enlightened self interest
Support client's self concept as a victim	Foster personal responsibility
Communication primarily between lawyers	Communication primarily with clients and two lawyers in face to face meetings
Focus on legal issues	Focus on issues affecting the separating family
Lawyers' efforts go towards building the case	Lawyers' efforts go towards facilitating realistic expectations, creative problem solving and reaching resolutions which best suit the particular family in making a major life transition.
Process may escalate conflict	Process does no harm (the Process does not contribute to the harm that already exists, although coming face to face with the other party may be detrimental in some instances.)

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When parties employ positional bargaining styles, they only focus on one thing: what they want. With this perspective in place, the only possible outcome is to have one winner and one loser, or two losers. When the bargaining style is interest-based, as with Collaborative Law, the potential outcomes multiply, making a win/win situation a likely outcome.

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<sup>156</sup> Smith, *supra* note 138.

Interest-based negotiations can be much more productive and beneficial than positional bargaining.<sup>157</sup> The adversarial approach makes the assumption that parties who are in conflict are unable to, or do not have the capacity to, make their own decisions. Collaborative Family Law on the other hand starts with the premise that spouses in divorce or separation negotiations, despite the level of conflict, are most certainly able to make proper decisions for him or her selves, provided they have suitable guidance. Essentially, Collaborative Lawyers work from the premise that the final arbitrator in the dispute should be the parties and not their lawyers or a judge.<sup>158</sup> Furthermore, given that negotiations commence immediately in the Collaborative process, the parties have ample time over the course of the negotiations to formulate and address their interests instead of simply their legal rights. Courthouse negotiations are generally last-minute attempts to settle and my experience has been that there is not enough time to necessarily examine all creative possibilities such as unique parenting plans or alternative arrangements for property.<sup>159</sup> In contrast, in Collaborative Law the time needed to explore all options is taken. So, for example, a party may wish to explore alternative forms of medium term financing in order to obtain appropriate housing for all involved, at the very least for a transitional period. If the parties had on the other hand only been preparing for litigation, where legal rights will be enforced as opposed to interests, there may be no time or thought given to alternative possibilities which takes less time and energy than in

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<sup>157</sup> Slovin, *supra* note 134; Smith, *supra* note 138 at 98.

<sup>158</sup> Joshua Issacs, "A New Way to Avoid the Courtroom: The Ethical Implications Surrounding Collaborative Law" (2005) 18:3 *Geo. J. Legal Ethics* 833 (Proquest) at 2; Smith, *supra* note 138 at 45.

<sup>159</sup> In my 11 years experience as a family law practitioner, I have observed that it is only once the basics have been settled that the parties can relax enough to consider the intricate details of an agreement. Given that last minute negotiations are just that, done at the last minute, there is no time to explore and discuss creative alternatives. It is most likely that only the basics will be handled adequately. Generally, the bulk of the negotiations may be handled in one morning or one day if the trial was scheduled for two or more days.

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preparing for litigation, not to mention the increased legal fees. When more time is taken preparing for a trial rather than settling it, the larger the legal fees will be because one will generally have to pay for the trial preparation as well as for the actual last-minute negotiations. This is not to say that Collaborative Law is not expensive, it too can take numerous hours to come to a negotiated outcome, however, at least with the Collaborative process, the time is spent on trying to negotiate right from the beginning therefore all fees incurred are for trying to obtain a settlement not in trying to prepare for court.

Another advantage of the Collaborative Law process is that there is always the potential to set aside the constraints of the law, unless the law in question is of public order, such as the application of the guidelines for child support. The parties have the obligation and responsibility of creating a formula that works for their unique set of difficulties. This does not mean that the law is cast aside, but it does mean that the law and jurisprudence constitute only one of many potential solutions to the problem.<sup>160</sup> Other solutions are only limited by the team's creativity. For instance, instead of establishing a strict 50/50 division on all items, the parties may decide to delay partition of certain items including pension plans if an immediate division may be detrimental to one or both of the parties.

Collaborative lawyers actively participate in the process, but their role diminishes over time. The lawyers provide their client with opinions, options and suggestions, and

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<sup>160</sup> Slovin, *supra* note 134 at 3.

most of all, protection.<sup>161</sup> They must ensure that their clients are aware of all the options, all the while seeking a solution that satisfies the expressed interests of both parties, whether or not this is obtained in accordance with the law. Essentially, the lawyers are responsible for the process; the parties are responsible for the outcome.<sup>162</sup>

Professor Ronalda Murphy observes that:

Equality is also presumed to exist and to be enhanced by participation in the resolution of the dispute itself. Advocacy on behalf of the client, within the negotiation procedure itself and gradually diminishing as the parties develop their own solutions, ensures parties are not left to fend for themselves from the beginning. CFL is thus superior to mediation, which preserves the status quo of power between the parties, and typically does not involve legal representation of the parties during the process.<sup>163</sup>

### C. GAME THEORY AND COLLABORATIVE LAW: ARE THEY COMPATIBLE?

Can Game Theory be applied to Collaborative Law or a similar negotiating style? Given the overt similarities in the principles underlying both Game Theory and Collaborative Law, the answer seems to be a resounding yes. Although this has yet to be applied in practice, at least one author, attorney Gregg Herman, thinks that the application of Game Theory to Collaborative Law is an idea whose time has come. He suggests a correlation between game theory and divorce settlement negotiations.<sup>164</sup>

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<sup>161</sup> Tessler, *supra* note 132 (article) at 318; Smith, *supra* note 138 at 87.

<sup>162</sup> Smith, *supra* note 138 at 87.

<sup>163</sup> Ronalda Murphy, "Is the Turn Toward Collaborative Law a Turn Away From Justice?" (2004) 42 Fam. Ct. Rev. 420 at 466.

<sup>164</sup> Gregg Herman, "Math Games and Collaborative Law" online: Leob and Herman <<http://www/loebherman.com/articles/herman/mathcd02.shtml>> at 1.

The Prisoner's Dilemma illustrates the starting premises of Game Theory: if players co-operate they each yield better results than if they do not co-operate, and although they are acting rationally, they are operating with imperfect information which leads to poorer outcomes. Herman argues that the scenario laid out in a divorce situation is no different; if the parties could cooperate they would have the best opportunity of obtaining the most advantageous results for both.<sup>165</sup>

Herman also argues that the application of Game Theory to divorce situations through Collaborative Law is obvious with clear benefits. He thus posits: "Wouldn't it be nice to negotiate a settlement which expands the pie available, rather than dividing it?"<sup>166</sup> Again, in Collaborative Law and Game Theory, all possibilities can be examined, including those that are not immediately obvious but may very well be advantageous to all parties. The "pie" can also be expanded to include intangible interests such as psychological well-being and relationships, as opposed to the traditional litigation strategies which ride rough-shod over these interests.

The next question to be answered is whether Collaborative Law is adaptable to Game Theory. The similarities are abundant, but are they enough? Can the negotiation style used in Collaborative Law be tweaked to accommodate the analytical theory of games?

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<sup>165</sup> *Ibid.* at 1.

<sup>166</sup> *Ibid.* at 2.

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Another aspect to be examined in both Game theory and Collaborative Law is that of *rationality*. In Game Theory, it has been argued that there are two types of rationality:

*[I]ndividual* rationality, which prescribes to each player the course of action most advantageous to him under the circumstances, and *collective* rationality, which prescribes a course of action to both players simultaneously. It turns out that if both act in accordance with collective rationality, then *each* player is better off than he would have been had each acted in accordance with individual rationality.<sup>167</sup>

A step of major importance in Game Theory is to determine the utility or payoff involved in the game for each player. In order to ascertain what the utility value for each individual player should be and what payoff is associated with this utility value, the parties have to uncover what it is they want. In Collaborative Law, while this necessity is also paramount, the key is to look at the interests of both players and see how they can be meshed. The parties must both agree to respect each other's needs. The parties work together with their attorneys to decide their true interests. Interests and utility are one and the same. This dialogue is encouraged and respected in Collaborative Law.

According to the Participation Agreement for Collaborative Family Law and Principles and Guidelines,<sup>168</sup> typically signed during the first group meeting, the parties must contractually engage to commit to these requirements, thereby signifying their importance.

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<sup>167</sup> Barash, *supra* note 84 at 86.

<sup>168</sup> Gutterman, *supra* note 137 at 400.

- We understand that we are still expected to assert our respective interests and that our respective lawyers will help each of us to do so.
- We understand that each lawyer will, however, take into account the needs of the other party, endeavoring to reach a fair and reasonable settlement of all issues.
- Each of us will be expected to take a reasoned position in all disputes. Where such positions differ, each of us will be encouraged to use our best efforts to create proposals that meet the fundamental needs of both of us, and if necessary, to compromise to reach a settlement of all issues.<sup>169</sup>

In Collaborative Law, the definition of *relevance* moves well beyond its narrow legal definition to embrace all matters of *importance*.<sup>170</sup> In other words, the focus is not only on *legally* defined issues such as custody, access, support, and partition of financial interests. It can extend well beyond these issues to include any aspect that is important to the parties such as future relationships, dealing with the children, and preservation of existing parenting roles. This is true as well of Game Theory. It is the player and the player alone who determines what he or she is playing for, and its individual importance.

If one is financially motivated, the application of Game Theory can promote a better financial settlement by focusing on this particular interest. If the motivation is for more intangible gains, such as family relationships, security, or even psychological well-being, this can also be accomplished. Cooperation and communication, once considered soft attributes in negotiations, actually work and can produce positive outcomes overall.

Applying Game Theory to Collaborative Law can give the negotiation model more credibility, thereby enticing those who may not be disposed to consider feelings,

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<sup>169</sup> Paragraphs C.(3), C.(6) and H(3).

<sup>170</sup> Tessler, *supra* note 132 at 330.

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interests and relationships important. If they can obtain their desired goals in a more successful fashion than in traditional negotiations, why not try it? If they learn the value of intangible benefits along the way, this is all the better.

**Chapter 3****THE APPLICATION OF GAME THEORY TO FAMILY LAW****A) NORMATIVE STRATEGIES*****a) The Prisoner's Dilemma as a non-zero sum game***

Upon examining the process in the Prisoner's Dilemma there are clearly only two options to play. You either "co-operate" with your fellow player in that you do not "sell him out," or you "defect" and you save yourself.<sup>171</sup> To plead guilty is equated to "defecting" from the common good in order to pursue one's own personal needs. Game theorists use the term "nasty" to describe this type of play.<sup>172</sup>

As can be seen by the previous analysis of the game with the utility being prison time served, one might conclude that "egoistic individuals guided by logic will always seek to exploit one another."<sup>173</sup> The message, if one can be extracted from this game, is quite pessimistic. It suggests that a party should only think of himself or herself.<sup>174</sup> After all, logic dictates that your partner will also attempt to defect so you might as well protect yourself and strike first. If your partner happens to cooperate, you have the ability to move ahead of him by once again striking first and by doing so immediately. In order for you to win, the other player must lose.

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<sup>171</sup> Ball, *supra* note 121 at 417.

<sup>172</sup> Barash, *supra* note 84 at 70.

<sup>173</sup> Ball, *supra* note 121 at 418.

<sup>174</sup> *Ibid.*

This mindset can be seen at negotiation tables around the world. It may be a survival instinct or it may be an ultimate suicide wish depending on your point of view. If we terminate the analysis of the Prisoner's Dilemma at this point, we may not have much hope for interest-based, win-win negotiations, but fortunately the analysis does not stop here. There is an element that changes all this; that element is communication.<sup>175</sup>

With an analysis of the problems in the Prisoner's Dilemma, one can see that a major drawback to a better outcome for both players is the lack of communication.<sup>176</sup> If player 1 had been able to discuss the situation with player 2, the outcome could have been very different indeed because the parties could have both agreed not to confess thereby ensuring a better result for both. However, even without direct communication, it was discovered when the Prisoner's Dilemma was repeatedly played that communication can evolve. If you play the game more than once, even if the players cannot directly communicate, they can signal their intentions by the way they play.<sup>177</sup>

Imagine that player 1 cooperates in round one. Player 2 may have decided to follow suit by cooperating in round two. On the other hand, if the first play by both players is to defect, they may both decide in subsequent rounds that cooperating will lead to better results. Emotions do not necessarily influence this change. Self-interest is often enough to make cooperating the best choice.<sup>178</sup>

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<sup>175</sup> *Ibid.*

<sup>176</sup> *Ibid.*

<sup>177</sup> *Ibid.*

<sup>178</sup> *Ibid.* at 419.

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The conclusion that can be drawn from this form of repeated, or *iterated* Prisoner's Dilemma is that the unsatisfactory outcome from one single round, which has been proven not to be the best possible outcome as it stems from defection, is not insurmountable provided more than one round is played.<sup>179</sup> One must keep in mind that in family law negotiations, rounds are not necessarily represented by sessions but rather each item discussed or each solution proposed can constitute a round. For example, when the division of a car is being discussed, this would constitute a round, but deciding who will keep the car in the interim can also constitute a round.

Game theory, through the Prisoner's Dilemma, teaches us that not communicating can lead to undesirable results for both parties. This principle can be applied to family law negotiations as the same is true in this context. As such, lesson one is that communication can yield better results. The possibility of new outcomes has increased as you now know what the other party is thinking. In family law, if you learn that your spouse does not necessarily want to keep the house but actually wants to keep the children in the same neighbourhood school, the possibilities have changed from sell or keep the house, to find another house in the neighbourhood or ask the school if the children can still attend if they are out of the jurisdiction. The real point is that the more you communicate, the more you know and the more creative you can be in your problem solving. You are also more likely to find a common interest.

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<sup>179</sup> *Ibid.* at 418-419.

If cooperation can evolve even with indirect communication (gleaned from actions not words) then imagine how the game could progress with direct communication. The next strategy examines the value of cooperation.

***b) Tit for Tat***

In the late 1970's, Robert Axelrod, a renowned game theorist, developed an experiment to determine the best strategies to employ in an iterated game of Prisoner's Dilemma. He asked professional game theorists to submit strategies and then entered each strategy into a computer program to conduct a round robin tournament with all of the entries.<sup>180</sup>

The tournament was conducted much like a computer chess tournament. Each entry had a full history of the interactions already completed and this history could be used in making the choice of whether or not to cooperate on the current move. There were fourteen entries stemming from game theorists in the fields of economics, psychology, sociology, political science, and mathematics. The results of the tournament were startling, even to Robert Axelrod.

The winner was the most simplistic strategy entered in the tournament. The name of the strategy was called "Tit for Tat" and was submitted by Anatol Rapoport of the University of Toronto. Tit for Tat is the strategy of starting with cooperation and then doing what the other player did on the previous move. A player who defects is punished in the next period.<sup>181</sup> Tit for Tat is further defined by Douglas G. Baird *et al.* as a "strategy in an infinitely repeated game in which a player embraces the strategy of cooperating in the first period and, in all subsequent periods, defecting if the other player defected in the immediately preceding period, but otherwise cooperating."<sup>182</sup>

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<sup>180</sup> *Ibid.* at 419- 420.

<sup>181</sup> Robert Axelrod, The Evolution of Cooperation (USA: Basic Books, 1984) at vii-viii. See also Francis J. Cantania, jr, "Learning from the Process of Decision: The Parenting Plan" 2001 B.Y.U.L. Rev. 857. See also Paul G. Mahoney & Chris William Sanchirico, "Norms, Repeated Games, and the Law" (2003) 91 Cal. L. Rev. 1281.

<sup>182</sup> Baird, *supra* note 78 at 316.

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Unlike with other more aggressive strategies, the player who punishes will return to the cooperative moves if the other person also continues to cooperate.<sup>183</sup> This strategy as we will see can be applied to family law negotiations as it promotes cooperation but does not allow for a party to be manipulated.

This simple strategy provided an enormous breakthrough in understanding the science of cooperation. It also speaks volumes about the strategies that should take place in family law negotiations in order to achieve optimal results. The lessons from this strategy do not only involve behaviour that should be incorporated, it also, as shall be seen, teaches lessons about what behaviour should be avoided.

The payoff for using Tit for Tat is simple. If Player 1 is playing against an unconditional cooperator, Tit for Tat will allow cooperation throughout the game. Given the mutual cooperation, both players do equally well. If Player 1 is playing against an unconditional defector, Tit for Tat will cause Player 1 to lose the first round because player 1 will start off by cooperating but from that point on he or she will defect consistently. Because of the first round, Player 1 will be slightly behind in the score. Both players will fare much worse than if they had cooperated.<sup>184</sup>

By repeating the opponent's last move whether defection or cooperation, a player employing Tit for Tat is extremely versatile and can adapt to any situation. When pitted against co-operators, the player uses "nice" strategies; against defectors, the player can be

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<sup>183</sup> *Ibid.*

<sup>184</sup> Ball, *supra* note 121 at 420.

tough and use “nasty” moves. When the opponent uses the combined strategy of cooperation and defection, the player can adapt accordingly. Tit for Tat presents the best of both worlds; it “reaps the benefits of cooperation where possible, but cannot be exploited. Neither does it exploit: it never achieves a higher payoff than its opponent.”<sup>185</sup>

Given the success of the first tournament and given the surprise winner, Robert Axelrod conducted another tournament, this time receiving sixty-two entries from six countries. Each participant was provided with the results from the first tournament. The entries proved to be very elaborate in some cases. Some of the entries tried to improve on Tit for Tat. Tit for Tat was re-entered in the tournament by Anotol Rapoport, and again, it won.<sup>186</sup> Game theorist and physicist Philip Ball explains Tit for Tat’s attraction.

What then makes Tit for Tat so special? For one thing, it is flexible: able to cooperate but not open to exploitation... This sends a clear message: TFT will do as it is done by. It is a strategy from the Old Testament, not the New: an eye for an eye, not turning the other cheek.”<sup>187</sup>

It is important to understand, however, that this does not mean that Tit for Tat is always the best way to play iterated Prisoner’s Dilemma. In fact, it depends on whom you are playing against. What it does mean is if you do not know who you are up against, Tit for Tat is the best default strategy.<sup>188</sup> In applying this reasoning to Collaborative Law, you may know what your spouse will do but you do not necessarily know what his or her

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<sup>185</sup> *Ibid.* The reader should keep in mind that in family law negotiations a round may constitute dealing with a single particular item or a subset of a particular item therefore, even if the round ends in defection, it does not mean that the whole negotiation process is over. The parties will move to the next item and may be successful in other rounds ultimately arriving at an overall settlement. Furthermore, an earlier defection may be reversed if the parties feel positive about other strides that have been made in subsequent rounds.

<sup>186</sup> Axelrod, *supra* note 181 at viii.

<sup>187</sup> Ball, *supra* note 121 at 421.

<sup>188</sup> *Ibid.*

attorney is prepared to do. Thus, within the negotiation process the “players” are likely to be served well by Tit for Tat, given that it should encourage civility, openness and possibly even generosity; each player of course being concerned about avoiding hurtful reciprocity on the part of his or her “opponent.”

Upon analysing the data and outcomes from both tournaments, Axelrod concluded that there are four properties that make a strategy successful. The first is the “avoidance of unnecessary conflict by cooperating as long as the other player does.”<sup>189</sup> The second is “provocability in the face of an uncalled for defection by the other.”<sup>190</sup> The third is, “forgiveness after responding to a provocation.”<sup>191</sup> The fourth is the “clarity of behaviour so that the other player can adapt to your pattern of action.”<sup>192</sup>

Axelrod summarized the simple secrets of TIT-FOR-TAT’s success by pointing to its combination of being nice, retaliatory, forgiving, and clear. Its niceness prevents it from getting into unnecessary trouble. Its retaliation discourages the other side from persisting whenever defection is tried. Its forgiveness helps restore mutual cooperation. And its clarity makes it intelligible to the other player, thereby eliciting long-term cooperation.<sup>193</sup>

Over all, Robert Axelrod concluded the “nice” strategies (nice strategies are labelled as such because they are not the first to defect<sup>194</sup>) do consistently better than nasty ones. This conclusion could already be determined from the results of the first tournament. The eight highest ranking strategies were all nice, the nasty strategies fared

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<sup>189</sup> Axelrod, *supra* note 181 at 20.

<sup>190</sup> *Ibid.*

<sup>191</sup> *Ibid.*

<sup>192</sup> *Ibid.*

<sup>193</sup> Barash, *supra* note 84 at 95.

<sup>194</sup> Ball, *supra* note 121 at 421.

must worse and were separated from the nice ones by a wide gap in points.<sup>195</sup> This is important when you apply the principle to a couple negotiating a family settlement. Their counsel should advise their clients that the nasty strategies do not work in the long run. Ultimately, the negotiation process will be more successful if the parties continue to cooperate, knowing they will not get away with a hostile move and that they will be forgiven after retaliation in order to move the negotiations forward. It is also important that these actions are clear so that both parties understand the strategy. Essentially the message to the other negotiating party is “I am fair, I will cooperate, but I will not be a pushover and I am not shy to demonstrate this.”

Axelrod also wanted to see if his findings could be applied to real-life situations such as war and world conflict. His central analytical consideration was how cooperation can emerge among “egoists” without “central authority.”<sup>196</sup> He argued that cooperation based solely on reciprocity was possible, and he wanted to determine the exact conditions under which this would happen. The “results from the tournaments demonstrate that under suitable conditions, cooperation can indeed emerge in a world of egoists without central authority.”<sup>197</sup> Apply this now to Collaborative Law. In the collaborative process there is no central authority in that the issues do not get resolved by a judge. Each party starts off as an egoist, only thinking of themselves. We can extrapolate from the findings of the Tit for Tat strategy that Collaborative Law has great potential for cooperation even without a central authority and that strategically it is possible to achieve cooperation without having a judge looming over the proceedings. The conditions for such

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<sup>195</sup> *Ibid.* at 422.

<sup>196</sup> Axelrod, *supra* note 181 at viii.

<sup>197</sup> *Ibid.* at 20.

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cooperation are indeed suitable, given the commitment of all involved to the process and in not wanting to turn to litigation and judicial decision-making if the process collapses.

This conclusion is very significant and cannot be taken lightly by negotiators. Being “nice” (cooperative) is clearly beneficial, and if the outcomes are quantitatively studied they demonstrate that being nice is not a sign of weakness after all. Being cooperative can put one in a position of strength given that it will result in a better negotiated settlement.

The tournament has demonstrated that cooperative strategies do better than non-cooperative ones. If the same principles are applied to family law, then an additional finding is that you do not have to be a pushover to cooperate, quite the opposite; you cooperate because the strategy works. So, not only is it best to communicate your interests, the tournaments demonstrate that cooperative strategies achieve better outcomes more often.

Also striking is the collective mindset with regard to cooperation, given the nature of the entries in both tournaments one and two. It would seem that even expert strategists had not given enough weight to the importance of forgiveness.<sup>198</sup> Individuals in the real world, therefore, can hardly be blamed for thinking that, in the course of negotiations, forgiveness is a sign of weakness and should be avoided. The next large concern is with how cooperation can evolve in a real-life situation. Axelrod expresses his concern as follows:

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<sup>198</sup> *Ibid.* at 39.

We know that people are not angels, and that they tend to look after themselves and their own first. Yet we also know that cooperation does occur and that our civilization is based upon it. But, in situations where each individual has an incentive to be selfish, how can cooperation ever develop?<sup>199</sup>

Based on the tournament results, Robert Axelrod determined that four principles could keep participants on track so as not to stray from the Tit for Tat game plan. The first is not to be envious of the other player's success; the second is to not be the first to defect; the third is to remember to reciprocate both cooperation and defection; and finally, not to be 'too clever.'<sup>200</sup>

The evolution of cooperation is important to examine, especially considering that in family law negotiations the parties may not be the best of friends. This discord – even animosity – between the parties does not seem not to be a drawback when one considers evidence of the evolution of cooperation in the most unlikely of circumstances: World War I trench warfare. The cooperation that emerged between warring soldiers has been termed the “Live and Let Live System”; it is quite compelling given the circumstances in which the parties found themselves.

The “system” was as follows: soldiers on the front lines often did not shoot at each other, despite ample opportunity to do so and even contrary to direct orders from their superior officers, *provided* the other side also demonstrated restraint. What made this mutual restraint possible was the fact that the soldiers could be in their trenches for months at a time, and therefore had continued contact. It was this element that had made

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<sup>199</sup> *Ibid.* at 3.

<sup>200</sup> *Ibid.* at 23. Also see Chapter 6 wherein these elements are fully explained. For instance “not being too clever” means the strategies should be kept simple.

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iterated games of Prisoner's Dilemma somewhat cooperative. In order to survive they had to cooperate even though this was never explicitly agreed upon.<sup>201</sup> This can be seen from a soldier's experience in 1915:

It would be child's play to shell the road behind the enemy's trenches, crowded as it must be with ration wagons and water carts, into a bloodstained wilderness... but on the whole there is silence. After all, if you prevent your enemy from drawing his rations, his remedy is simple: he will prevent you from drawing yours.<sup>202</sup>

The "Live and Let Live System" can demonstrate that you do not have to be on friendly terms in order to cooperate and furthermore, in the right set of circumstances, cooperation can develop even amongst enemies. This is an interesting conclusion particularly if one considers the animosity present between many divorcing or separating couples. Although the life and death elements are usually absent in the domestic scenario it is important to not dismiss the possibility of negotiations simply because the parties cannot get along.

Key to this process, however, is once again the need for continued contact with the other negotiating party. Tit for Tat is in fact stable in its results, if there is a large chance of the negotiations or contact continuing.<sup>203</sup>

Despite its potential benefits, there are unfortunately some inherent problems with Tit for Tat. After Tit for Tat won both tournaments, it looked completely invulnerable. However, it appears to have a built-in flaw when applied to the real world: people make

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<sup>201</sup> *Ibid.*

<sup>202</sup> *Ibid.* at 79.

<sup>203</sup> *Ibid.* at 96.

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mistakes and intentions can be misunderstood.<sup>204</sup> Given this, even though a defection may have simply been an error, the strategy does not allow for this possibility and returns the blow.

The problem is further compounded by the possibility of mutual retaliation when both players are using the Tit for Tat strategy. When one person makes a mistake, given that the last move of Player 1 is repeated by Player 2, the players can be trapped in a never-ending cycle of retaliation, which will undoubtedly destroy the outcome of a negotiation.

Fortunately, there is a more forgiving sequel to Tit for Tat, one that allows for mistakes. This spin-off strategy is called Tit for Two Tats and is based on understanding and forgiveness. A player using Tit for Two Tats will only retaliate after the second defection. Tit for Two Tats performed extremely well. This high performance brought out an interesting discovery. The other participants in the tournament made the common error of thinking that they could achieve better results by using a less forgiving strategy. In fact, Tit for Two Tats was much more successful because it was soon discovered that large gains can be made by being more forgiving, not less.<sup>205</sup>

Tit for Two Tats was developed and entered by an evolutionary biologist, John Maynard Smith. This entry did not participate in the first tournament, but if it had it would have won.<sup>206</sup> Some of the original strategies entered had led Tit for Tat into the

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<sup>204</sup> *Ibid.* at 430.

<sup>205</sup> *Ibid.* at 432.

<sup>206</sup> *Ibid.*

dreaded mutual retaliation, even without errors in the play of the game.<sup>207</sup> As such, Tit for Two Tats would have fared better.<sup>208</sup>

The next question to be looked at is whether or not real people play the “game” in this fashion. Psychologists have looked at this question extensively and agree that cooperation does indeed evolve and develop. The degree of the cooperation, however, is widely dependant on the character and nature of the players and the circumstances of the “game”. For example, it is easier to defect if you are not sitting face-to-face with your opponent or if you can defect anonymously.<sup>209</sup>

Another factor that will affect the development of cooperation is temptation. If the player’s opponent has tendency to cooperate, he or she might be occasionally tempted to defect simply to boost his or her score.<sup>210</sup> This demonstrates that it is not simply the repetitive nature of the game that causes that cooperation to develop. Nor is it sufficient to say that potentially good outcomes are enough to make the participants cooperate. The logical process is more complicated indeed. To understand why this is so, consider the following scenario by Dr. David P. Barash, professor of psychology at the University of Washington.<sup>211</sup>

Two players engage in an iterated Prisoner’s Dilemma and have agreed to play 100 rounds. As we have seen, if both players cooperate each time their payoff will be

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<sup>207</sup> *Ibid.*

<sup>208</sup> *Ibid.*

<sup>209</sup> *Ibid.* at 419.

<sup>210</sup> *Ibid.*

<sup>211</sup> Barash, *supra* note 84 at 83.

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greater than had they both defected. It may then seem to make sense that the players should continue with this strategy for all 100 rounds. The problem is temptation. In any round it may be tempting to defect and catch your opponent off guard.<sup>212</sup>

Consider the situation of the *backward induction*. Both you and your opponent have managed to keep temptation at bay for 99 rounds, perhaps because you were concerned that if you defected, your opponent would retaliate in the next round. You have been happy with a better payout than would have occurred with both of you playing “nasty” rounds, but you have not enjoyed as high a payout as if only one of you had defected. You are about to engage in the last round. What should you do? Apparently the only logical answer is to defect! The reasoning is that since there is no game 101 as you had both already agreed on only 100 rounds, there is no longer any need to curb your temptation to defect. You do not have to worry about retaliation as there will be no subsequent rounds. Furthermore, logic would dictate that your partner will be as tempted as you are, therefore all the more reason to defect as well. Even if you believe that there is a subjective probability that the other player will cooperate, you will be better off defecting in the last round.

We have established that your best move is to defect in the final round, that is, round 100. Essentially, it does not matter what the other player does because in the last round it is still your best move regardless of your partner’s play. If that is the appropriate course, then what should happen in game 99? Once you have figured out that you should defect on game 100, that would mean that round 99 is in fact the last round and the same

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<sup>212</sup> Ball, *supra* note 121 at 416.

logic in round 100 should remain true for round 99, and so on and so forth all the way back to back to round 1.<sup>213</sup>

It would seem that we are back to square one and even though communication and cooperation will yield overall better results for all, temptation can ruin it for everyone. So is all lost? It does not seem so. The key is *not* to engage in the logic of the backward induction. Cooperation is illogical if you know the sequence of the game in advance. That is to say, once you know how many rounds you will play cooperation is no longer the logical step. The exact duration of the game has to remain unknown in order for cooperation to be the logical choice of strategy. "So iterated games of Prisoner's Dilemma can, in fact, logically lead to cooperation so long as the future is sufficiently unclear!"<sup>214</sup> With cooperation in place, the Prisoner's Dilemma can be a non-sum zero game and there is hope that the game will yield two winners instead of one winner and one loser.

The same is true of family law negotiations. If the parties are sufficiently unclear as to when the negotiations will end, the temptation to stop cooperating will not be as great. Imagine the situation where one party fairly negotiates a matter of utmost importance to himself, such as keeping his business intact. He may lose interest in cooperating if he thinks he has already obtained the only thing that was of value to him. He may at this point drag out the settlement of the rest of the items and not resolve them, or simply dig in his heels because he no longer feels he has any interest in cooperating. This is why it is important to be sufficiently vague about the duration of the negotiations

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<sup>213</sup> Barash, *supra* note 84 at 83.

<sup>214</sup> *Ibid.* at 85.

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(the number of rounds) and the termination of the “game.” If there is no final agreement until all the issues are satisfactorily dealt with, then the incentive to continue remains strong and there will be no chance of engaging the backward induction logic.

This is not to say that a lack of a final settlement before all issues are dealt with equates to one party holding an issue like custody over the other party’s head until the former gets what he or she wants. On the contrary, this is why I argue that child-related issues cannot be dealt with alongside financial matters. The analysis for custody and access must be done separately as distinct negotiations. For instance, all of the financial matters are dealt with as a group and the custodial aspects, as well as child support, are dealt with in a separate, distinct category and within a separate session. It is not until both sections, however, have been adequately dealt with that a final settlement can be concluded.

## **B. DESCRIPTIVE STRATEGIES**

Some strategies in Game Theory can have non-theoretical applications in family law. For instance, the practical principles found in the application of the Prisoner’s Dilemma can be used for property division in separation cases. There are also some more advanced algorithms that will be examined in this section.

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*a) Application of Prisoner's Dilemma matrix*

As seen in the application of the Prisoner's Dilemma strategy to the Game Theory matrix, virtually any problem in which interests can be quantified can use the strategy to determine different potential outcomes or solutions. I have not found any literature on the application of this matrix to family law scenarios, but given the principles learned through the Prisoner's Dilemma strategy, I will hypothesize that it could be used in the following manner.

In a hypothetical property division for a fictional couple Ann and Ben, the question of who will receive which good can be determined by applying the Prisoner's Dilemma matrix. Let us assume that Ann and Ben have three items to divide. The nature and actual monetary value of the items are irrelevant. The important element in the quantification of the goods is based on the subjective value or interest of the goods to each party. In other words, the value that the item holds for each of them can go beyond monetary value to include psychological attachments and other considerations.

The first step in the process once the actual items are determined is to discover the interest that each party has in each of the items. Key in this stage is that the parties understand what it is about the good that they want to have in order to quantify the object properly. In quantifying the good, non-tangible considerations, such as sentimentality or security can also be considered. In addition, despite the lack of examples on this point in the thesis, the intangible considerations can also be the subject of the debate alongside material items such as furniture and the car for instance.

The next step would be for the parties to quantify their interests by determining a value to be applied to each of the items based upon a predetermined total for these figures. For instance, the parties could both agree that the total value of all of these goods must add up to 50 or 100 or 333. The total itself does not matter, only that the parties are both using the same figure.

As an example, let us assume that the parties have chosen 100 as the total of the goods. They must then apply a utility point or payoff to each of the items and the total of each of the items must be 100. In a hypothetical scenario, the items could be quantified as follows:

	G <sub>1</sub>	G <sub>2</sub>	G <sub>3</sub>	Total
Ben's declared value	<b>15</b>	<b>50</b>	35	100
Ann's declared value	5	30	<b>65</b>	100

**Table 1.0**

These utility points can then be applied to the matrix and the plays will be determined. In this case, the plays are simply either keeping the items or not keeping the item. The matrix would look like this for each of the goods.

	Ann keeps $G_1$	Ann does not keep $G_1$
Ben keeps $G_1$	15, 5 <sup>215</sup>	15, 0
Ben does not keep $G_1$	0, 5	0, 0

**Matrix 2.0**

When you look at all the scenarios and examine the point allocation, the highest point allocation (15) on the board is attributed to Ben. As such, Ben would keep the item as he favoured it more. In the above scenario of keep or do-not-keep, it is hardly necessary to apply the table as the point allocation is clear; however, it can become more difficult if the plays are more complicated. At any rate, the steps and the visual representation are important so that the parties can clearly see all the options before them.

The same procedure would be used for the remaining two items. The end result would be that Ann would keep  $G_3$  for a total of 65 points and Ben would keep goods  $G_1$  and  $G_2$  for a total of 65 points (15 + 50). In this scenario, each of the parties should feel satisfied in the division as they can see that they each obtained exactly the same amount of points from the possible 100. The division is therefore equitable and neither party should feel that one did better than the other. In addition, both parties are satisfied because they are the ones who determined the point allocation regardless of whether the allocation was based on financial, psychological, or other factors. What is important to the client translates to the determination of the point allocation, nothing else.

<sup>215</sup> The first figure represents Ben's utility, the second represents Ann's.

In such a procedure, any inequality in the bargaining power between the parties would not be problematic. Parties have the same ability to attribute subjective value to the items under debate. Both male and female parties can thus give greater value to what is most dear to them without affecting the other player's choices. In addition, given that the procedure is non-confrontational; one party's possible desire to save the future relationship and other interests can be salvaged.

A problem with this approach can arise in the case of a tie in the point allocation or when the points are logically but not equally divided. For instance one party receives what they desire for a score of 55 points and the other party receives what they want for a score of 65 points. The division is logical (both parties acquire what they want) but the point value is not equal which may still prompt the party with the lower points to be envious. In the following arbitrary point allocation example, Ann may feel that she did not benefit equally from the procedure.

	G <sub>1</sub>	G <sub>2</sub>	G <sub>3</sub>	Total
Ben's declared value	6	67	27	100
Ann's declared value	5	35	60	100

Table 2.0

After the matrix application with a simple keep or do-not-keep play, the highest points would go to Ben for G<sub>1</sub> and G<sub>2</sub> for a total of 73 points (6 + 67), whereas Ann will only end up with 60 points for G<sub>3</sub>. Despite the fact that Ann is leaving with her most

coveted item, she may not feel that the procedure was fair and she could envy Ben's share of the partition. These problems, however, are addressed with in the application of "Fair Division" using the "Adjusted Winner" model, which, according to the theorists Brams and Taylor, are successful in guaranteeing an *envy free* division.

***b) Adjusted Winner***

A major aspect in parties believing that a negotiated settlement is fair is the concept of envy-freeness.<sup>216</sup> *Envy free divisions* are ones in which every person thinks he or she has received the most valuable portion of something and therefore does not envy anyone else. This evaluation is based on the person's own evaluation of the item.<sup>217</sup> Even though envy-freeness has been seen in mathematics literature for over forty years and in economics literature for over thirty years, algorithms guaranteeing envy-freeness in various situations are only a recent addition to the literature on division.<sup>218</sup> The guarantee of envy-freeness has a specific meaning in Game Theory. If you hold fast to the algorithm, the strategies that the other players uses cannot stop you from obtaining that which you think is the most valuable.<sup>219</sup>

What is particularly interesting about the fair-division use of Game Theory is that the basis for the division does not rest with a "naïve fair-division procedure of splitting every issue 50-50."<sup>220</sup> Fair-division strategies are based on the party's subjective value placed on any given item or issue. One such strategy is entitled Adjusted Winner.

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<sup>216</sup> Steven J. Brams, and Alan D. Taylor, Fair Division: From Cake Cutting to Dispute Resolution (Cambridge: Cambridge University Press, 1996) at 2.

<sup>217</sup> *Ibid.*

<sup>218</sup> *Ibid.*

<sup>219</sup> *Ibid.*

<sup>220</sup> *Ibid.* at 67.

Adjusted Winner is a point-allocation system whereby the parties' individual assessment of goods is taken into consideration. Jeremy Matz considered that "[w]hile the procedure is not perfect, it lowers the risk of unfair property division by limiting the effect of power imbalances between the divorcing spouses."<sup>221</sup> Before getting to the Adjusted Winner procedure, however, as with the Prisoner's Dilemma matrix application, the real issues (interests of the parties) will have to be determined.<sup>222</sup> There are two parts to the Adjusted Winner algorithm. The first step will be to determine the goods in question, and the value that each party individually and secretly applies to each good. The total value for all the goods in question, for each party, is 100 points.<sup>223</sup> Steven Brams and Alan Taylor point out that it is important to remember that the values are subjective, based solely on how the party values particular assets.<sup>224</sup> As with the Prisoner's Dilemma matrix, value may have been derived through a strict quantification of the good or may involve other factors such as sentiment or emotion.

I will use the hypothetical property division a second time:

		G <sub>1</sub>	G <sub>2</sub>	G <sub>3</sub>	Total
Ben's	declared	6	67	27	100
Ann's	declared	5	35	60	100 <sup>225</sup>
value	value				

Table 3.0

<sup>221</sup> Matz, *supra* note 49 at 1342.

<sup>222</sup> Ivars Peterson, "Formulas for Fairness" online: Science News Online <[http://www.sciencenews.org/pages/sn\\_arch/5\\_496/bob1.htm](http://www.sciencenews.org/pages/sn_arch/5_496/bob1.htm)> at 3.

<sup>223</sup> Brams, *supra* note 216 at 69 ff; Brams, *supra* note 2 at 11.

<sup>224</sup> Brams, *supra* note 216 at 71.

<sup>225</sup> *Ibid.* at 69.

As discussed, the “Winner” part of this analysis comes from the way the initial distribution of goods is made. In the above scenario, the person who has awarded the highest number of points to a given good is attributed that item. Ben will therefore receive items  $G_1$  and  $G_2$ , for a total of 73 utility points and Ann will be attributed  $G_3$  or 60 utility points. Given that Ann and Ben do not have an equitable share of the points with the initial stage, the “Adjusted” element of the algorithm must be applied. Brams and Taylor call this an “equitability adjustment.”<sup>226</sup> A portion of Ben’s points will have to be transferred to Ann in a specific order to equalize the point distribution.<sup>227</sup>

To achieve this equitability adjustment, one must first determine the ratio of the players’ valuations and then commence adjustments starting with the good that has the smallest ratio.<sup>228</sup> In this case, Ben has received goods  $G_1$  and  $G_2$ . Ben had attributed 6 points to  $G_1$  and Ann had attributed 5 points. Ben had attributed 67 points to  $G_2$  and Ann had attributed 35 points to the same item. Thus the smallest ratio is for  $G_1$  with a 1.2 ratio.

After adjusting  $G_1$  by attributing 5 points to Ann (her point attribution is used for this item because one always takes his or her own point attribution, he or she is never bound by the other party’s subjective point attribution for any given item) Ann will then be the winner of  $G_1$ . However, the point distribution is still not equal because Ann would have only 65 points to Ben’s 67 points. In order to equalize the points, only a fraction of

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<sup>226</sup> *Ibid.* at 70.

<sup>227</sup> Brams, *supra* note 2 at 11.

<sup>228</sup> Brams, *supra* note 216 at 70.

the item  $G_2$  must be transferred (this will result in a monetary transfer). Ben therefore ends up with 99% of  $G_2$  for a total of 66.3 of his possible 100 points and Ann receives  $G_1$  and  $G_3$  and 1% of  $G_2$  for a total of 66.3 of her possible 100 points.<sup>229</sup> The rules can be summed up as follows:

1. Party 1 temporarily wins the items on which he or she puts more points, and party 2 temporarily wins those on which he or she puts more points.
2. Tied items on which the parties put the same number of points are awarded, one-by-one in any order, to the party with the fewer points at the time the item is awarded.
3. If the total number of points that each party wins is the same, then partition is final.
4. If party 1 wins more points than party 2, party 1 will then give back items (or part of items) to party 2 in a certain order until both parties have exactly the same number of points. The transfer is called *equitability adjustment*. A part of an item can be divided by partitioning an item that is easily divisible (sum as money) or by selling an item that cannot be taken apart. A third alternative is to simply effect compensation with items not at play in the group of goods.
5. The giveback starts with the item having the smallest ratio of party 1's points to party 2's points, then goes to the item with the next-smallest ratio, and so on.<sup>230</sup>

Thus, unlike the simple matrix approach to the division of goods described earlier in this paper, the Adjusted Winner point distribution system deals with the problem of envy by distributing the points equally.

In order to judge the effectiveness of the strategy, Brams and Taylor, in Fair Division: From cake-cutting to dispute resolution,<sup>231</sup> use the criteria of being envy free (as

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<sup>229</sup> *Ibid.*

<sup>230</sup> Brams, *supra* note 216 at 75.

<sup>231</sup> Brams, *supra* note 216.

already discussed) as well as efficiency and equitability. They have demonstrated that the Adjusted Winner strategy is efficient, in that any allocation that is better for one person is worse for the other.<sup>232</sup> The strategy is also equitable in that one party's announced valuation of his allocation is equal to the other party's announced valuation of her allocation.<sup>233</sup> The parties will not envy the other party's allocation and would not trade his or her distribution for the other.<sup>234</sup>

One will note that the evaluation of the strategy for "equitability" and "envy-freeness" is based on the announced quantification of the goods in question. Brams and Taylor confirm that legal entitlements never enter in the algorithm.<sup>235</sup> Truthfulness plays an important role in whether or not the game is played fairly and how the result is perceived.<sup>236</sup> If a party becomes aware of the potential or actual point evaluation to be assigned to a given item, the whole procedure can be manipulated if this party wants to be spiteful.<sup>237</sup>

If only one of the parties has the information, this could lead to manipulation and a distortion of the game. If party 1 knows the preferences of party 2 but the reverse is not true, party 1 can manipulate the point allocation to obtain what he or she actually desires but by bidding low on the item (because the player knows what the other will bid) he or she can get more points in the adjustment round to equalize the allocation points.

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<sup>232</sup> *Ibid.* at 70.

<sup>233</sup> *Ibid.*

<sup>234</sup> *Ibid.* at 71.

<sup>235</sup> Matz, *supra* note 49 at 1389.

<sup>236</sup> Brams, *supra* note 216 at 67 ff.

<sup>237</sup> Brams, *supra* note 2 at 70.

Professors Brams and Taylor provide the following example of such manipulation in their book The Win –Win Solution,<sup>238</sup> for the distribution of two paintings; a Matisse and a Picasso:<sup>239</sup>

...if Ann and Ben are sincere, their point assignment will be as follows:

<i>Item</i>	<i>Ann</i>	<i>Ben</i>
Matisse	75	25
Picasso	25	75

...now suppose that Ann knows Ben's preferences, but Ben does not know Ann's. In addition, suppose that, in the absence of better information, Ben will be sincere by announcing 25 points for the Matisse and 75 points for the Picasso, and Ann knows this. Can Ann benefit from being insincere?

The answer is yes. Ann should pretend that she likes the Matisse only slightly more than Ben likes the Matisse (he put 25 points on the item). This way Ann will get all of the Matisse initially, as she did before, but will appear that she is getting only a little more than one-fourth of the total value in her opinion, whereas Ben is getting three fourths in his opinion (since he put 75 points on the Picasso). Consequently, a big equitability adjustment will be required to transfer much of the value of the Picasso from Ben to Ann.

Even though the point distribution system is designed to keep the point allocation confidential, in that the parties assign their points independently and they are submitted at the same time, in the case of divorcing couples, the parties may have a very good idea of the preferences of the other party.<sup>240</sup> If the information is possessed by *both* sides, then the result of the game can be disastrous.<sup>241</sup> The result can be that neither party obtains what they truly desired making the usefulness of using the information counterproductive. They can end up hurting themselves as well as the other player.<sup>242</sup>

<sup>238</sup> Brams, *supra* note 2.

<sup>239</sup> *Ibid.* at 80-81.

<sup>240</sup> *Ibid.* at 79.

<sup>241</sup> *Ibid.* at 80.

<sup>242</sup> *Ibid.* at 82.

Given the potential for a lose-lose situation, it is more prudent to be sincere as the manipulation can easily backfire for the dishonest player.<sup>243</sup> Being honest provides a guarantee of obtaining at least 50% of the total value (in accordance with one's own evaluation) of the goods. Regardless of the strategy an opponent chooses, sincerity guarantees an envy free portion to the honest player.<sup>244</sup> With Adjusted Winner, truthfulness is key to obtaining a Nash Equilibrium.<sup>245</sup>

Use of the Adjusted Winner strategy to property division can also help deal with the problem of gender bias in domestic contracts because Adjusted Winner produces a property division based on the individuals' interests. Thus, Adjusted Winner will reduce power imbalances in divorce bargaining, increasing the possibility of obtaining a fair result.<sup>246</sup> Vengeance can also be diminished because Adjusted Winner forces a party to decide what is more important: receiving the good he or she actually desires, or depriving his or her spouse of what he or she desires. However, this does not preclude emotional decisions; if a player truly wants revenge more than possessing certain goods, choosing revenge would be a rational choice.<sup>247</sup> The Adjusted Winner method would best be employed in a situation where the parties are already prone to a civilized negotiation such as Collaborative Law. The method can be taught to the lawyers during the Collaborative Law training sessions and then imparted to clients during the negotiations. When potential clients are given their process options during an initial consultation, the attorney

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<sup>243</sup> *Ibid.* at 83.

<sup>244</sup> *Ibid.* at 83.

<sup>245</sup> Matz, *supra* note 49 at 1388. A Nash equilibrium is a combination of strategies, from which neither party has an incentive to deviate.

<sup>246</sup> *Ibid.* at 1382-1383.

<sup>247</sup> *Ibid.* at 1385.

being consulted may also decide to screen out certain clients who would seem to have difficulty with negotiating in a civilized context.

It will be a great relief for some, including this author, to know that there is no necessity to understand the mathematics used in Adjusted Winner, because cyber mediation websites and on-line assistance programs can do the math for you. There are a large number of existing support systems<sup>248</sup> that can help the parties, mediators, and even attorneys in using negotiation strategies.

Negotiation decision support systems are computer programs that assist in the implementation of negotiation strategies such as Adjusted Winner.<sup>249</sup> It is interesting to note that some of these programs<sup>250</sup> include child custody issues in the analysis and point allocation,<sup>251</sup> something that I believe should not be done under any circumstances. I argue that it is a conceptual mistake to combine children's needs and rights with property issues. The best interest analysis should continue despite the application of these algorithms for other issues.<sup>252</sup> To quantify preferences regarding the children removes the

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<sup>248</sup> Joseph W. Goodman, "The Pros and Cons of Online Dispute Resolution: An Assessment of Cyber-Mediation Websites" online: Duke Law and Technology Review <http://www.law.duke.edu/journals/dltr/articles/2003dltr0004.html> at 2.

<sup>249</sup> Emilia Bellucci, & John Zeleznikow, "Trade-off Manipulations in the Development of Negotiation Decision Support Systems" (2005) online: HICSS 2005: Big Island, Hawaii, USA <<http://www.informatik.uni-trier.de/~ley/db/conf/hicss/hicss2005-1.html#BellucciZ05>> at 1. Arno R. Lodder, & Ernest M. Thiessen, "The Role of Artificial Intelligence in Online Dispute Resolution" online: Proceedings of the UNECE Forum on ODR <<http://www.odr.info/unece2003>> at 7. The Family\_Winner algorithm is an adaptation of the Adjusted Winner algorithm. Family\_Winner was developed for family law practitioners in Australia, and uses a combination of Game Theory and heuristics to provide negotiation support to the parties.

<sup>250</sup> Other online support programs attempt to settle custody issues as well such as AdjustWinner and Family Negotiator.

<sup>251</sup> Bellucci, *supra* note 249 at 6.

<sup>252</sup> I further argue that the issues of spousal support and child support can best be handles through the application of the guidelines.

children's subjective rights and needs from the evaluation, something that seems primitive at best. Jeremy Matz agrees that it would be detrimental to parents and children to allow custody to be determined based solely on mathematical algorithms.<sup>253</sup> This is not to say that Game Theory lessons learned from the normative strategies cannot be applied to the analysis of the custody issues. The negotiation techniques of communication, cooperation, forgiveness and clarity can certainly be applied.<sup>254</sup>

Arguably negotiation programs should not be used to determine the quantum of spousal support outside of the Collaborative Law context. In the Collaborative Law process given that each party is duly represented and given that the principle is that both players and their attorneys will work as part of the same team in order to find an appropriate solution, the risk of unfair agreements arising from power imbalances is lessened. Fears of inappropriate tradeoffs are significantly reduced.

Cyber negotiation systems come in a variety of forms<sup>255</sup> and can be used as important tools in appropriate family law negotiations such as Collaborative Law. What is a marked benefit with all on-line support systems is that the parties do not have to ever face each other. This is extremely important when violence or intense acrimony has been a factor during the relationship. Furthermore, the parties do not even have to be in the same country in order to mediate.<sup>256</sup> Despite the fact that, as we have already seen, a party is less likely to use "nasty" strategies when he or she is face-to-face with the other

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<sup>253</sup> Matz, *supra* note 49 at 1376.

<sup>254</sup> Cantania, *supra* note 181.

<sup>255</sup> John Zeleznikow, "Split-up: A web-based legal decision support system that advises upon the distribution of marital property" online: BiblioJuridica <<http://www.bibliojuridica.org/libros/4/1738/7.pdf>> at 10.

<sup>256</sup> Zeleznikow, *supra* note 18 at 28.

party, sometimes there are more important factors to consider such as enabling the parties to negotiate at all.

As discovered in using iterated rounds of Prisoner's Dilemma, what is crucial to the development and the continuation of cooperation is that the players have a chance of meeting again. Axelrod made an interesting statement, noting that cooperation is more likely when "the shadow of the future is long."<sup>257</sup> In the case of family litigation, this can be satisfied in one of two ways. If the couple has children, there is a built-in assurance that the couple will meet again and will most likely have to communicate, cooperate and interact in the future as their children grow. In addition, in Collaborative Law, there is no set amount of sessions; therefore the parties do not know when the negotiations will be over. However, in mediation, it is sometimes harder to provide this "long shadow of the future." While it is true that mediation sessions can continue as long as necessary, in Quebec the government will only pay for six sessions for couples with children,<sup>258</sup> and so this can be perceived as a natural cut-off.

Furthermore, in Collaborative Law, the categories of different interests do not have to be dealt with in any order. The sequence is set by the parties. There is nothing to prevent the players from returning to previously discussed issues if necessary.<sup>259</sup> Given this, the parties do not know when an item is truly closed, making the temptation to defect less likely.

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<sup>257</sup> Barash, *supra* note 84 at 108.

<sup>258</sup> "Family Mediation" online: Justice Quebec <  
<http://www.justice.gouv.qc.ca/english/publications/generale/mediation-a.htm>>.

<sup>259</sup> Smith, *supra* note 138 at 47.

If the parties do not have children, and therefore no built-in continuity between the parties, it is important to assure that they complete the negotiations without defecting. Given this, the negotiators should borrow a lesson for Game Theory and make sure not to predetermine how long the process will take, making use of the lack of finite sessions to encourage continued cooperation.

In traditional negotiations, it is very easy for the parties to use the upcoming court date as a way of defecting. The court date becomes the looming artificial deadline. It is simple to hold one party hostage if he or she wants to avoid going to court. The other party may also wish to settle but is skilled at bluffing, and therefore can force the other party to abandon a position in favour of a settlement out of court. This can be contrasted with Collaborative Law where it is to everybody's benefit that the negotiation sessions not go on endlessly, as the discussions must progress and move forward. The attorneys are in charge of the process and can therefore ensure its progression without rigidly predetermining the schedule. This is an element that can easily be adapted and used in Collaborative Law provided the attorneys have some Game Theory awareness.<sup>260</sup>

A built-in advantage to using Game Theory in the Collaborative Law context is that the parties do not need to have any pre-existing knowledge of Game Theory. Collaborative Law operates in such a way that the attorneys who create the environment and control the process can easily impart the necessary information to the parties in the initial sessions when the process of Collaborative Law is explained or even during the

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<sup>260</sup> Game Theory can be taught during the Collaborative Law training sessions for lawyers.

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four-way settlement meetings. It would not be advisable to overwhelm the parties with the theory but rather to simply explain the lessons derived from Game Theory.

Another important element in Game Theory resides in the need for complete information. The more information the players have, the better the game is played. What a player knows or does not know will make a difference in logically analysing his or her possibilities.<sup>261</sup>

This need for information is an important concept in Game Theory as the best strategies in the game can be achieved by reaching a “Nash Equilibrium.” This equilibrium occurs when each player is pursuing his or her best possible strategy.<sup>262</sup> Once a Nash Equilibrium is reached, nobody has any incentive to change their strategy.

Knowing the elements of the game improves the way people play. There is a bilateral advantage to this game being played well by both parties. There is no benefit in keeping information from the other party. If you commence with the belief that Game Theory is an appropriate procedure for family law negotiations and you understand that a better overall agreement can be reached through efficient cooperation rather than imperfect information, it should be the goal for both players and, in the case of Collaborative Law, both attorneys as well, to share information completely and to be honest about their interests.

Practitioners of Collaborative Law are already keen on this proposition although the rationale may be based on ethical beliefs rather than improving mathematical

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<sup>261</sup> Ross, *supra* note 79 at 2-3.

<sup>262</sup> Baird, *supra* note 78 at 310.

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certainty. At any rate, full voluntary disclosure is a cornerstone of the collaborative process<sup>263</sup> and this cornerstone fits in easily with the premise of Game Theory.

In addition to early full disclosure, there are other ways the collaborative process intersects well with the precepts of Game Theory. In order to assess the player's next move properly, a history of the previous plays is needed. The most logical games are those in which agents have *perfect information*, meaning that at every point where an action must be taken he or she knows all the actions that have been taken up to that point.<sup>264</sup>

In Collaborative Law, the process is transparent. Unlike traditional negotiation or even mediation for that matter, there are no back-room discussions. In Collaborative Law, the parties and lawyers discuss everything in four-way meetings. In mediation, where the sessions are meant to be transparent, each party may have additional private meetings with their attorneys where strategies are discussed which may be in direct conflict with what has transpired in the mediation sessions. The private meetings between the attorney and client in the Collaborative process are meant to elucidate the parties' interests and to develop methods that are consistent with the goals of Collaborative Law. "If a client discloses relevant and material information to counsel but prohibits its disclosure to the spouse and the other lawyer, a collaborative lawyer is bound by the voluntary ethical undertakings of the collaborative process to refuse to go forward unless the information is disclosed. If the client refuses, the lawyer must withdraw, and/or

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<sup>263</sup> Shields, *supra* note 125 at 33; Tessler, *supra* note 132 (book) at 8.

<sup>264</sup> Ross, *supra* note 79 at 2.

terminate the collaborative process. But the lawyer- like all lawyers- remains bound by the attorney-client privilege and cannot disclose a client confidence under those circumstances."<sup>265</sup> Furthermore, once the mediation process is over, the attorneys for the parties will review any agreement reached before it is finalized. Even with the best of intentions, traditional adversarial techniques may completely undo the agreement.<sup>266</sup> After all, the attorneys are usually not present in mediation and, therefore, cannot attest to the intention of both parties while creating the agreement.

Collaborative lawyers must go through training before they can join the Collaborative Law Association<sup>267</sup> and therefore practise with other collaborative lawyers. It would be the perfect opportunity to incorporate Game Theory methodology into these training sessions so that the techniques and principles cannot only be discovered by collaborative attorneys but they can be used in collaborative sessions as well. Furthermore, as stated above, it may be important to include a description of the work done in the fields of mathematics and economics to help establish the value of Game Theory in an attempt to persuade sceptics to participate in the collaborative process which has the potential of producing more favourable results for all.

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<sup>265</sup> Tessler, *supra* note 132 (book) at 167.

<sup>266</sup> *Ibid* at 9.

<sup>267</sup> The associations go by different names in different jurisdictions. In order to be a member of the Quebec association, one must have a certain number of years experience practicing in family law and complete a five-day training session. Without this training you cannot practice Collaborative Law. You cannot sign the participation agreements and other Collaborative lawyers cannot enter into a Collaborative file with you. At best, without the training, you can only apply the collaborative techniques to traditional negotiations.

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### C. ADVANTAGES OF USING GAME THEORY

Why seek to develop a new method to deal with family law negotiations? The answer is simple. It can be determined that existing traditional approaches are not working given the damage that can be done to the relationships of the parties, the children of the parties, and the cost involved.<sup>268</sup> We need to create better agreements in order to satisfy the parties' interests, whatever they may be. We also need a high level of fairness so that the agreements continue to satisfy the parties after the stress of the process has dissipated.

We have seen the legal community strive to obtain some level of predictability. We have developed guidelines both for child support and spousal support with just this thought in mind. However, the desire for predictability does not stop there. There are many factors other than child and spousal support that are important to individuals embroiled in a separation.

Parties need to have some control over their present and future lives. With the application of Collaborative Law enhanced with Game Theory, the final source of authority is the parties themselves. They have the power to shape their agreement with the other party and, therefore, their future interactions; they are given back the power in a more protected environment than with mediation unless the mediator is particularly effective at redressing power imbalances.

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<sup>268</sup> Bryan, *supra* note 16 at 1153-1154.

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Obviously, given that every agreement will be different because each is based on subjective interests, it is the *process* which is predictable and stable.<sup>269</sup> Furthermore, given that the parties have agreed not to use court as an option, the creativity and problem-solving skills of all the participants are allowed to flourish.

The addition of Game Theory to the collaborative process only serves to further improve the stability and certainty of the negotiations in that the mathematical process of division and the certainty of the benefits of cooperation can be scientifically demonstrated. Another strength of Game Theory is that it allows for different interests to run alongside each other rather than in competition with each other. Given that the more traditional approach has historically favoured male-oriented interests in divorce or separation negotiations, other interests may not be fairly heard and appreciated. Traditional negotiations and even mediation leave each party ultimately to think only of themselves, potentially producing unfair agreements primarily because the couple did not work together to achieve their goals. In contrast, an approach premised on Game Theory would stress that both parties' interests are important to the outcome of the game, and must be recognized and respected.

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<sup>269</sup> Slovin, *supra* note 134 at 3.

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**Chapter 4****LIMITS OF USING GAME THEORY IN FAMILY LAW NEGOTIATIONS**

For the purpose of this paper, I have grouped negotiating styles into three broad categories: Traditional, Quasi-cooperative, and Cooperative. Within these three categories, we can find the three most predominant choices for dealing with family law negotiations: “courthouse step” negotiations, mediation, and Collaborative Law. I have already examined Collaborative Law and I have argued that it is highly compatible with Game Theory strategies especially considering that the two major lessons derived from Game Theory, being communication and cooperation, are also the cornerstones of the Collaborative Law process.<sup>270</sup> Traditional negotiations characterized by “courthouse step” settlements, and quasi-cooperative negotiations, that is, mediation, fare less well.

**A. TRADITIONAL NEGOTIATIONS**

The majority of family law cases settle, often on the day the court hearing is scheduled or the days leading up to that event. These settlements literally or figuratively take place on the courthouse steps where last minute jitters, or the pressure of a court attendance, play a strong role in a couple’s desire to settle. This settlement, however, can come with a very large emotional and financial price tag.<sup>271</sup> Usually, by the time the settlement takes place the procedures have already been advanced, positions have been entrenched, lawyers’ fees have been escalating, and the children may have become the hostages of their warring parents. In short, the damage may have already been done.<sup>272</sup>

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<sup>270</sup> Tessler, *supra* note 132 (book) at 8.

<sup>271</sup> Portnoy, *supra* note 143 at 2.

<sup>272</sup> Tessler, *supra* note 132 (book) at 1.

Whereas many agreements will undoubtedly be useful and appropriate for the parties, given the damage that may take place with such traditional negotiations, it is not an ideal form of dispute resolution and may not be adaptable to a Game Theory approach. As a result of the damage already done, the utility payoff, which for many can include family relationships, positive future interactions, and other non-material goals, will already be impossible to retrieve.

The common method for bargaining in this type of pressured negotiation is also not conducive to the application of a Game Theory strategy other than sum-zero approaches, which as we have already seen, are not optimal for both parties and will inevitably lead to undesirable settlements that do not truly reflect the parties' interests. We can easily imagine the *Miglin*-type scenario of one spouse attempting to reopen a domestic agreement that is not per se "unconscionable," arising repeatedly, with no hope of court relief.

Because the focus is on "winning" in traditional negotiations, – no one generally sets out to be the "loser" – a large part of the negotiations may not even represent a party's genuine position. In keeping with the *distributive negotiation* model,<sup>273</sup> clients may be counselled to assume a greater or more demanding starting position and then make concessions that demonstrate the appearance of cooperation but which in reality are part of a strategy to obtain their real position.<sup>274</sup> This has eloquently been referred to as follows: "They prepare to engage in a kind of *negotiation dance* – two steps forwards, one step back – as they make their way around the bargaining floor."<sup>275</sup>

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<sup>273</sup> This model represents a distribution of goods. If one party receives something it is a loss for the other party.

<sup>274</sup> Smith, *supra* note 138 at 85.

<sup>275</sup> *Ibid.*

Hard bargaining and soft bargaining are the two negotiating styles of traditional negotiations. A review of the characteristics of each of these styles easily demonstrates how the techniques are incompatible with cooperation and non-sum zero techniques. Typically hard bargainers will not disclose information while demanding information from the other side. They work from the sum zero approach; a gain for you is a loss for me. Meaningful compromise is not part of the game plan, and aggression and hostility are often mistaken for strength. Ultimately, hard bargainers care only about winning; relationships and their preservation are not considerations. The methods used are not transparent, often leaving the other player guessing and confused.

Soft bargainers, in contrast, give information freely but do not make any demands for disclosure themselves. They will compromise and accommodate easily. The relationships between the parties or with their children are more important than a substantive “win.” Soft bargainers will not resort to manipulation and will bear all.<sup>276</sup>

Clearly, this type of negotiation where soft bargainers are pitted against hard bargainers is ineffectual for the soft bargainers. If we seek cooperation and an appropriate settlement on *both* sides, this is clearly not the optimal approach. It is the antithesis of a win/win approach and the latter should be coveted. The damage that can be done with this form of negotiation, not only to future relationships, but to the substantive agreement that the parties will have to deal with, is considerable.

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<sup>276</sup> *Ibid.* at Communications and negotiation skills at 1.

If we are faced on the other hand with two hard bargainers, we will be deadlocked. Positional bargaining is the strategy used and will result in neither party being happy and most likely the process will fail and an agreement will not be reached.

This is further explained as follows:

Positional bargaining is a process in which each party “takes a position, argues for it, and makes concessions to reach a compromise. The inherent weakness of positional bargaining is that the negotiators lock themselves into positions which impede progress toward a solution. Positional bargaining is inefficient. The parties begin with extreme positions and make small concessions. Significant time and effort is consumed in the process. Finally, positional bargaining is potentially destructive of relationships.”<sup>277</sup>

Furthermore, positional bargainers do not see the potential for interdependent interests with their spouses as they do not see past their own wants or desires. The other party’s interests are irrelevant. This approach to bargaining often results in compromise settlements that are not the best solution for anyone because compromise often means that neither party gets what he or she truly needs or wants. As a result both parties might walk away from the negotiation unhappy or dissatisfied.<sup>278</sup>

Another strategy used in traditional negotiations, the competitive approach, is very similar to the traditional hard bargainers’ techniques. The goal of such an approach is to manipulate the other party into accepting your demands. This approach is even more devious because there can be a false appearance of conciliation. The approach is characterised by high opening demands, threats, tension and pressure, manipulation and

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<sup>277</sup> Shields, *supra* note 125 at 23. (Taken from Roger Fisher, William Ury & Bruce Patton, Getting to Yes: Negotiating Agreement Without Giving In, 2d ed. (New York: Penguin Books, 1991).

<sup>278</sup> Ruth Phegan, “The Family Mediation System: An Art of Distributions” (1995) 40 McGill L.J. 365 at 402.

exaggeration of the facts, positions, volunteering only information that is beneficial, conceding only that which is undeniable, attempting to achieve victory, viewing outcomes as win/lose.<sup>279</sup>

Again, at the root of the problem is that the competitive approach is based upon the belief that a win for the other party is a personal loss. The party believes in a lateral approach to the negotiations, and given that he or she thinks that the process is simply a distribution of finite elements, one party's gain is the other party's loss.<sup>280</sup>

Interests which are clearly intangible, such as the preservation of family, relationships, good co-parenting, and the non-material needs of the children, are not always properly addressed because generally the stronger party will only protect his or her own interests and historically the stronger party has been the male spouse. In the traditional (strict legal entitlements) approach one party "wins" on a material front, one party "loses" on a material front, and both parties have failed to escape the damage the divorce process can bring.<sup>281</sup> Game Theory is not readily applicable to this approach.

## B. QUASI-COOPERATIVE NEGOTIATIONS/ MEDIATION

When interest-based negotiations were introduced to the family scene approximately thirty years ago in the form of mediation, it was thought to be an answer to the typically unproductive approach used in traditional litigation-based negotiations.<sup>282</sup>

Mediation recognised the capacity of the parties to develop their own agreements and it

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<sup>279</sup> Rose, *supra* note 146 at Chapter 2 at 3.

<sup>280</sup> Tessler, *supra* note 132 (book) at xxi.

<sup>281</sup> *Ibid.* at 1.

<sup>282</sup> *Ibid.* at 3.

continues to be a useful process option today.<sup>283</sup> However, it has been discovered that mediation cannot be used by everyone. The earlier hopes that mediation was going to be a saving grace in family law negotiations were thwarted when it became obvious that there are situations where mediation proved ineffective or simply unadvisable.<sup>284</sup> Such situations can include those characterized by imbalances in power, emotional attitudes, and the instability of the parties, as well as bad-faith orientations to the mediation. All of these factors can render mediation difficult or can compromise the fairness and stability of the settled outcome.<sup>285</sup>

Mediation is still of course a viable option for many couples and has a good success rate; however, when the parties have a serious imbalance of power, the mediation process is not necessarily the appropriate forum and can fail to obtain optimal results for both parties. The imbalance of power that exists between hard and soft bargainers still exists in mediation as there is nothing to address the imbalance. The mediator is neutral, so although he or she will not support the hard bargainers, he or she also will not assist the soft bargainers. The results may involve fewer laterally-based options but will still not be balanced if the parties are not equal bargainers.<sup>286</sup>

Integrative bargaining, however, can work well in mediation. “Integrative” bargaining refers to a model of negotiation which helps obtain objectives that are not in direct conflict with those of the other party and these objectives can therefore be somewhat integrated into each party’s position.<sup>287</sup>

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<sup>283</sup> Shields, *supra* note 125 at xiii.

<sup>284</sup> Tessler, *supra* note 132 (book) at 3.

<sup>285</sup> *Ibid.* at 3, footnote 8

<sup>286</sup> *Ibid.* at 3.

<sup>287</sup> Shields, *supra* note 125 at 5.

The mediation process can be conducive to integrative bargaining as the environment established in mediation can at least create the illusion of cooperation. Given that integrative bargaining does not require “sacrifice”, it is easier to convey the positive gain for both parties in using integrative bargaining in the mediation process.<sup>288</sup> If solutions to common problems exist which benefit both parties, integrative bargaining can be used. The integrative bargaining model does not work from the same premise as distributive bargaining. It is not a zero-sum game.<sup>289</sup>

This integrative bargaining model would not even be possible to a large degree in traditional negotiations since hard bargainers do not allow for a deviation from the game plan. If a need is not also *their* need, it will not be appropriately addressed or alternatively be seen as a weakness if they allow it to be addressed.

The picture of an effective mediator developed by Linda Girdner was re-presented by Ruth Phegan.<sup>290</sup> The Mediator who practises a balanced and empowering form of mediation will put emphasis on rights and needs, the external and internal criteria of fairness.<sup>291</sup> The mediator will also keep the needs of the children at the forefront of custody issues.<sup>292</sup>

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<sup>288</sup> *Ibid.*

<sup>289</sup> *Ibid.* at 5-6.

<sup>290</sup> Phegan, *supra* note 278 at 365.

<sup>291</sup> *Ibid.*

<sup>292</sup> *Ibid.* at 369.

It would seem to me that this discretion is equally suited to a Collaborative Law attorney and is certainly consistent with the application of Game Theory. If the parties are truly willing to cooperate, certainly mediation can be an appropriate forum. Missing, however, is the degree of disclosure needed to facilitate proper understanding of interests over rights, something that may not take place in mediation given the neutrality of the mediator. Full disclosure is vital to the Game Theory process as the higher the level of the information provided, the more accurate the process will be. Mediation does not guarantee an appropriate level of disclosure.

Another major concern with the application of Game Theory is that as A. Mitchell Polinsky observes, economists rely heavily on assumptions.<sup>293</sup> The next section will review these assumptions.

### C. ASSUMPTION OF RATIONAL BEHAVIOUR

As we have seen, Game Theory is a mathematically-based model used to analyze human behaviour and therefore relies on some basic assumptions for the theory to produce optimal results. One very important element is that the theory assumes that the players are rational and are therefore able to play as well as anyone else.<sup>294</sup> Rational behaviour, however, is not always present in real-life situations. There is no doubt that most players are capable of rational behaviour, but whether it is always present is another issue.

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<sup>293</sup> A. Mitchell Polinsky, *An Introduction to Law and Economics*, 3d ed. (New York: Aspen Publishers, 2003) at 2.

<sup>294</sup> Manheim, *supra* note 85.

Two of the key assumptions underlying Game Theory, are first, that each player is presumed to have perfect knowledge of the game, the opponents and the payoffs; and second, that each player will play rationally, creates significant obstacles to the actual application of the theory to family law negotiations. However, with regard to the availability of perfect information, we have seen that the assumption of full disclosure and the transparency of the meetings in Collaborative Law can accommodate this need for perfect information. Therefore, at least in the construct of Collaborative Law, this element of the theory is workable.

The assumption of rationality is most troubling. In Game Theory, one of the basic premises is that the parties will behave rationally. For the purposes of Game Theory, rational behaviour is defined as the making of decisions that optimize individual gains.<sup>295</sup> While negotiation assumes rational actors, people in divorce do not always make decisions under the standard rational choice model. Divorce is an emotional time and decisions will likely be affected accordingly.<sup>296</sup> Parties can, especially in a divorce situation, make decisions based on spite instead of their own economic well-being.<sup>297</sup> Rational behaviour may be more difficult to achieve especially in a heated family-law situation. The assumption that all parties are rational and intelligent may not be accurate in real-life situations.<sup>298</sup>

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<sup>295</sup> *Ibid.*

<sup>296</sup> Matz, *supra* note 49 at 1353; Herman, Gregg. "Cooperative Divorce" (2005) 19:3 Am. J. Fam. L. 161 (Proquest) at 2, Mary E. O'Connell, Book review of Collaborative Law: Achieving Effective Resolution in Divorce without Litigation by Pauline H. Tesler (2002) 40:3 Fam. Ct. Rev. 403 at 403.

<sup>297</sup> Amy Farmer & Jill Tiefenthaler, "Conflict in Divorce Disputes: The Determinants of Pretrial Settlement" (2001) 21 Int'l Rev. L. & Econ. 157 at 164.

<sup>298</sup> Sylvie Nadeau, "Co-operation in Health and Safety: A Game Theory Analysis" (2003) 1 Pierce L. Rev. 219 at 223.

In family law scenarios, individuals are commonly grieving, angry, or in shock because of the demise of their relationship and of the future they had foreseen. Without much preparation, they are thrown into a situation where they have to work out a solution to a new problem that they might have hardly had enough time to conceive of, let alone accept.

In such circumstances, decisions can be made that may be regretted in the future. Sometimes the decision is simply a case of *unknowingly* cutting off your nose to spite your face. However, it can also refer to *consciously* taking actions that outsiders perceive as irrational behaviour while in reality the behaviour is perfectly consistent with the goal and payoff desired. It is very possible that the intended goal of party A is to make party B miserable even if this means that Party A will also be miserable. Given that individuals determine the utility of each goal, this could be the payoff most important to a party at that point in time, and thus the decision, while ultimately destructive, would still be within the rationale of the game.

This definitely presents a problem and, unfortunately, one that cannot be solved without withdrawing from the process temporarily or even permanently. Luckily, the parties who become involved in Collaborative Law are pre-screened by the Collaborative lawyer who recommends the process to the party. This means that they are made aware of the premise behind Collaborative Law and are informed of the responsibility to act fairly and to consider the other party's point of view. It is quite possible that any non-collaborative behaviour will be caught early and the attorney, if not the client, can

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determine that Collaborative Law, and therefore the application of Game Theory elements, cannot be used.<sup>299</sup> The party can wait until some of the anger and grief has subsided, or follow-up on another process option available to them. This assumption of rational behaviour can therefore be unpredictably troublesome in a divorce or separation context when emotions are running very high. That Game Theory assumes too much rationality has been a concern for some time.<sup>300</sup> While this problem cannot entirely be resolved with the collaborative process, irrational behaviour will at least not be fuelled by the process. This enlarges the potential for success even with highly emotional clients as the process will not inflame the tension but can help to decrease it.

#### D. USE OF THE MATRIX

Another serious complication with the complete application of Game Theory to family law discussions comes with the actual application of the matrix. Whereas we have already determined that the mathematical elements of the theory can be kept to a simple, widely applicable level, the actual application of the matrix, the elements that will be visually charted, still presents difficulties.

The problem arises with the conception and application of the matrix which is necessary to calculate the payoff and the variety of options different strategies can yield. Certainly, when properly administered, this aspect of Game Theory is most attractive to someone who is looking for a mathematical analysis that yields results to a problem that

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<sup>299</sup> Kurodason, *supra* note 138 at 410-411.

<sup>300</sup> Avery Katz, "The Strategic Structure of Offer and Acceptance: Game Theory and the Law of Contract Formation" (1990-1991) 89 Mich. L. Rev. 215 at 248.

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may seem anything but rational and structured. Unfortunately, without adequate training, it may prove difficult to set out the matrix as a visual guide.<sup>301</sup>

This does not mean that Game Theory cannot be used. On the contrary, the strategies learned and the principles discovered in Game Theory can definitely be applied in an appropriate negotiation style such as Collaborative Law. However, what it does mean is that it may be too difficult or time-consuming to lay out the matrix. In order to use Game Theory, the matrix is usually conceptualized first. The matrix will set out the strategies for each play and the developed payoffs; the parties can visually see how each move made can yield a different result. Given that the payoff is quantified, you can keep track of the utility points earned with each move.

In family law, unlike in the Prisoner's Dilemma, the moves can be endless. There are numerous ways of treating each problem once you break away from the traditional approach. The complexity increases, not because there is no solution, but because there are many more solutions than a matrix can accommodate. The options are not limited. In order to reflect accurately the multitude of scenarios, the matrix can become unwieldy and complicated. The existence of the matrix in the family context may limit creativity instead of promoting it.

Perhaps the solution is to move away from the matrix and use an equally visual, yet simpler device: tally sheets such as is used in *Adjusted Winner*.<sup>302</sup> Creative solutions

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<sup>301</sup> Williams, *supra* note 95 at 21.

<sup>302</sup> See page 70 (Table 1.0) of this paper.

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can still be the priority without the parties and their attorneys wanting to restrict the number of plays simply because a matrix is too difficult to apply.

The concept of using a different way to graph, or keep track of the score, is not unique. In the study of Game Theory different models have been created and used depending on the optimal way to demonstrate the results or track the findings. Why not make the model as simple as possible, especially given the general lack of mathematical background for the players and the attorneys? With this in mind, it may be more beneficial simply to add up the utility points gained from round to round or in the case of family law, issue to issue.

There are other critiques that may be applied to Game Theory and Collaborative Law with regard to the protection of a ‘weaker’ party. This potential problem will be addressed in the following section.

#### **E. THEORIES OF JUSTICE?**

In Collaborative Law, all issues of importance to either party are evaluated.<sup>303</sup> This is true as well of Game Theory. It is the players, and the players alone, who determine what they are playing for, and what importance each element holds for them. Does this approach constitute the foundation for a new theory of justice? Collaborative Law and Game Theory beliefs appear to be consistent with *Liberal Feminism*. Liberal

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<sup>303</sup> Tessler, *supra* note 132 (article) at 330.

feminism is rooted in the tenets that women, as well as men, are capable and autonomous human beings with equal but different perspectives<sup>304</sup>. Liberal Feminism builds on the principles of rationality and individual choice and propounds the belief that women and men are equally rational and therefore should have the same right to make rational, self-interested choices.<sup>305</sup> This is precisely the premise at work in Collaborative Law and Game Theory. All parties, male and female, should be allowed and encouraged to make self-interested decisions based on individual choices. As with Liberal Feminism, Collaborative Law and Game Theory acknowledge that traditional negotiations can be fraught with unequal bargaining power<sup>306</sup> but that the solution is to allow for the parties' interests to be expressed equally in order to allow both parties a powerful voice.

Some authors, however, would claim that affording women equal opportunity to exercise their own rational, self-interested choices only traps a vulnerable woman in that they are put in a situation where the male-centered interests will prevail, leaving women to be taken advantage of financially. It is further argued by some that the process of Collaborative Law provides no protection for a weaker party since it encourages each party to make their own choices and decide their own interests. It has been argued that the proper process would be to create an abuse-free environment, ensure that the vulnerable will be seen as vulnerable, and therefore not falsely given traits that they do not have.<sup>307</sup>

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<sup>304</sup> Joyce E. McConnell, "Relational and Liberal Feminism: The 'Ethic of Care,' Fetal Personhood and Autonomy" (1996) 99 W. Va. L. Rev. 291 at 300.

<sup>305</sup> Patricia A. Cain, "Feminism and the Limits of Equality" in Weisberg D. Kelly, ed., Feminist Legal Theory: Foundations (Philadelphia: Temple University Press, 1993) at 237-238.

<sup>306</sup> Darren Bush, "Caught between Scylla and Charybdis: Law & Economics as a Useful Tool for Feminist Legal Theorists" (1998-1999) 7 Am. U. J. Gender Soc. Pol'y & L. 395 at 403.

<sup>307</sup> Murphy, *supra* note 163 at 469.

All Feminist legal theories, regardless of their school of thought, are premised on the belief that society is devised and dominated by men.<sup>308</sup> With this in mind, it is easy to presume that, as with any other negotiation model, the Collaborative Law model can open the door to abusive behaviour, in that, an approach that favours male interests will prevail and female participants will therefore tend to be disadvantaged in the process. In Collaborative Law the legal entitlements that can protect the parties can be ignored in favour of any other agreement the parties craft. If the Collaborative process is also considered male-oriented, then it is easy to see the potential for abuse; certain trade-offs women make in negotiations would be viewed as inequitable and subjecting them to manipulation given their historical weakness vis à vis their male partners.

In keeping with this belief, Professor Ronalda Murphy has raised important concerns about Collaborative Law. She notes for instance the potential for a female party to give away financial interests out of concern for custody. Professor Murphy's concerns can equally apply to Game Theory given the similarities in operating beliefs with Collaborative Law such as the focus on individual *interests*. In speaking about the parties' ability to create any type of agreement they wish in Collaborative Law, she states the following:

[F]or those who feel that the current state of family law represents the *minimum conditions* for just outcomes, to the extent that CFL encourages and approves of outcomes that may well be less than that, there is a significant basis for concern. If you are of the view that spousal support law is still unable to deliver justice for women, a process that supports agreements in which it is traded away for custody is a problem, not a solution.<sup>309</sup>

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<sup>308</sup> Kelly D. Weisberg, ed. *Feminist legal theory: foundations* (Philadelphia: Temple University Press, 1993) at xvii.

<sup>309</sup> Murphy, *supra* note 163 at 466.

Certainly, if we perceive this freedom to contract as abuse then there should be a system in place that will help shield the weaker party from giving away all of her rights in order, for instance, to maintain custody of her children. On the other hand, what if this is not abuse at all? What if the mother understands that she is giving up financial options in order to keep her children, but, in Game Theory terms, her utility quantification for this issue is simply much larger than the one representing her financial security? Perhaps this is as valid as the husband determining that finances are the most important thing to him.

Of course there is the serious concern that the children of the parties will have to share in a decision that potentially leaves them in poverty. This, in Canada at any rate, is not necessarily the case as “the courts have long been prepared to take action to protect the interests of children and prevent these interests from being bargained away by their parents.”<sup>310</sup> Whether this translates to a court going beyond the child support order to look at a spousal support order or the property division in determining the indirect rights of children is not certain, but the law currently existing in Canada at least ensures that child support is of public order and must be followed in accordance with the legislated regulations.<sup>311</sup> There is therefore some protection for children while leaving the door open for other criteria to be considered. If one is not thinking relationally, this does not bring up another gender or equality problem as the decision is being made in relation to the minor child and his rights, which are distinct from his parents’ rights.

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<sup>310</sup> Bala, *supra* note 17 at 43.

<sup>311</sup> Regulation Respecting the Determination of Child Support Payments, R.R.Q., c.C-25 r.1.2.

In order to further protect children involved in a parental dispute, custody should never be evaluated in a mixed lot along with financial elements. Rather it should be dealt with distinctly to avoid the kind of problem where a parent requests custody only to scare the other parent into relenting on financial issues.<sup>312</sup> Custody should be decided on the basis of the best interests of the child and all other factors considered must focus on the best interests test. There will be less room for manipulating the situation and holding out custody as a bargaining chip in order to be compensated financially if the focus remains on the child and financial elements are not dealt with in the same context or process as custody and access.

Once custody and access are successfully removed from the negotiation table in order to properly deal with the remaining issues, there still leaves the debate pertaining to the manipulation of women in the negotiating process given their historical weakness in disputes with male spouses. In particular, the question is whether this inequity in bargaining persists in a Collaborative Law process. It would appear that the root of the debate stems from looking at the equation only from a financial point of view when attempting to determine whether the system is abusive. Why, though, do we consider finances to have such a high utility value? Why do we look at equality purely from a financial perspective? Game theory is relevant to legislation affecting equality by helping us to realize that there are many versions of equality.<sup>313</sup>

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<sup>312</sup> Crump, *supra* note 104 at 344.

<sup>313</sup> *Ibid.* at 403.

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We have seen with the study of Game Theory in this paper that if we let the theory take its course, the end result will be optimal for both parties because it is the parties themselves who are determining what is important to them. If we create a system where individuals are allowed to fight for what is truly important to each,<sup>314</sup> then we are creating a framework that *cannot* be dominated by men. Acknowledging that men and women are equal yet have different equally valid needs would be the core of the new framework.

Game Theory, when paired with Collaborative Law, may at first glance seem to allow for the potential of abuse. However, it may in reality simply be reflecting a different point of view, perhaps an even more empowering worldview.

When we value “objectivity” or a “right” answer, or a single winner, are we valuing male goals of victory, exclusion, clarity and predictability? What would our legal system look like if women had not been excluded from participating in its creation? What values would women express in creating the laws and institutions of a legal system? (...) How might the different male and female voices join together to create an integrated legal system?<sup>315</sup>

Perhaps what we would find is a Game Theory approach to legal matters wherein both men and women have a harmonious voice that is not in competition with the other, or dismissed because it is different.

Carol Gilligan, for example, argues that women speak in a different voice because they have had different life experiences than men. Gilligan claims that the female voice is

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<sup>314</sup> Robin West, “Taking Preferences Seriously” (1990) 64 Tul. L. Rev. 659 at 667.

<sup>315</sup> Davis, *supra* note 33 at 147.

concerned with caring and relationships and that this different voice and moral vision is a valuable difference.<sup>316</sup> If this is correct, and I believe that it is, why should the evaluation is based on a *financial* concept of equality? Perhaps it is simply time to stop considering the patriarchal belief that power lies with money. Maybe power lies with preserving relationships, and with fostering children.<sup>317</sup> To begin, the term equality is confusing because there is no “single equality.” There is in fact an “indefinite range” of understandings of equality.<sup>318</sup> In other words, equality is a subjective term and is dependant on the context. When we look at equality for women we do not necessarily have to look at redefining equality<sup>319</sup> but rather by accepting that equality has many permutations. The importance of the concept of equality can also be challenged depending on the circumstances of the debate. For instance, one of the key paradigm shifts in Collaborative Law lies in the belief that justice, like equality, has a many different meanings. In Collaborative Law, if the emphasis for a party is on relationships and the need to preserve them, this will be acknowledged. Valuing this need is a new development in justice theory.<sup>320</sup>

Game theory can also be used to demonstrate that equality is not the only value worth privileging, and sometimes it is justified to sacrifice equality to preserve freedom or autonomy.<sup>321</sup> Perhaps, however, we don't have to get into this debate at all. This may be the power of a mathematical analysis; it is gender neutral as is the application process.

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<sup>316</sup> Carol Gilligan, *A Different Voice: Psychological Theory and Women's Development* (Cambridge: Harvard University Press, 1982).

<sup>317</sup> Robin West, “Jurisprudence and Gender” (1988) 55 U. Chi. L. Rev. 1.

<sup>318</sup> Crump, *supra* note 104 at 334.

<sup>319</sup> Martha Minow, “Justice Engendered” (1987) 101 Harv. L. Rev. 10.

<sup>320</sup> Murphy, *supra* note 163 at 467.

<sup>321</sup> Crump, *supra* note 104 at 403.

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After all, impartial procedures are essential to developing a fair settlement.<sup>322</sup> But then, how do we measure fairness? Theories such as Adjusted Winner suggest that fairness is an individual belief; therefore, it is purely subjective.

If this is correct, then Game Theory principles in general promote fairness in negotiations, as they are always premised on subjective quantification of the items in dispute. We do not have to consider who has the right beliefs; we simply have to do what is right for each individual player. We should acknowledge that valuing intangible items, such as relationships, is as worthy as valuing tangible items such as houses or other property. Achieving your goal, even if it is not money-centric does not automatically amount to abuse and is not necessarily a violation of justice; furthermore, we should acknowledge that such beliefs can be the premise of a valid theory of justice given that “fairness, like beauty, lies in the eye of the beholder.”<sup>323</sup>

Game Theory alone, however, while it may meet the criteria of individual justice, may not necessarily meet a broader requirement of societal justice. We still have to consider whether it is *right*, in the ideal sense, to allow financial support to be bargained away for items of a perceived greater, although intangible, value.

Gender inequality can affect the appropriateness of an agreement, and we have seen that the effect of insufficient financial provisions for children can be devastating and

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<sup>322</sup> Brams, *supra* note 2 at 16.

<sup>323</sup> Rebecca Bailey-Harris, “Fairness in Financial Settlements on Divorce” (2001) 117 L.Q.R. 199 at 199, citing Lord Nicholls of Birkenhead.

can have long-term psychological, educational, and health consequences.<sup>324</sup> What, however, are the effects on children of a protracted, high-conflict divorce situation? It would appear that the effects may be just as great.<sup>325</sup> A concern that has been raised with Collaborative Law is that there is no protection for a spouse who decides to bargain away financial stability for other values of importance, such as not embroiling the children in an acrimonious separation. Given the impact that high-conflict spousal contests might have on children, there is a risk that a parent will abandon claims with the sole objective of protecting her children from the bitterness of family court disputes. Negotiation might occur only to avoid judicial proceedings. In this connection, it is critical to understand why the motivation to proceed outside of traditional litigation will often be intense, in view of the noted potential effects on children.

Judith Wallerstein participated in a 25-year longitudinal study of the responses of children to separation and divorce.<sup>326</sup> She found that half the children in the study were involved as teenagers in serious drug and alcohol abuse. Over half ended up with a more diminished education than their parents. In adulthood, they also feared for their own relationships because of their parents' failed relationship.<sup>327</sup> Other studies have found that even when children of divorced families do not experience these problems they still tend to experience lower levels of well-being. The authors of these studies exposed possible explanations for this and found that one possibility was the declining standard of living in

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<sup>324</sup>Bryan, *supra* note 16 at 1158-1159.

<sup>325</sup>Glen R. Gilmour, "High-conflict Separation and Divorce: Options for Consideration" online: Department of Justice Canada <<http://canada.justice.gc.ca/en/ps/pad/reports/2004-FCY-1/index.html>>, Ron Stewart, "The Early Identification and Streaming of Cases of High Conflict Separation and Divorce: A Review" online: Department of Justice Canada <<http://canada.justice.gc.ca/en/ps/pad/reports/2001-fcy-7/index.html>>.

<sup>326</sup>Judith Wallerstein, Julia Lewis & Sandra Blakeslee, The Unexpected Legacy of Divorce: A 25-year Landmark Study (New York: Hyperion, 2000).

<sup>327</sup>*Ibid.* (Gilmour) at Chapter 2.

female-headed single parent families, while another was the conflict between parents before and during separation.<sup>328</sup> Other studies have found that when compared with other family stresses, parental conflict appeared to have the most negative effect on children.<sup>329</sup>

A number of clinical and empirical studies have gone so far as to conclude that the “most toxic factors contributing to the immediate and long-term negative outcomes for children are the ongoing conflicts between parents before and after divorce.”<sup>330</sup> The results for children include high levels of aggressive behavior, anti-social behavior, conduct disorders, and anxiety.<sup>331</sup>

Clearly, reducing the conflict must be at least as important as ensuring financial security when negotiating a separation agreement from the point of view of the well-being of the children. Interestingly, attorneys have often been blamed, and rightfully so, for promoting high conflict situations in litigated proceedings.<sup>332</sup> In Collaborative Law, the lawyers promote settlement, not litigation, and the process itself is designed to be non-confrontational, thereby reducing stress. Furthermore, both parties are heard in Collaborative Law and therefore are less likely to feel betrayed by the process. In Game Theory, both parties’ interests are equally important. Both parties can walk away from the table feeling that they are satisfied with the outcome, thereby reducing hostility between them. Finally, the positive communication skills learned in the collaborative process can later be applied to the way the parties communicate with each other in the future.

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<sup>328</sup> *Ibid.* This article reviews the findings of several different studies.

<sup>329</sup> Stewart, *supra* note 325.

<sup>330</sup> *Ibid.*

<sup>331</sup> Gilmour, *supra* note 325 at Chapter 4.

<sup>332</sup> Stewart, *supra* note 325; See also Douglas H. Yarn, “The Attorney as Duelist’s Friend: Lessons from the Code Duello” (2000) 51 Case W. Res. 69.

Arguably, both the financial needs of the parties and children as well as the need to reduce the situational conflict and aggression can be dealt with in the Collaborative Law process. Essentially, Game Theory can provide the techniques, while Collaborative Law can provide the protective process. Once again, in Collaborative Law, the parties have agreed to the principle of a win-win scenario for both the parties and their children. This, along with the entire paradigm shift from traditional negotiations, should translate to less abuse or coercion. As a precaution, while each party is individually represented, the attorneys are also committed to the process and its beliefs.

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**CONCLUSION**

Advances in non-legal fields such as economics and Game Theory have provided the legal community with new tools for the study of law.<sup>333</sup> Game theory, in particular, is being used in many areas of law including tort law, anti-trust law and criminal law, and has now twice garnered a Nobel prize. In 1994, John Harsanyi, John Nash and Reinhard Selten won this top honor and in 2005, Robert Aumann and Thomas Schelling were awarded the prize. This growing popularity and exposure for the field can make the theory the new and hip approach to be used in a variety of fields. The truth, however, is that it is not new and whether it is “hip” or not is debatable and irrelevant, but it generally does work and the exposure from the coveted Nobel wins may bring Game Theory to mind more readily when examining new methods of addressing legal problems. Game Theory is a common sense theory that has many applications, including within the realm of family law.

In addition, one of the major developments in legal scholarship over the last decade has been a paradigm shift from formal legal rules toward informal social norms where the parties in dispute have more control over how conflict will be resolved.<sup>334</sup> Game Theory fits in well with this shift especially in family law where traditional methods have often failed to meet the needs and substantive interests of the parties. Game theory has an added affinity with Collaborative Family Law, a non-traditional method of negotiation, because the lessons derived from Game Theory are already present, or can be easily implemented, in Collaborative Law.

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<sup>333</sup> Posner, *supra* note 4 at 3.

<sup>334</sup> Mahoney, *supra* note 181 at 1283.

In family law, a large number of cases settle without court intervention in one of three ways. The cases can settle through traditional means (such as “courthouse step” negotiation), quasi-cooperative means (such as mediation), and cooperative methods including Collaborative Law. The need for the application of a method such as Game Theory stems from the fact that despite the large number of cases that are negotiated, the settlements may not be appropriate for all parties.

One major concern with inappropriate agreements stems from the problem of a lack of appropriate and equal attention to both parties’ needs and interests. The incorporation of Game Theory in family law negotiations can help relieve such inadequacies as both parties’ interests must be evaluated and given effect in order to apply the theory successfully.

We have seen through this paper that Game Theory is readily applicable to financial issues such as division of property. What has not been sufficiently analyzed, however, is the use of Game Theory in deciding issues of custody and child support. The child-related issues are more difficult to accord with the theory of games given a difference in underlying beliefs. For instance, Game Theory works primarily from the stated needs and interests of the parties. This is not necessarily the same as examining the interests of the children of the parties. Short of directly involving the children in the process, which would not be acceptable certainly for young children, the proper analysis of custody and access cannot be accomplished, making the remainder of the process inadequate. In addition, the strict application of mathematics can work to obtain a starting

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point for child support, as has been seen with the child support guidelines, but we would be missing out on potential creative methods of contracting around the guidelines if the analysis stopped at the application of a formula without examining the circumstances of every given case.<sup>335</sup>

What can be used, however, and what must be remembered in future research on this subject, is that Game Theory represents not only simple mathematics (as seen in the application of the Matrix and of Adjusted Winner strategy), but it also uses logic, a more sophisticated form of mathematics and general reasoning. The lessons learned from Game Theory, such as the validity of communication and cooperation in achieving all-around success in negotiations, are at the core of obtaining and enforcing a valid custody arrangement as well as exploring innovative deviations from the guidelines in pursuit of a system that functions better for the financial needs of the children in question. Future research may therefore effectively consider the import of Game Theory principles into the realm of negotiated arrangements affecting children.

One of the most interesting elements of Game Theory, as learned from the Tit for Tat strategy, is the ability to resist manipulation by retaliating and then forgiving. There is great strength to be discovered in this lesson and it should be further explored in the delicate “dance” of family law negotiations.

Finally, the use of Game Theory is still very young in the area of family law as is the full development of Collaborative Law. From the analysis offered in this paper the

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<sup>335</sup> Thompson, *supra* note 9 at 1 and 50.

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author strongly suggests that the two should team up to provide innovative options to keep families away, whenever possible, from detrimental litigated proceedings, and that academic research should continue in this field and in other alternative dispute resolution forums.

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