

Applying AHP in Conflict Resolution

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The current failure to resolve conflicts worldwide highlights the need for a different approach to conflict resolution. A new International Center for Conflict Resolution (IC4CR), to be housed in the Joseph M. Katz Graduate School of Business, was funded by the University of Pittsburgh Chancellor Patrick Gallagher in response to a proposal by professors Luis Vargas and Jerry Zoffer.



Jerry Zoffer



Thomas Saaty and Luis Vargas

The mission of IC4CR is to provide decision makers with an in-depth understanding of the negotiating positions of all parties and recommend implementation guidelines, based on preferences and priorities, to facilitate resolution of otherwise intractable conflicts.

We propose to implement this mission by conducting studies of diplomatic and corporate conflicts using the Analytic Hierarchy Process (AHP), building tradeoff models with the following strategies and conducting simulations on the models developed.

- Eliciting preferences and priorities from the parties through the AHP to create a negotiation model which is measurement based;
- Using the priorities from the preferences to compute gain/loss ratios of tradeoffs from each party's perspective;
- Identifying win-win, non-zero-sum equitable tradeoffs that both parties can claim as a win;
- Developing a road map to facilitate implementing a feasible solution;

An example of what IC4CR can accomplish is the Pittsburgh Initiative that received over \$600,000 of funding over a period of eight years. These funds were raised from private foundations by Dean Emeritus and Professor Jerry Zoffer. For over seven years, small groups of distinguished Israeli and Palestinian experts met under the auspices of conflict resolution researchers from the University of Pittsburgh. At the core of this privately-funded project is the application of an advanced “trade-off” model based on the AHP developed by the late University of Pittsburgh Distinguished Professor Thomas L. Saaty. The result was a preference-based-priority road map for resolving the Israeli-Palestinian conflict that was made available to national leaders and decision makers of both parties.

A literature review shows the uniqueness of our approach in contrast to the traditional conflict resolution centers. Below are some examples of the vision and mission of existing centers [names withheld]:

- “[XYZ]’s mission is to bring people together to find lasting and effective solutions to conflict;”
- “[XYZ] is an innovative center committed to developing knowledge and practice to promote constructive conflict resolution, effective cooperation, and social justice. We partner with individuals, groups, organizations, and communities to create tools and environments through which conflicts can be resolved constructively and just and peaceful relationships can thrive;”
- “[XYZ] ... is guided by a fundamental commitment to human rights and the alleviation of human suffering. It seeks to prevent and resolve conflicts, enhance freedom and democracy, and improve health.”

IC4CR is different from these in that it has a definite approach with a process to be followed:

- IC4CR is based on the application of the AHP to the study and analysis of conflicts;
- The chief purpose of AHP is to provide decision makers with objective, numerical parameters regarding specific core issues. From such a valuation model, decision makers have access to a rational based model/tool for addressing and resolving specific, complex issues;
- The primary benefit of the AHP, whether used internally or together between the parties, is to reduce uncertainties—between and among the parties—on the relative value of core issues as negotiators address the “trade-off/exchange” component of negotiations. The information produced by this tool enhances rational-based decision-making, helps reduce emotion in negotiations, and assesses more accurately the relative value that each group attaches to an issue. AHP has been implemented in other international conflicts such as South Africa and Northern Ireland;

- The trade-off model is predicated upon the development and application of a process that reflects both in-depth understanding of the issues and the values attached to them by the respective parties (or sub-parties), and the importance of an issue in relation to other issues, of lesser, similar, or greater value. Of equal importance is determining the value the other side attaches to that issue and the value both sides attach within the context of a trade-off or trade-offs;
- The process requires assigning numerical values that measure the respective importance of each issue for the parties involved; it is that assessment/assignment that enables rational based decision-making in the context of potential trade-offs. AHP focuses on articulation and application of self-interest in a paradigm emphasizing trade-offs whereby both sides seek to “expand the pie” —and avoid zero-sum calculations that emphasize maximization of benefits for one side, to the detriment of the other side.

The foundations of IC4CR are that the Center’s approach to conflict resolution is based on the Analytic Hierarchy Process. The tradeoff model developed from the AHP priorities is based on the following seven ideas:

1. Each party identifies a set of concessions (trade-offs);
2. Each trade-off that a party gives away yields for that party a set of costs (not necessarily monetary) and a perceived set of benefits for the party receiving it;
3. Each trade-off that a party receives generates a set of benefits and a perceived set of losses for the party giving it away;
4. The benefits, costs, perceived benefits and perceived costs are prioritized using the AHP;
5. The trade-offs are evaluated according to the benefits, costs, perceived benefits, and perceived costs (see Figure 1);
6. The trade-offs of the parties are paired to decide which pairs are acceptable. Acceptable means both parties benefit from the trade-off and that they receive more than they lose from the trade-off they give away. Acceptability of a pair of trade-offs is implemented using the gain-loss ratio. Gain-loss ratios are not symmetric for the parties. This is not a zero-sum game;
7. Acceptable pairs of trade-offs are identified with the additional condition that the gain-loss ratio of a pair of concessions is as close as possible to each other for the parties (i.e., within a small percentage of each other) yielding the desired-for balanced agreement.

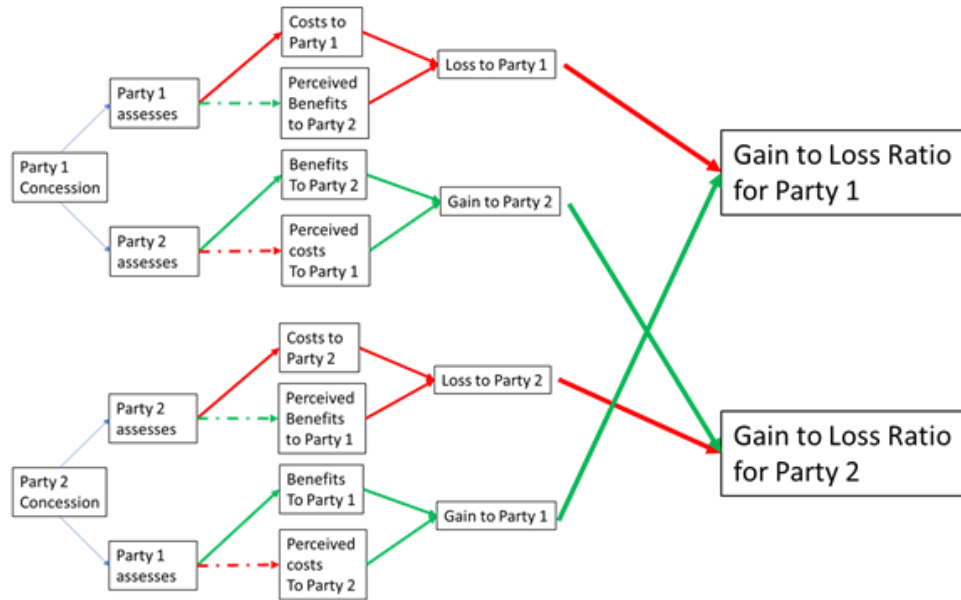


Figure 1 Gain to loss ratio

IC4CR has already applied this approach to the Israeli-Palestinian conflict. While the complexities of this conflict will require additional work, much progress has been made in identifying possible tradeoffs which could lead to a solution. Another project being developed is how to improve, to the community's and the police department's benefit, reconciliation between policing and community interests. A major proposal to be financed by the federal government will focus on the seemingly intractable issue of how to improve the recidivism rate and develop programs which will encourage those released from prison to begin more productive lives.

The idea of this center is not new; Tom Saaty worked in conflict resolution for many years. He wrote a white paper with Laurence R. Klein describing peace-war scenarios in the Middle East. The first author used those scenarios to analyze the conflict, and the result was a paper in the *European Journal of Operational Research*. No sooner had the paper appeared, at least this is how it seemed, than Tom had the idea of his International Center for Conflict Resolution (ICCR). He wrote an essay describing how the center could be formed, and called it "CREATING AN OPPORTUNITY AND MAKING IT POSSIBLE- A Far-Out Crazy Idea Worth Considering for the Long Run Survival of a Civilized World."

The first two paragraphs of his essay give credence to the creation of our modest center which albeit has the same title, but we refer to it by the acronym IC4CR. He wrote:

"Everyone agrees that several international conflicts and terrorism today carry the seed of prolonged and deadly military confrontations and wars and also the overt or covert spread and use of weapons of mass destruction and continuing conflict worldwide. The potential use of dirty bombs with material taken from unprotected sites will keep western nations nervous, alert and worried for a very long time into the future. There are nearly a dozen countries with nuclear

capability and their number is growing. Minority groups in pursuit of their goals resort to acts of terrorism. Killing or incarcerating terrorists appears to be the only mode of reply. But there can be another more positive way to deal with terrorists that is in harmony with the preservation of law and order and the function of international institutions. History teaches us not to trust short lulls of peace. The world needs an effective approach to conflict resolution more than ever before to ensure a lasting peace and better relations and understanding among disadvantaged peoples and among feuding nations, such as India and Pakistan, China and Taiwan, North Korea and the United States, Israel and dissatisfied Palestinians and other groups that support their resistance. The major concern of international conflict resolution today, however, is how to avoid war rather than how to attain peace. The continuation of a conflict through terrorism may be the new style of unsettling the established order in the world. To change this attitude, we need a new way to seek out the parties to understand their grievances and try to address them in a workable way.“

Thomas L. Saaty
1926-2017