

2012

Thinking or Feeling?: Effects of Decision Making Personality in Conflict Resolution

Cleotilde Gonzalez

Carnegie Mellon University, conzalez@andrew.cmu.edu

Lelyn D. Saner

Carnegie Mellon University

Follow this and additional works at: <http://repository.cmu.edu/sds>

 Part of the [Sociology Commons](#)

Published In

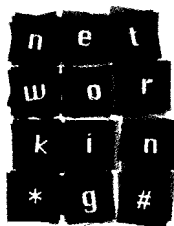
Emotional Gaming; J. von Brinken & H. Konietzny (Eds.), 77-89.

This Book Chapter is brought to you for free and open access by the Dietrich College of Humanities and Social Sciences at Research Showcase @ CMU. It has been accepted for inclusion in Department of Social and Decision Sciences by an authorized administrator of Research Showcase @ CMU. For more information, please contact research-showcase@andrew.cmu.edu.

Jörg von Brincken und Horst Konietzny (Hg.)

Emotional Gaming

Gefühlsdimensionen des Computerspielens



Das Buch erscheint in der Reihe

INTERVISIONEN - Texte zu Theater und anderen Künsten (Band 10)

Herausgegeben von Christopher Balme und Markus Moninger

Mitarbeit: Andreas Backoefer

leipodium

Thinking or Feeling?: Effects of Decision Making Personality in Conflict Resolution

By

Cleotilde Gonzalez and Lelyn Saner
Dynamic Decision Making Laboratory
Carnegie Mellon University, USA

Character Count: 26,221

Keywords: dynamic decision making, negotiation, conflict, video games, Israeli-Palestinian, policy making

ABSTRACT

This chapter presents an investigation of the effects of decision making personality in solving an international conflict. The Israeli-Palestinian conflict is represented in a realistic and well-known videogame, PeaceMaker. Participants in a study played the game, attempting to achieve a two-state solution in the game, under the Israeli role and the Palestinian role of the game. We collected data from their game play and used a questionnaire to collect information regarding the player's personality, their religion, and other general information. Results indicate that the players' decision making personality is related to their performance in PeaceMaker. Players of thinking personality were more successful at reaching a conflict resolution in the game compared to the players with feeling personality, suggesting that those that are more assertive and impersonal, rather than affective and personal, are more successful in conflict resolution. Furthermore, this distinction is particularly important when the players' religions are those involved in the conflict.

INTRODUCTION

Conflict resolution can be conceptualized as a dynamic decision making process, in which the resolution of the problem is obtained by making a series of interdependent decisions in the face of changing realities, interests, and relationships between the conflicting parties (Kelman, 2008). Conflict and its resolution occur at many levels: between individuals, organizations, and societies. Often, reaching a resolution requires that individuals master their emotions. For example, fear has widely been recognized as an emotion that can both stimulate the combatants to fight and cause them to flee in situations of armed confrontation (Bourke, 2001).

Video games are excellent tools to investigate conflict resolution processes. They represent realistic situations in which decisions are actually made and feedback resulting from the decisions is received (Gonzalez, Vanyukov, & Martin, 2005). The use of games for teaching international conflict in the classroom is not a new practice. John Gearon (1966) created a simple game to be used in the classroom to introduce ninth graders to the concepts of anarchy and the concept of *balance of power* that emerges in most situations of conflict (Bueno de Mesquita, 2006). Mintz et al. (1997) used a "decision board" tool to collect data in the classroom on what information is acquired and needed during the decision-making process in political scenarios. More recently, Kelle (2008) used an arms control simulation in an international relations course. Kelle's (2008) analysis of students' reflections concluded that the simulation helped facilitate knowledge of the complexity of international negotiations.

One of the more vexing conflicts of our time is the Israeli-Palestinian conflict (Eisenberg & Caplan, 1998). Although very difficult to categorize, there are a number of factors that have contributed to this conflict over the years, with such long-running historical hostility that there is deep distrust among the nations involved. Complex political interests, the religious importance of the region to several major world religions, and geographical mobility of the different interest groups throughout centuries have made this conflict a matter of importance to the entire world. Many of the historical events and the possible actions in the Middle East conflict are represented in an award winning video game named PeaceMaker (Impact Games, 2008).

PeaceMaker is clearly an emotionally loaded game. The realism of the representation of the historic events that led to the current state of affairs in the Middle East is impressive. The possible actions that may be used to move towards a conflict resolution are also realistically rendered. But there are a number of unanswered questions related to the effectiveness of the game in helping people to understand the conflict, to understand possible solution strategies, and to determine alternative courses of action. Furthermore there are some unresolved issues regarding the relationships between conflict resolution and cultural, social, and personal factors: dealing with emotions, personality, religion, and political affiliations. Investigating how those factors influence a person's view and solution to the conflict in the game may help us better understand real-world conflict resolution processes.

We have started to answer some of these questions. Psychological theories propose that people have preferred modes of orientation that define their personality type. The Myers-Briggs type indicator (Myers & McCaulley, 1985) is used widely in corporations to determine managerial behavior, such as decision making, conflict management, and leadership (Gardner & Martinko, 1996). According to several findings, managers are more inclined to prefer thinking and judgment over feeling and perception compared to the general population. That is, managers are often more logical, assertive, and impersonal, rather than affective, cooperative, and personal. As such, thinking managers tend to be assertive in resolving conflicts whereas feeling managers are more inclined to cooperate (Gardner & Martinko, 1996).

We have used the Myers-Briggs personality test in previous studies to determine the relationship between the game player's personality and the success in conflict resolution. In recent research we have observed that the player's personality determined his or her success in resolving the conflict in Peacemaker. Although the sample was too small to render significant results, it appeared that individuals with "thinking" personality, those more logical and calculating decision makers, were able to improve their performance in the conflict resolution attempts more other personality groups (Gonzalez & Czlonka, in press). Presumably, the decision making style of the thinking personality group, based on their desire for fairness (Filbeck & Smith, 1996), results in better scores and more successes in PeaceMaker.

In this chapter we report how players with *Thinking* and *Feeling* decision making personalities address the conflict resolution in the Middle East through PeaceMaker. Based on our past findings (Gonzalez & Czlonka, in press), we expect that those players with thinking personality would be able to perform better in the game than those with feeling personality. We expect that those with feeling personality will attempt to please both sides, but will be more emotionally aroused by the situation to an extent that they might have difficulty reaching the balance needed to win the game.

A second related question addressed in this paper is that of the relationship between the decision making personality style and the religion of the player. Peoples' religious beliefs are expected to determine the perception and decision making in PeaceMaker. In general, individuals' background ideologies, political, religious, and cultural identities impact their perception of conflicts and the groups that are involved (Garzke & Gleditsch, 2006; Lugo, 2007). Religion can influence beliefs and the sense of belonging to a group, thus highlighting the differences between one's in-group and the other group (Lugo, 2007; Cheung-Blunden & Blunden, 2007). According to our past findings (Gonzalez, Czlonka & Eisenberg, under review), the players' religious beliefs influenced the performance in PeaceMaker initially, but the relationship disappeared after practicing the game and acquiring instruction on the historic events that led to the conflict. The initial study however, only involved players that reported two of the major religions related to the conflict in PeaceMaker: Christianity and Judaism. The study we report here involves a more diverse set of participants, including players of the Islamic religion. Again the goal here is to determine how the decision making personality effects are moderated by the religious background of the player.

PeaceMaker Experiment and Decision Making Personality

Methods

Participants

We conducted a study with two samples of university students. In one sample, there were 60 students (29 male, 31 female; Ages 18-28, Mode=21) who were members of two classes on the Middle East conflict at a major eastern university in the U.S. The

second sample was comprised of 59 students (41 male, 18 female; Ages 13-66, Mode=18) at a branch campus of the U.S. university that is located in Doha, Qatar. In total, there were 119 participants.

Materials

Participants played the PeaceMaker video game (see Figure 1) (ImpactGames, 2008), which has been described in detail in past research (Gonzalez & Czlonka, in press; Gonzalez, Czlonka & Eisenberg, under review), as well as in another chapter of this volume (see Kampf, this volume). Here we will only summarize the main elements of the game necessary for this study (please refer to the other publications for a full description of the game).

Figure 1. PeaceMaker Screenshot. © [2007] [Eric Brown]. Used with permission.



PeaceMaker is an emotionally charged game, given the social, economical, and moral issues involved in the complex problem of the Israeli-Palestinian conflict. In PeaceMaker players can play one of two roles: the Israeli Prime Minister or the

Palestinian President. Players choose actions to take in the game and accumulate or lose points according to the effects those actions have on the approval ratings of various interest groups. The scores are calculated by a function within the game, and reflect the satisfaction or unhappiness of different nations and political groups, both within the region and around the world (e.g., Israel, Hamas, United Nations, etc.). A main assumption of the game is that the player will win the game only if a two-state solution is reached. In the game terms, this means that if the player manages to reach a balanced and highly positive score for both the Israeli and the Palestinian groups (100 points for each side), the player wins and the game is over. If a player cannot sufficiently please his/her own people or the other side's constituents, the player loses and the game is over (when any of the two scores is lower than -50 points).

In partnership with Impact Games, the game was modified for us to collect information about each action taken by a player and the state of the environment at the moment the action was taken. A log file is created for each play of the game. This log file contains information about the role being played; the decision time; the number and type of actions taken in the game, and the resulting scores. The final scores were used in this study for analyses of the players' performance in the game and correlation to the player's personality and other individual difference measures.

The information on the players' personality and other background information were obtained through a questionnaire. One component of the questionnaire, and the most pertinent to the results that we report here was the Myers-Briggs Type Indicator (MBTI) measure of personality. There are four key dimensions of temperament that are captured by the MBTI; the degree to which people are *introverted* (I) or *extroverted* (E) in social interactions, the degree to which people rely on *sensation* (S) versus *intuition* (N) as a source of information and insight, the degree to which people are more oriented toward *thinking* (T) or *feeling* (F) when making decisions, and the degree to which people are *judging* (J) or *perceiving* (P) in how they interact with the world. Where people sit on these dimensions helps characterize and explain differences in their behavioral tendencies in different situations (Chwif & Barretto, 2003). To complete the MBTI questionnaire, participants were directed to the Team Technology website (<http://www.teamtechnology.co.uk/mmdi-re/mmdi-re.htm>, 2008). The website provides

a free instrument, with 20 agreement scale items, and generates a report indicating which personality types match each participant's response most closely.

In addition, participants reported their religious affiliation. The response format was open, but responses were categorized for analysis in terms of being one of the three major monotheistic religions with the most vested interests in the region (*Islam, Judaism, and Christianity*) and other religion (including *other religion, no religion, and atheism*).

Procedure

Every participant played two games in succession within a single session. Each person played one game as the Israeli Prime Minister and one game as the Palestinian President. After completing the questionnaire, which was automated, participants were given a self-directed tutorial of the PeaceMaker game and were randomly assigned to a role in which to play their first game. Their second game was started as soon as possible after they finished the first game, allowing a brief break if needed. Assignment to the initial role was counterbalanced such that each ordering of the roles was played by half of the participants.

Results

We were interested in whether the feeling personality players would do better or worse in the game than the thinking personality players. Our measure of performance in the game was whether or not participants won the games by reaching a stable, two-state solution to the conflict. Out of 238 games played overall (two per person), 74 games (31%, S.E.=3%) were completed successfully. The success rate was higher (37%, n=44, S.E.=4%) among the games played under the role of Palestinian President, but it was lower (25%, n=30, S.E.=4%) among the games played as the Israeli Prime Minister.

The four dimensions of the MBTI allow for 16 possible personality profiles, which together provide the fullest characterization of a person's temperament available with this instrument. All of the personalities were represented in this sample, though some were more than others. The most common personality type was ESFJ, which was represented by 18% of the participants. The second and third most frequent personality types were ESFP (12%) and ENFJ (11%), respectively. All other profiles were each

represented by 3%-8% of the sample. It is notable that 29% of the participants were extroverted, sensing, feeling-oriented people, and those people were nearly evenly split between being judging and being perceiving as well. Aside from the fact that there were not enough participants within all of the categories to be able to reliably compare groups at the profile level, any effects of such complex categories would be very difficult to interpret clearly. As such, in this context, it was more appropriate to consider each dimension on its own and in combination with, at most, one other dimension. Table 1 shows the proportions of participants who had each characteristic on the MBTI.

Table 1: Personality Characteristics of PeaceMaker Participants

Characteristic	N	Proportion
Extrovert (E)	73	61%
Introvert (I)	46	39%
Intuiting (N)	55	46%
Sensing (S)	64	54%
Feeling (F)	85	71%
Thinking (T)	34	29%
Judging (J)	70	59%
Perceiving (P)	49	41%

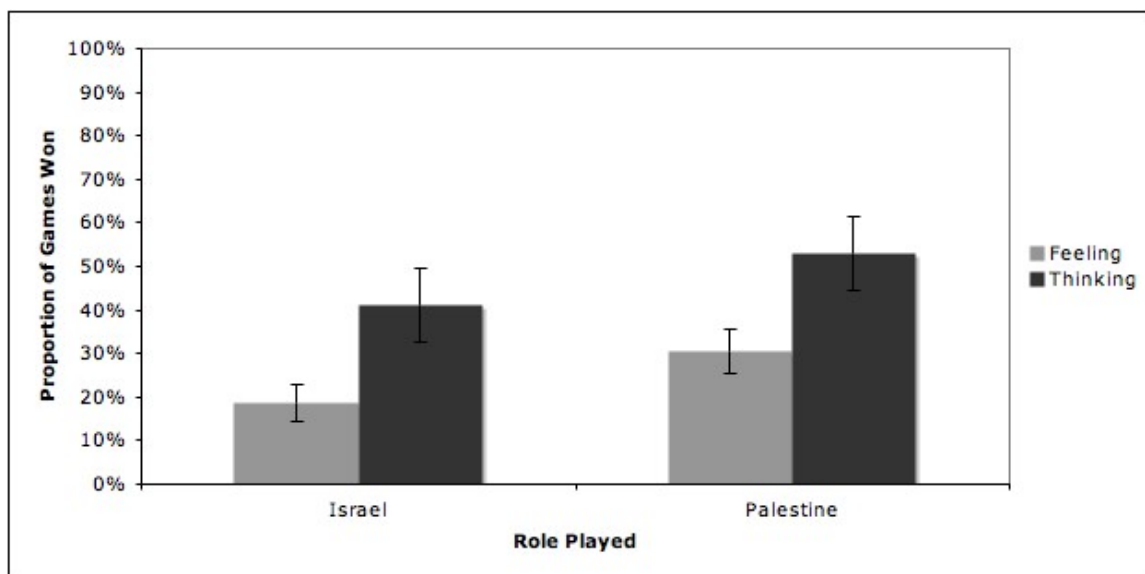
Effects of Personality Factors on Game Success

Because our central interest is in the effects of decision making personality on resolving the conflict in PeaceMaker, our analysis focused particularly on the (T)hinking/(F)eeling dimension of the MBTI. It is important to highlight that people who tend toward thinking do not necessarily 'think better' than their feeling counterparts. The feeling personality is considered an equally viable way of coming to decisions. Thus, the

MBTI is a measure of tendency, not ability. Similarly, those who tend toward feeling do not necessarily have “better” emotional reactions than their thinking counterparts.

In order to test the relationships between the predictors and performance, Chi-Square analyses were performed. As shown on Table 1, over two-thirds of the participants in this study (71%) had a feeling personality. When those participants’ rate of success was compared to that of those who were of thinking personality, it was found that people who make their decisions on the basis of feelings have a significantly lower probability of winning (25%, $n=170$, $S.E.=3\%$) than those who base decisions on thought (47%, $n=68$, $S.E.=6\%$), $X^2=11.33$, $p<0.01$. This effect was observed among the subsets of games played in each role as well, as shown in Figure 1. The thinking-oriented participants had significantly higher success rates than the feeling-oriented participants playing either the Israeli role (41%; $X^2=6.43$, $p<0.05$) or the Palestinian role (53%; $X^2=5.00$, $p<0.05$).

Figure 1: Success Rate by Personality and Role

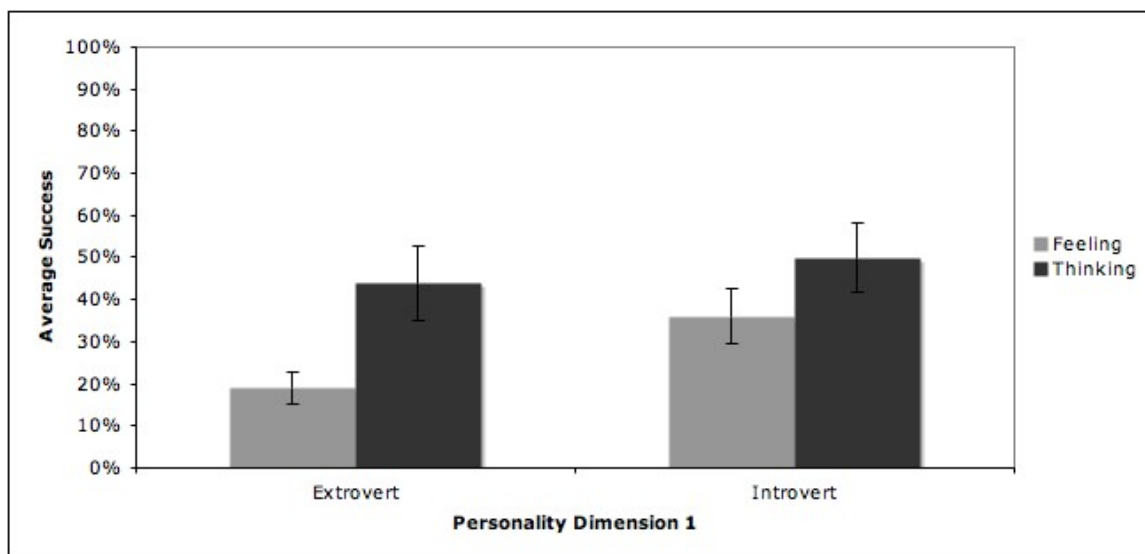


Success rates were compared across the poles of the other three personality dimensions as well. No significant differences were found between Judging and Perceiving types or between Intuiting and Sensing types. On the remaining dimension, however, it was observed that Introverts performed significantly better (41% success,

$n=92$, $S.E.=5\%$) than Extroverts did (25% success, $n=146$, $S.E.=4\%$, $X^2=7.63$, $p<0.01$). Although this effect did not hold within the Israeli role games, the pattern was exhibited among Palestinian role games. Introverts showed 48% success ($n=46$, $S.E.=7\%$) and Extroverts had a rate of 30% ($n=73$, $S.E.=5\%$), $X^2=4.18$, $p<0.05$.

We also tested whether the Thinking/Feeling and the Introvert/Extrovert dimensions would have a combined effect on success in the game. First, it is important to note that the relative number of extroverted-feeling people (48%, $n=57$, $S.E.=5\%$) was significantly higher than those of the other subcategories along these dimensions (introverted-feeling=24%, extroverted-thinking=13%, and introverted-thinking=15%), $X^2=4.10$, $p<0.05$. In order to test whether there was a difference between these four subcategories of people in average success, a 2*2 ANOVA was conducted (see Figure 2). Consistent with the earlier result, the Thinking/Feeling dimension had a significant main effect ($F(1, 234)=8.63$, $p<0.01$), but there was no main effect of the Introvert/Extrovert dimension and no effect of interaction between the dimensions. This suggests that it was the Thinking/Feeling dimension that was primarily responsible for the effect of personality on success in the game.

Figure 2: Success by Two-Way Personality Type



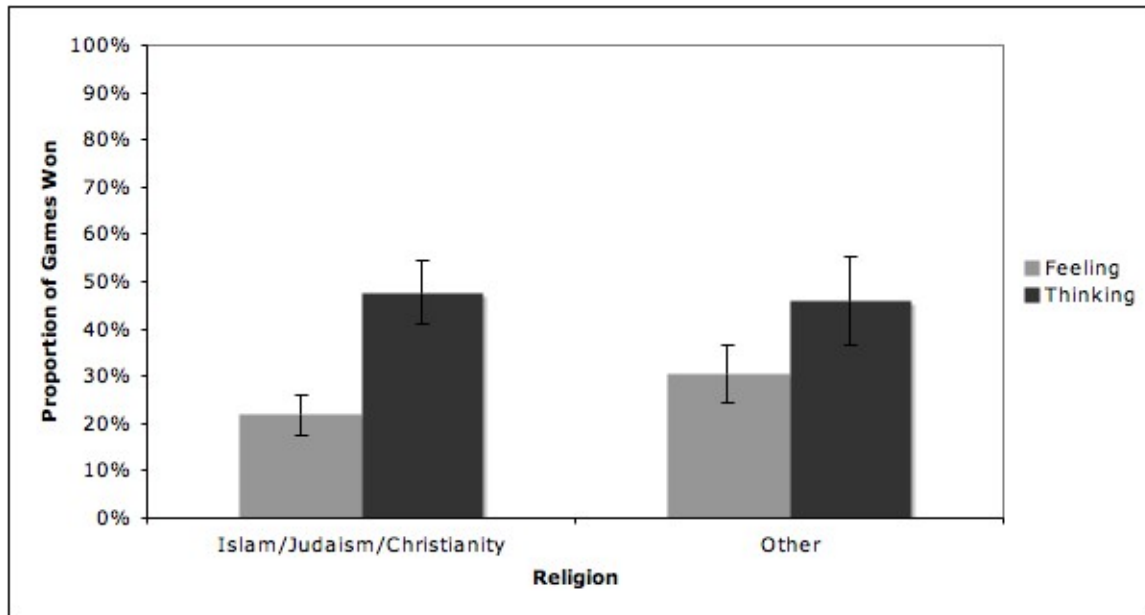
Relationship between Personality, Religion, and Game Success

We also examined the interaction between the thinking and feeling personality types and the player's reported religion to determine if any effects of emotional personality were being moderated by their religious beliefs. 33% (n=39) of the participants reported Christianity as their religious affiliation, 28% were Muslim, 23% were non-religious, 8% Jewish, and 11% reported some other religious affiliation.

To determine whether religion had an added effect on game performance, we analyzed the combination of feeling/thinking personality and religion in a 2*2 ANOVA, where religious affiliation was implemented as a two group distinction; the set of major monotheistic religions that have direct stakes in the conflict (Islam, Judaism, and Christianity) versus other religious orientations. Here again, there was a significant main effect of personality type ($F(1,234)=9.07$, $p<0.01$), but there was no main effect of religion and no interaction between the variables (See Figure 3).

However, follow-up analyses within each religion group showed that although there was no difference between feeling and thinking oriented people in the other religion group, there was a large significant difference between the personality types when the participants were members of the three relevant religions to the conflict, $X^2=10.24$, $p<0.01$. Within that religious category, those with a feeling orientation won 22% of their games (n=114, S.E.=4%), but those with a thinking orientation won 48% of their games (n=44, S.E.=8%).

Figure 3: Success by Religion and Personality



Discussion

The results of this study supported our expectation that the players' emotional personality would be related to their performance in PeaceMaker: in general, those players that tended to take a thinking approach in their decision making were more successful at resolving the conflict in PeaceMaker than those whose decision making personality style was feeling oriented. The proportion of games won by the thinking personality group was higher than the proportion of games won by the feeling personality group, regardless of the role they played in the game (Israel/Palestine) and regardless of other personality characteristics (extroversion/introversion). Furthermore, when religious belief was considered in relation to this personality dimension, the same pattern was observed among those with affiliations to the major religions of interest, but was not significant among those of other religious affiliation.

These results are interesting in several ways. First, they converge with our previous findings regarding the influence of personality variables on the ability to perform well in a conflict resolution situation (Gonzalez & Czlodka, in press). More concretely, this study finds that the decision making personality, whether thinking or feeling type, marks an important predictor of the person's ability to resolve the conflict in PeaceMaker successfully. The distinction between thinking and feeling is particularly important in Peacemaker, because these results suggest that in order to be successful in

this game one needs to be more critical in dealing with emotional situations. This result agrees with findings indicating that managers of successful organizations are more inclined to exhibit thinking rather than feeling personality traits (Gardner & Martinko, 1996). In practice, it would be important to include decision makers and mediators with the thinking personality style, who are better able to remain emotionally detached from the situation, and are therefore more successful at resolving a conflict.

Interestingly, the benefits of the thinking over the feeling personality depend on the religion reported by the player. The difference in performance between the thinking and feeling personality group is significant when the players declared Islam, Judaism, or Christianity as his or her religion. This difference is not significant when the players declared other religion. Thus, in practice, it is considerably more important to involve decision makers with a thinking rather than a feeling personality when the decision maker shares one of those three religions.

ACKNOWLEDGEMENTS

This research was partially supported by the Richard Lounsbery Foundation award to Cleotilde Gonzalez. We thank Eric Brown and Asi Burak for their development of the inspiring video game that motivated this research, PeaceMaker.

REFERENCES

- Bourke, J. (2001). The emotions in war: Fear and the British and American military, 1914-45. *Historical Research*, 74(185), 314-330.
- Bueno de Mesquita, B. (2006). Game theory, political economy, and the evolving study of war and peace. *American Political Science Review*, 100(4), 637-642.
- Cheung-Blunden, V., & Blunden, B. (2008). Paving the road to war with group membership, appraisal antecedents, and anger. *Aggressive Behavior*, 34(3), 175-189.
- Chwif, L., & Barretto, M. R. P. (2003). Simulation models as an aid for teaching and learning process in operations management. In S. Chick, P. J. Sánchez, D. Ferrin, & D. J. Morrice (Eds.) *2003 Winter Simulation Conference* (pp. 1994-2000).

- Eisenberg, L., & Caplan, N. (1998). *Negotiating Arab-Israeli peace: Patterns, problems, possibilities*. Bloomington: Indiana University Press.
- Filbeck, G., & Smith, L. (1996). Learning styles, teaching strategies, and predictors of success for students in corporate finance. *Financial Practice and Education*, 48, 1299-1300.
- Gardner, W. L., & Martinko, M. J. (1996). Using the Myers-Briggs Type Indicator to study managers: A literature review and research agenda. *Journal of Management*, 22(1), 45-83.
- Gartzke, E., & Gleditsch, K. S. (2006). Identity and conflict: Ties that bind and differences that divide. *European Journal of International Relations*, 12(1), 53-87.
- Gearon, J. D. (1966). War or peace: A simulation game. *Social Education*, 30(7), 521-522.
- Gonzalez, C. & Czlonka, L. (in press). Games for peace: Empirical investigations with PeaceMaker. In J. Cannon-Bowers & C. Bowers (Eds.), *Serious game design and development: Technologies for training and learning*.
- Gonzalez, C., Czlonka, L., & Eisenberg, L. (under review). Learning to stand in the other's shoes: A computer video game experience of the Israeli-Palestinian conflict. Manuscript submitted for publication.
- Gonzalez, C., Vanyukov, P., & Martin, M. K. (2005). The use of microworlds to study dynamic decision making. *Computers in Human Behavior*, 21(2), 273-286.
- ImpactGames. (2008). PeaceMaker Game. Retrieved from <http://www.peacemakergame.com>.
- Kelle, A. (2008). Experiential learning in an arms control simulation. *Political Science & Politics*, 41, 379-385.
- Kelman, H. C. (2008). A social-psychological approach to conflict analysis and resolution. In D. Sandole, S. Byrne, I. Sandole-Staroste & J. Senehi (Eds.), *Handbook on conflict analysis and resolution* (pp. 170-183). London and New York: Routledge [Taylor & Francis].
- Lugo, L. (2007). International obligations and the morality of war. *Society*, 44(6), 109-112.

- Mintz, A., Geva, N., Redd, S. B., & Carnes, A. (1997). The effect of dynamic and static choice sets on political decision making: An analysis using the decision board platform. *The American Political Science Review*, *91*(3), 553-566.
- Myers, I. B., & McCaulley, M. H. (1985). *Manual: A guide to the development and use of the Myers-Briggs Indicator*. Palo Alto, CA: Consulting Psychologists Press, Inc.
- Team Technology (2008). "Free personality test: MMPI™ questionnaire," *Team Technology*. Retrieved from <http://www.teamtechnology.co.uk/mmdi-re/mmdi-re.htm>.