

# A simulation of the Israeli-Palestinian Conflict as a Tool for Knowledge Acquisition and Attitude Change

**Ronit Kampf**  
Tel Aviv University  
ronit.kampf@gmail.com

**Esra Cuhadar**  
Bilkent University  
esracg@bilkent.edu.tr

## Abstract

This article presents a cross-cultural experiment assessing PeaceMaker effects on knowledge acquisition on the Israeli-Palestinian conflict and on attitude change regarding key issues in the conflict. PeaceMaker is a computer game simulating the Israeli-Palestinian conflict. 167 undergraduate students participated in the study, including 38 Turkish students, 50 Israeli students of Jewish origin, 39 American students and 40 Palestinian students. The participants played the game twice, once in the Israeli Prime Minister role and once in the Palestinian President role, in random order. They were required to fill in questionnaires measuring knowledge on the Israeli-Palestinian situation and attitudes regarding various aspects of the conflict before and after playing the game. Results suggested that all four groups of participants acquired more knowledge about the conflict after playing the game. In addition, American and Turkish students became more impartial toward the Gaza operation after playing the game, but not Israeli-Jews and Palestinians. Finally, the game did not change participants' attitudes regarding key issues in the conflict including Jerusalem, settlements, water, borders, security and refugees. Though a limited effect, these results are encouraging to conduct further studies to understand under what conditions can technology be used as an effective conflict resolution intervention.

**Keywords:** PeaceMaker, Computerized Simulations, Israeli-Palestinian Conflict, Attitude Change, Conflict Resolution.

## Introduction

We examined how effective and useful is technology as a pedagogical tool in teaching conflict resolution. There is very little research on this question, and none of the assessments involved a cross-cultural experimental study (e.g., Bhappu et al., 2010; Ebner, 2008; Matz and Ebner, 2010). We conducted a cross-cultural experiment in four different national groups using PeaceMaker, a computer game simulating the Israeli-Palestinian conflict. We were specifically interested in the following questions: Does the game affect participants' acquisition of knowledge about the conflict? Does the game contribute to attitude change regarding the conflict? Are there any differences in terms of knowledge acquisition and attitude change between participants that are direct parties to the conflict (in this study Israeli-Jews and Palestinians) and those that are third parties (Americans and Turks)? Knowledge acquisition about the conflict is an important requirement for attitude change regarding key issues in the situation (Maoz, 2011; Maoz and McCauley, 2005; Suleiman, 2004). Attitude change is considered as one of the most important outcomes in conflict resolution activities as it is often regarded as the pre-requisite of developing empathy toward the "other" (Bar-Tal, 2001; 2004; Maoz and McCauley, 2005; Suleiman, 2004).

The literature includes two main lines of research regarding simulations like PeaceMaker. The first line focuses on decision making in the game. For instance, Gonzalez, Kampf and Martin

(2011) explored the strategies used by Israeli students attempting to resolve the Israeli-Palestinian conflict in PeaceMaker focusing on the diversity of actions undertaken by students in the game. The second line of research focuses on the use of simulations like PeaceMaker as a learning tool in the class. For instance, Gonzalez, Saner and Eisenberg (2010) examined the use of PeaceMaker in the classroom as means of studying the Israeli-Palestinian conflict focusing on game performance in the beginning of the semester and in the end of the semester after studying a course on the conflict in the Middle East. Another study of Kelle (2008) used an arms control simulation as a learning tool in the class, but did not conduct statistical analysis on pre- and post-knowledge levels or the effects on performance in the simulation. Our study investigates PeaceMaker as a tool for teaching conflict resolution measuring knowledge acquisition and attitude change before and after playing the game.

### The PeaceMaker game

In PeaceMaker a player can assume the role of either the Israeli Prime Minister or the Palestinian President and engage in a series of decisions with the aim of satisfying constituents on both sides of the conflict. ImpactGames developed this game with the help of advisors in Israel, Palestine and USA (Burak, Keylor & Sweeney, 2005).

PeaceMaker can be played in English, Hebrew, and Arabic, on calm, tense, or violent conflict levels, differing in the frequency of events that appear on the screen and are beyond the player's control (see Figure 1). In order to deal with these events a player can select actions pertaining to three main categories: security, political and construction, each branching into a variety of sub-categories such as checkpoints and speeches.



**Figure 1: Screenshot of PeaceMaker showing the toolbar from which a player selects actions in response to events that appear on the map of Israel, the West Bank and the Gaza Strip, and the scores for the Palestinian and Israeli sides**

Players, accumulate points for both sides according to the actions taken in the game. The scores, calculated by a function within the game, are related to the polls registering the level of satisfaction of different nations, and political groups within the country and around the world in response to the leader's actions. In order to resolve the conflict in the game, scores for both Israeli and Palestinian sides must reach 100 points each. If either score drops below -50 the player loses the game.

### Research hypotheses

1. Israeli-Jew, Palestinian, Turkish and American participants will become more knowledgeable about the Israeli-Palestinian conflict after playing PeaceMaker.
2. Turkish and American participants will change their attitudes regarding the Israeli-Palestinian conflict after playing PeaceMaker.
3. Israeli-Jew and Palestinian participants will not change their attitudes regarding the Israeli-Palestinian conflict after playing PeaceMaker.

## Methodology

### Participants

167 undergraduate students of political science participated in the study. The participants included 38 Turkish students from Bilkent University, 50 Israeli students of Jewish origin from Tel Aviv University, 39 American students from the School for Overseas Students at Tel Aviv University and 40 Palestinian students from Bethlehem University.

The four groups did not differ in terms of gender ( $\chi^2(166, 3) = .40, p < .94$ ). Turkish participants were 55% women and 45% men. American participants were 51% women and 49% men. Israeli participants of Jewish origin were 55% women and 45% men. Palestinian participants were 55% women and 45% men. The four groups differed in terms of age. Israeli students of Jewish origin were older ( $M = 25.12, SD = 1.32$ ) than American students ( $M = 22.7, SD = 2.39$ ), Turkish students ( $M = 21.42, SD = 1.59$ ) and Palestinian students ( $M = 21.1, SD = 1.17$ ),  $F(3, 166) = 44.57, p < .0001$ ).

### Design and procedure

The study took up to three and a half hours and included four parts. First, participants were introduced with the PeaceMaker game and played a short demo. Second, they filled in a short questionnaire consisting of a battery of knowledge questions on the Israeli-Palestinian conflict, attitudes on various aspects of the Israeli-Palestinian conflict, nationality, political stance, religious affiliation, average of weekly hours playing computer and video games, average of weekly hours spent online and demographics. Third, participants played the game twice, once in the Israeli Prime Minister role and once in the Palestinian President role, in random order. All participants played PeaceMaker at the calm conflict level (i.e., low frequency of inciting incidents). American and Turkish participants played the game in English, Israeli participants of Jewish origin played the game in Hebrew and Palestinian participants played the game in Arabic. Finally, after playing the game the participants filled in again a short questionnaire examining knowledge on the Israeli-Palestinian situation, attitudes on various aspects of the Israeli-Palestinian conflict and reflections on their experience with PeaceMaker. The questionnaires used before and after the game were almost identical in content with the exception of a few additional questions in the post-questionnaire deliberating participants' experience with the game.

## Measures

As our measure of background knowledge, students were asked a battery of 24 open-ended and close-ended knowledge questions on various political and historical aspects of the conflict, such as who are the parties in the 1993 Oslo agreement, who is Gilead Shalit and what is the meaning of the Nakba Day. The coding differentiated between correct answers, don't know answers, and incorrect answers.

We had two measures for assessing attitudes toward the conflict. The first measure asked how right is each side on various issues such as the Gaza operation. The following scale was used in these questions: 1. Palestinians are absolutely right, 2. Palestinians are somewhat right, 3. both sides are equally right, 4. Israelis are somewhat right, and 5. Israelis are absolutely right. Other than the Gaza operation, this measure also examined how right is each side on key issues in the conflict including water, refugees, borders, settlements, Jerusalem and security. The abovementioned scale was used for this measure as well. For the purpose of data analysis, the average of answers given on the six key issues was used as a measure of attitudes on key issues in the conflict.

## Results

### Game effects on attitudes regarding the conflict

To examine for game effects on attitudes regarding the conflict, we assessed the pre-game and post-game answers in relation to the Gaza operation and also in relation to key disputed issues in the conflict (i.e., water, settlements, security, refugees, Jerusalem and borders). For the first one, we conducted a repeated measures ANOVA with the attitudes on how right is each side in the Gaza operation (before or after playing the game) as a within-subjects factor and group (Israeli-Jew, Palestinian, Turkish or American) as a between-subjects factor. The interaction of attitudes on the Gaza operation and group was significant,  $F(3, 166) = 3.06, p < .032$ . American students got closer to think that both Israeli and Palestinian sides are equally right regarding the Gaza operation after playing the game ( $M = 2.98, SD = 1.26$ ) than before playing it ( $M = 3.4, SD = 1.18$ ). Similarly, Turkish students got closer to think that both Israeli and Palestinian sides are equally right regarding the Gaza operation after playing the game ( $M = 2.38, SD = 1.27$ ) than before playing it ( $M = 2.197, SD = 1.15$ ). In contrast, Israeli students of Jewish origin did not change their attitudes regarding how right is each side in the Gaza operation after playing the game ( $M = 3.6, SD = 1.07; M = 3.6, SD = 1.09$ ), and thought that Israelis are somewhat right in the Gaza operation. Similarly, Palestinian students did not change their attitudes after playing the game ( $M = 1.6, SD = .75; M = 1.7, SD = .68$ ), and thought that Palestinians are somewhat right in the Gaza operation.

To test for game effects on attitudes regarding key issues in the conflict, we conducted a repeated measures ANOVA with the attitudes regarding how right is each side on key issues in the conflict (before or after playing the game) as a within-subjects factor and group (Israeli-Jew, Palestinian, Turkish or American) as a between-subjects factor. The interaction of attitudes regarding key issues in the conflict and group was insignificant,  $F(3, 166) = .45, p < .72$ . To put it differently, there are no indications for game effects on attitudes regarding how right is each side on key in the conflict.

### Game effects on knowledge acquisition on the conflict

To examine for game effects on acquiring knowledge on the conflict, we conducted a repeated measures ANOVA with the number of correct answers to knowledge questions (before or after playing the game) as a within-subjects factor and group (Israeli-Jew, Palestinian, Turkish or American) as a between-subjects factor. The interaction of the number of correct answers and

group was significant,  $F(3,166) = 13.56$ ,  $p < .0001$ . American students answered more knowledge questions correctly after playing the game ( $M = 17.6$ ,  $SD = 2.17$ ) than before playing it ( $M = 13.5$ ,  $SD = 2.34$ ). Turkish students answered more knowledge questions correctly after playing the game ( $M = 9.34$ ,  $SD = 4.29$ ) than before playing it ( $M = 7.89$ ,  $SD = 4.01$ ). Israeli participants of Jewish origin answered more questions correctly after playing the game ( $M = 22.12$ ,  $SD = 1.89$ ) than before playing it ( $M = 20.3$ ,  $SD = 3.15$ ). Palestinian participants answered more questions correctly after playing the game ( $M = 21.45$ ,  $SD = 1.85$ ) than before playing it ( $M = 19.4$ ,  $SD = 2.14$ ).

## Conclusions

This study aims at assessing the impact of using technology in conflict resolution. By using the PeaceMaker game, which is a simulation of the Israeli-Palestinian conflict, in a cross-cultural experiment design, we examined whether participants can increase their knowledge about the conflict, can change attitudes, and whether there are differences in knowledge acquisition and attitude change between direct parties (i.e., Israeli-Jews and Palestinians) and third parties (i.e., Turks and Americans). The results are promising albeit requiring further assessment. First, all four groups of participants became more knowledgeable about the conflict after playing the game. In addition, American and Turkish students became more impartial toward the Gaza operation after playing the game. Yet the game had an effect on attitudes of third party participants only with regard to the Gaza operation. This may be because the Gaza operation is a recent event which received extensive media coverage as opposed to the other issues. Participants, considering their age, might be more familiar with this issue and therefore the game has an impact on attitudes only on the Gaza operation. Finally, attitude change was not obtained for participants that are direct parties to the conflict because the study involved a short intervention. Though a limited effect, the abovementioned results are encouraging us to conduct further studies to understand under what conditions can technology be used as an effective conflict resolution intervention. Additional studies are needed to especially understand how technology can effectively contribute to attitude change and building empathy between the parties in the conflict.

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