

IS PEACE POSSIBLE?: ATTITUDE AND BEHAVIOR CHANGE IN A SIMULATED
INTERNATIONAL CONFLICT

BY

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Abstract

Previous research has demonstrated the efficacy of Multiple Identification Theory (MIT) in fostering cooperative attitudes and behaviors among participants in simulated international conflicts. However, these studies did not employ control groups and their evidence of *in vivo* behavioral change was self-reported. Questions also persist in the literature regarding the effectiveness of games at teaching students about international relations. The present investigation attempts to improve upon previous MIT research and resolve these questions.

Participants either played an MIT game twice (full simulation treatment) or watched a documentary and played the game once (partial simulation treatment). Their attitudes and behaviors towards conflict were measured before, during and after the experimental sessions. Statistical tests showed that the attitudes and behaviors of full treatment participants became significantly more cooperative than those of partial treatment participants. The implications of this research for international relations practice, theory, and education are discussed.

What are the causes of war? What, if anything, can be done to preserve and promote international peace? . . . [T]here is consensus that these are the most important questions for students of international relations.

Keith L. Shimko (2008; p. 75)

Considerations of war and peace have been a central focus of international relations research. One of the most prominent features of the historic split between realists and liberals is the difference in opinion over the feasibility of lasting peace. Realists view the international system as one of self-help. States that take altruistic or selfless actions in attempts to achieve cooperative conflict resolution will find themselves exploited by other states. Liberals disagree. They contend that states can realize the longterm pitfalls of competitive conflict resolution and instead resolve conflicts cooperatively for the gain of all involved.

Social psychological research lends tentative support to the liberal conclusion. Deutsch (2006) touts the benefits of cooperative, “win-win” negotiation outcomes in which all sides are satisfied with the agreement reached. Achieving these outcomes requires a state of positive interdependence among the various negotiating parties. The existence of positive interdependence means that each side has the best chance of reaching its goals if the other sides reach their goals. To impact negotiations, this interdependence cannot exist solely in the opinions of neutral observers; all negotiators must perceive their goals as interdependent as well.

However, liberals admit that part of the difficulty in achieving such resolution in international relations stems from states’ trouble realizing that their long-term well-being is mutually dependent. How, one wonders, can states get around this problem?

Deutsch argues that third party mediators can be an integral part of the process. Such individuals will have “cooperative conflict resolution skills” (36). Deutsch uses this term to

refer to, among other abilities, the conciliators' proficiency at reframing the conflict as an issue to be solved cooperatively, helping each side recognize the other sides' interests, and making every group aware of their shared desired outcomes. These efforts would often come in the form of a problem solving workshop.

Kelman (2002) discusses the benefits of such workshops when detailing the benefits of Track II diplomacy. As opposed to Track I diplomacy, or the diplomacy between the official representatives of conflicting communities, Track II diplomacy occurs between nonofficial-yet-influential members of communities. Such individuals may feel freer in practicum meetings to discuss and explore resolution opportunities than states' official diplomats.

Fisher (2000) notes that "civilization is far from having the knowledge and expertise required" to resolve easily "destructive, escalated intergroup conflict" (175). I contend that new interactive problem solving tools for use in Track I and Track II diplomacy could be of valuable assistance in aiding states in their realization of their mutual interdependence. They may be particularly important for intractable conflicts, the sorts of conflicts which Abu-Nimer (1996), Heraclides (1989), and Kriesberg (1992) believe should be addressed through cooperative approaches. One such interactive tool is a simulation game, which could be used to alter the attitudes of those involved in the negotiations. It may help one to understand previous uses of simulation games in both international relations and attitude change research, as well as some ways in which prior research in these areas could be improved.

SIMULATION IN INTERNATIONAL RELATIONS

History

The academic history of international relations is replete with experimental studies

involving simulation games. While great variances in simulation games preclude a universal definition, Dorn (1989) provides a definition that he asserts has “wide (though not universal) support”, and that should be sufficient for the purposes of understanding the present study:

. . . [S]imulation games are activities undertaken by players whose actions are constrained by a set of explicit rules particular to that game and by a predetermined end point. The elements of the game constitute a more or less accurate representation or model of some external reality with which players interact by playing roles in much the same way as they would interact with reality itself. (3)

Simulation games in international studies have traditionally been used for two purposes: to test theory and to educate (Snyder, 1963).

Theory Testing

Simulations' fidelity to reality facilitates researchers' testing the viability of different international relations theories. Myriad studies exemplify this. As examples, games have been used to examine balance of power systems (Kaplan, Bums, & Ouandl, 1960), bargaining (Schelling, 1961), ethnocentrism and decision-making (Druckman, 1968), crises in foreign policy organizations (Hermann, 1969), and political imaging's role in decision-making (Ruge, 1972). All of these studies used versions of perhaps the most famous international relations simulation, the Inter-Nation Simulation (INS).

INS features multiple nations staffed by two human decision-makers apiece. Each decision-maker is either an “internal decision-maker” or an “external decision-maker.” The internal decision-maker enjoys final say over all of the nation’s policies, domestic and foreign, while the external decision-maker carries out diplomatic actions. Every nation has its own set of goals. The decision-makers in a nation have to achieve its goals to stay in office (Guetzkow, 1963).

Decision-makers can use their resources internally or externally. Internally, they can

bolster their strength so as to increase their odds of remaining in office. Externally, they can use their resources either as aid or strategic strength (which can be applied for activities like intimidating other nations). Nations are also free to form alliances or conduct wars with each other (Guetzkow, 1963).

While these sorts of traditional simulations are still used today (e.g., Beer et al., 1995; Mintz & Geva, 1997), much international relations' research now employs game theoretical models. Instead of relying on human players, game theory simulations utilize computer algorithms as decision-makers. Where the classic simulations allow for a wide variety of actions in an international relations context, game theory simulations isolate single variables for study and limit choices. Game theory simulations enjoy advantages over more robust simulations in terms of internal validity. However, as Williams and I argue (2008b), "game practice" simulations (that is, simulations that attempt to mirror international relations as it is in practice, not in theory) can allow for theory-testing in non-static scenarios that involve much of the uncertainty and many of the interactive variables of actual world politics.

Educating

Simulations can also be used by instructors to teach students. Usually, such simulations are designed to impart knowledge about the specifics of the scenario being gamed. Examples include educational simulations about war crimes trials (Jefferson, 1999), India and Pakistan's dispute over Kashmir (Newmann & Twigg, 2000), the European Union (Zeff, 2003), ethnic conflict (Ambrosio, 2004), and peacekeeping operations and foreign policy decision-making (Shaw, 2004). While anecdotal evidence suggests that these simulations are effective at educating, there are two significant areas in which similar studies could be improved.

First, some of the studies have been atheoretical in their method of educating. The

researchers involved focused on constructing realistic international relations simulations, but did not articulate how the games were built to maximize participant learning. Of the research mentioned earlier, Zeff, Ambrosio, and Shaw explained the educational mechanisms of their simulations via pedagogical theory; Jefferson, Newmann and Twigg did not.

Second, the simulation studies have suffered from a lack of objective measures of participant learning outcomes. Typically, they have relied on the aforementioned anecdotal evidence of learning, such as participant self-reports (e.g., “I felt like the game taught me a lot”). Of the five studies reviewed, all relied on such measures to judge the educational effectiveness of their international relations games.

ATTITUDE CHANGE AND SIMULATIONS

History

Research on simulations’ ability to change attitudes has been marked by two divergent bodies of work. Some scholarship argues against the contention that simulations can be effective at such tasks (Cherryholmes, 1966; Garvey & Seiler, 1968). Other academic work (Olivas & Newstrom, 1981; Bredemeier, Bernstein, & Oxman, 1982) arrives at the opposite conclusion. Of particular importance to this paper is a line of research in the latter group by Robert Williams (Williams, 1980; Williams, McCandless, Hobb, & Williams, 1986; Williams & Williams, 1987).

The Williams’ experiments were based on a historical fiction simulation game that featured feuding nobles. Participants read about the nobles prior to beginning the game. Among those they read about was a villainous noble. Subjects then rated their opinions of each noble on Likert scales. During the simulation itself, participants played the role of the villainous noble. At the end of the simulation, they once again indicated on Likert scales how much they liked or

disliked each noble. Participants' attitudes towards the villain increased significantly ($p < .05$) in a favorable direction across all studies. Williams explained the shifts in attitude through what he called Identification Theory. According to Identification Theory, game players' attitudes would change if they identified at an emotional level with the character or side they represented in the simulation.

Recognizing the mixed results in the overall literature, Schumacher (1997) maintained that what was needed was a theory that could explain how games could be designed to produce attitude change consistently. Williams and I attempted to answer this call through the development of Multiple Identification Theory (MIT). We designed MIT to incorporate the cognitive and behavioral aspects of attitudes (Eagly & Chaiken, 1998) that Identification Theory did not address.

Multiple Identification Theory

MIT posits that a simulation can change attitudes if it fosters three different types of identification within players. These levels of identification correspond to the affective, cognitive, and behavioral dimensions of an attitude.

Affective Identification

Affective identification represents an evolved form of Williams' original Identification Theory. If players affectively identify with the simulation experience, then they care at an emotional level about the game's outcome. Players seem to possess a natural competitiveness that prompts them to care about winning games anyway. However, simulations can further induce this sort of identification if they include significant rewards for the winning teams.¹

¹ It should be noted that these rewards are not "artificial" since the outcome of the game *should* matter, just like the outcome of the experience being simulated *does* matter in "real life."

If players affectively identify with the simulation, then their state of emotional arousal makes it more likely that they will retain what they are being taught (Sousa, 1995). The players' investment in the game's outcome also increases the odds that they will learn useful lessons from it. As opposed to players who treat the simulation flippantly because they do not care about its result, players who want to win take the actions they believe will give them the best chance of emerging victorious. This realistic approach to game-play maximizes the transfer of players' simulation experiences to their normal lives.

Cognitive Identification

Cognitive identification refers to players' associating the structure, processes, and results of the simulation with reality. Achieving cognitive identification entails more than creating a simulation that its designer considers "accurate." The realistic nature of the game must be made apparent to players during the course of the simulation. The facilitators of the game perform a crucial function in this regard, highlighting the relationship between the simulation and reality both during play and in the post-play debriefing.

If players do not view the game as being realistic, then while they may learn what it takes to win it, they are unlikely to transfer its lessons to other settings. On the other hand, those who identify the game with reality believe that what they see work and not work in the simulation is like what works and does not work outside of the game. They are likely to adjust their attitudes accordingly.

Behavioral Identification

Attitude change is enhanced when players believe they have been allowed to act as they wished within the simulation. To assure that this is the case, the simulation must afford players the freedom to formulate different approaches to play, test them out, and witness the results. If

players are only allowed limited strategic options, then they are less likely to view their choices in the simulation as significantly correlating to those they would make in the outside world (e.g., “In real life, I would have done *this*, but the game didn’t allow me to try it”). Conversely, players who feel they can make their *own* choices and implement their *own* strategies will learn at a personal level what behaviors in the game are fruitless and which are fruitful. Having “lived” their actions, they are more likely to apply the feedback they receive to their regular lives. In the post-game debriefing, those directing the simulation can facilitate this process by discussing players’ in-game freedom to act with them.

Previous Research with MIT

OCEAN WIND study (Williams & Williams, 2007)

OCEAN WIND is an MIT-designed game that simulates the historical conflict between European settlers and Native Americans. The participants in this experiment assumed the role of six different Native American tribes, while the game leaders handled the actions of the Europeans through charts and dice. Players filled out questionnaires before starting the game that measured their attitudes towards cooperation and competition in conflict situations. They played the game, debriefed with the game directors, then played the game and debriefed again. After the simulation experience ended, participants completed attitude questionnaires for a second time. Additionally, the experimenters surreptitiously tracked their cooperative and competitive behaviors in the game. Dependent *t*-tests demonstrated that subjects’ responses on the attitude questionnaires significantly changed ($p < .01$) in a cooperative direction. Additionally, players’ in-game behaviors shifted from largely competitive to universally cooperative.

Initial CULTURE & CREED Study (Williams & Williams, 2008a)

The CULTURE & CREED game was also designed according to MIT. CULTURE & CREED simulates an international conflict scenario based around the Middle East. Players in CULTURE & CREED are divided into eight different teams that represent actual states or groups of states: the EU3 (“European Union 3”: Britain, France, and Germany), Iran, Iraq, Israel, Russia, Syria, Turkey, and the United States. The teams are situated at different tables with charts and information sheets for their teams. The game director stands at the front of the room with his own charts and a scoreboard. These teams have different abilities that correspond with the real life abilities of the states they represent. This realism is in keeping with the necessity of producing cognitive identification in players; it represents an improvement over OCEAN WIND, in which generic teams enjoyed equal attributes.

Each team begins CULTURE & CREED with a description of how it gains and loses victory points in the game, along with a description of its resources. Resources include power chips (used to take political actions); economic tokens (representing oil and goods and exchanged among teams to earn victory points); military tokens (of different numbers and strengths); and power cards (utilized for special actions such as nuclear strikes and bombing raids). A map depicts the different states in the simulation. Accompanying the map are playing areas for large scale issues (recognition of a right to exist for Israel, formation of a Palestinian state, and so on). Players use power chips to help determine these issues, the outcomes of which have ramifications for many or all teams in the game.

Each turn of the game consist of two different phases. In the first, or “action phrase,” representing one year of time, each team in the game take actions and earns or loses victory points. In the second phase, representing four intervening years, players see further results of

their actions and experience adjustments in their victory point totals accordingly. Following three successive turns, the game directors consult a posterity chart that projects outcomes 25-50 years in the future based on results up to that point. Teams gain or lose additional victory points based on the outcomes obtained from this chart.

After the posterity phase, any team with a positive victory point total is declared a winning team, with the team finishing with the highest positive total (if any) declared the “grand winner.” All teams that finish in negative point totals lose the game. It is possible for all teams to win, for all teams to lose, or for some combination of winners and losers to emerge.

Affective Identification in CULTURE & CREED

In “real life,” the leaders of states care about how their states fare in international relations. It is important then that a simulation of international relations promotes affective identification so that players care about its outcomes. The CULTURE & CREED simulation attempts to achieve affective identification through its end-game rewards mechanisms.

If participants in the CULTURE & CREED study are students, then players should be told that a significant amount of extra credit points are tied to teams in the game emerging victorious. The “grand winner” team should believe they will receive an even greater amount of extra credit points. Conversely, players should be told that teams that lose may still receive some extra credit points, but of an amount that makes winning the game significantly more advantageous.

Cognitive Identification in CULTURE & CREED

To promote cognitive identification with participants, the nature of CULTURE & CREED should maintain a high fidelity with the nature of actual international conflict. The

game's design reflects four important social psychological dimensions of international conflict, as outlined by Kelman (2007).

Needs & Fears

Kelman writes that international conflict is motivated by “collective needs and fears” (64). The state, Kelman argues, acts as an aggregating body for the needs of the individuals comprising it. As such, states fear the loss of both material and non-material items that they believe they need. Materially, states may care about items like money, good, oil, and territory. Non-materially, states may desire items like security, identity, and autonomy. These material and non-material needs are often related. For example, a state's desire for territory (material) is likely related to its desire for security and identity (non-material). If a state loses some of its territory, its security and identity are threatened, in perception if not literally. Protracted conflicts between identity groups can become existential in nature, in which each party “sees its very existence as a national group at stake in the conflict” (65).

The mechanisms of CULTURE & CREED reflect these collective needs and fears. In the game, many states need to acquire oil in order to avoid losing points. A state will also lose victory points if an enemy wins some of its territory in battle. With regard to security and identity, the Israeli team will gain or lose points depending on whether other teams acknowledge its right to exist. Teams can be the recipients of such devastating assaults in the game (e.g., nuclear weapon strikes) that they incur point losses from which they can essentially never recover, the in-game representation of an existential conflict.

Escalatory Relations

International conflict, according to Kelman, also has an “escalatory, self-perpetuating dynamic” (78). Participants in significant conflicts tend to form images of themselves and their

enemy that glorify their own side while demonizing their foe. This dehumanization exacerbates the difficulty of empathizing with the enemy. As a result, actions that one side views as defensive are often viewed by its enemy as preparation for aggression. This can lead to “tit-for-tat” arms races in which different sides in a conflict increase their military might so as to make themselves more secure. However, because all sides augment their arms and each side views its virtuous self as a potential victim of the devilish enemy, all sides find themselves less secure, both in reality and in perception. They also become absorbed enough in the conflict and their views of the others in the conflict that they may miss opportunities that present themselves for conflict resolution.

This dynamic is present in the structures and processes of CULTURE & CREED. As per Heralides’ (1989) and Abu-Nimer’s (1996) depiction of Middle East conflict, the best possibility for longterm success in the game comes from all states working together. However, as in real life, states find it difficult to escape conflict once they are engaged in it. Driving the self-perpetuation of conflict in CULTURE & CREED is the “cascading results system,” in which results appear like a series of cascading waves. In this system, the longterm payoffs for cooperation are not easily seen, while the short-term benefits of competing are more readily apparent.

The initial results of the cascading system come during the first phase of each turn, the Action Phase, which represents one simulated year. This phase contains three subphases. In the first subphase, players may use their power chips to work for or against the resolution of large scale, region-wide issues, or to assert diplomatic control over non-player-controlled Middle Eastern states. In the second, teams will gain and lose points based on their trading of economic tokens and the oil needs of their states. In the third and final subphase, states may take military

actions against each other. Players can often secure more points for themselves in the short-term by ignoring cooperative attempts at solving large scale issues and focusing on the use of military attacks and diplomatic intrigue against other states. Competitive actions during this phase visibly increase a Hostility Index featured in the game, but the Index's effects are not scored at this point.

During the second wave of cascading results, however, the problems in this short-term strategy begin to manifest themselves. The results during the Intervening Years are significantly influenced by the Hostility Index. A higher total on the Hostility Index increases the likelihood of violent events (terrorism, assassinations, and so on) that have negative point consequences for many or all teams in the game.

This cycle of an Action Phase followed by an Intervening Years phase occurs three consecutive times in the simulation. Over the course of the game, as the conflict drives more and more teams into negative victory point totals, players grow increasingly desperate in their attempts to reverse their misfortunes. Meanwhile, those states still in positive totals wish to keep them. The conflict having become entrenched and the teams' views of each other as enemies having been formed and reinforced, players typically behave like the decision-makers Kelman describes. Foregoing opportunities for cooperative resolution, players continue to view their own state's well-being as contingent on their competitive success against other states. Ironically, the perpetuation of the conflict leads many teams further away from positive point totals and thus, seems to increase their feelings of insecurity over the game's outcome.

Players do not fully realize the results of their actions until the Posterity Phase, which follows the three cycles of Action/Intervening Years Phases and projects results 25-50 years in the future. A final and significant wave of outcomes and point gains or losses occurs during this

phase. Results in the Posterity Phase are determined largely by the level of the Hostility Index, the number of large scale issues resolved cooperatively, and the number of nuclear attacks in the game. If teams have played the game cooperatively, then longterm results will tend to indicate a peaceful and stable Middle East. Consequently, it is likely that all teams will finish the simulation in positive points. On the other hand, if teams were unable to escape their self-perpetuating conflict, then the posterity results will likely entail continuing years of destruction and violence. As a result, it will be very difficult for any team to finish the game with a positive point total.

Intersocietal Elements

Kelman contends that international conflict “pervades the whole society and its component elements” (69). The political divisions within a state can work to constrain the actions of the state’s leaders. As an example, Kelman offers that actors in a state who oppose the government may accuse them of being unpatriotic or disloyal for pursuing policies of reconciliation with other states. Additionally, actors independent of the government can influence the interstate conflict in ways that help resolve it or exacerbate it.

These intersocietal elements are present in a few different ways in CULTURE & CREED. In some cases, the gains and losses in points for a state’s actions reflect the pressure exerted on the state’s government from interest groups and citizens in the state who wish for a different outcome. For example, if the Israeli team works to establish a Palestinian state, Israel will experience an immediate drop in points. This loss represents the censuring of the government by “hard-line” elements in the Israeli state who do not wish for a Palestinian state to be established.

CULTURE & CREED also features nongovernmental actors who influence conflict. The Intervening Years phase considers the climate among many different elements of Middle Eastern society. As stated, if the players have created a culture of cooperation during the Action Phases, the various elements of Middle Eastern society are likely to behave cooperatively during the Intervening Years. On the other hand, dissent and violence during the Action Phases breeds non-state-sanctioned violence during the Intervening Years; nongovernmental actors may augment the conflict through terrorist attacks and assassinations.

Mutual Influence

A state “seeks to protect and promote its own interest,” Kelman contends, “by shaping the behavior of [other states]” (71). States may use a mix of behavioral reinforcement techniques. They hope to influence others to support their positions in conflicts with the promise of rewards for doing so. Positive reinforcement of this sort includes “economic benefits, sharing essential resources, international approval, integration in regional or global institutions, or a general reduction in the level of tension” (72). A state may also punish those that threaten to or do assume positions that the state perceives as working against its interests.

States try to influence each other with reinforcement and punishment in CULTURE & CREED. Many of the positive incentives are like those Kelman describes. Economically, for instance, the EU3 may aid another team via their economic tokens. In terms of resources, oil producing states can choose to provide oil to states that need it in exchange for monies or perhaps for support in developing nuclear technology. A state may also appeal to other states to help address large scale issues by pointing out that the resolution of the issues will likely lower the Hostility Index, benefitting all teams via victory point gains.

Conversely, a state may try to punish another state if it is not pleased with its actions. Types of punishment include not just military attacks, but economic sanctions and attempts to wrest diplomatic control of non-player-controlled states from the offending state. A particularly vengeful state may sacrifice its own potential gain to damage another state. For example, Iran may benefit from monies derived from selling its oil. However, it may decide to withhold some of its oil from international trade so as to drive up oil's price. This puts a country like the United States in a tough situation. It either must pay extra for oil or incur a loss in points for not ending the Action Phase with enough oil. Iran may calculate that inflicting such a blow to the U.S. is worth a dip in its own revenue.

Behavioral Identification in CULTURE & CREED

If simulation players feel like they are being forced down a path by the game or its directors, it's less likely that they will transfer what they learned from the experience to other settings. Consequently, simulations that hope to teach players should take steps to enhance players' identification with their behaviors in the game as ones that they choose themselves. CULTURE & CREED promotes behavioral identification in several key ways.

First, players are allowed to make a wide-variety of choices in the game.² There are thousands of possible permutations of power chip play, economic actions, military attacks, and so on. Second, players receiving the full CULTURE & CREED treatment in an experiment are able to play the game at least twice. This allows them to try out different strategies in different sessions of the game and see for themselves which tactics work and which do not. Third, after playing the game, the game directors review with players the decisions they made, helping players to understand that they chose their actions themselves.

² Players are not required, nor encouraged to limit themselves to actions that they believe a state's actual leaders would take.

Results from Williams & Williams (2008a)

As in Williams and my previous study (2007), subjects in this experiment completed attitude questionnaires regarding conflict; played the game and debriefed; played the game and debriefed a second time; and filled out the attitude questionnaires again. Dependent *t*-tests revealed significant shifts in players' attitudes ($p < .01$) in a cooperative direction. Players' in-game behavior also changed from being highly competitive to overwhelmingly cooperative. Additionally, when subjects convened for a debriefing 10 days after the end of the simulation, they were asked prior to the debriefing if they had transferred any lessons they had learned from the game to their real lives. 41% of subjects' responses indicated that they had been more cooperative since playing the game.

The experimenters believed that these behavioral manifestations of change stemmed from players' alterations of their attitudes. Players' responses to the questionnaires indicated generalized changes in their attitudes in terms of cooperating rather than competing in a conflict, as well as taking a social view of a conflict rather than an individual view. These new attitudes seemed fundamental to recognizing mutual interdependence in a conflict. The questionnaires also evidenced that players developed new attitudes emphasizing the importance of approaching others in a conflict with truth and trust rather than deception and mistrust. The researchers hypothesized that truth and trust among all sides was critical to the longterm success of attempts at cooperative conflict resolution.

PURPOSE OF THE INVESTIGATION

As previously noted, I intend that the results from this study will have implications for the use of simulations as tools in Track I and Track II diplomacy. I further aspire that this study

will contribute to the literature on international relations simulations as theory-testing and educational tools, as well as serve as a further test of the efficacy of MIT.

Contributions to Literature on Simulations in International Relations

The present study seeks to blend the theory-testing and educational approaches to simulation in international relations while improving upon the deficiencies noted in previous teaching games. With regard to theory-testing, this study intends to test the hypothesis that MIT-designed game can teach the advantages of cooperation over competition in a Middle Eastern conflict scenario. In terms of education, the simulation has a pedagogical bent. Though it does not seek to directly impart factual knowledge, it hopes to teach players the lessons of cooperation. This research will hopefully demonstrate improvements over previous studies with regard to measuring the educational impact of its simulation; the method of assessing learning in this research is both rigorous and objective. Additionally, unlike many previous international relations simulations, this one has not been designed from an atheoretical perspective. Instead, as noted, it has been created to follow the principles of MIT.

Contributions to Literature on Simulations and Attitude Change

Williams and my study (2008) offered improvements over our previous work (2007) in terms of the realism of the conflict simulated, the complexity of the game, and the inclusion of an out-of-game measure of behavioral transfer. However, room for improvement still exists. First, both our studies featured quasi-experimental designs, as they lacked control groups. Second, the previous CULTURE & CREED study's method of assessing behavioral transfer relied on participant self-report. The present study seeks to improve upon the previous MIT research by utilizing a control group (which will receive a "traditional educational experience" of a video and post-video discussion) and including a more sophisticated measure of out-of-game

behavioral transfer. As such, the present study represents an attempt at a more complete assessment of MIT's efficacy.

METHODS

Measuring Attitude Change

This study measured attitude change with scales developed by Williams and me (2007) prior to the first MIT experiment. These scales measure attitudes towards conflict in terms of cooperation vs. competition; truth and trust vs. deception and mistrust; and taking a social vs. individual view of a conflict. The construction and validation of the scales involved a multi-step procedure.

First, students from a suburban Midwestern community college and an AP high school class submitted statements that they thought would reflect the sentiments of people who fell on each dimension of the different scale (e.g., statements for people who would favor cooperation and separate statements for people who would favor competition). In an attempt to establish content validity for the scales, the same students rated each descriptor on a Likert scale (1-5) as to how strongly a person who made the statement would believe in a given dimension. For example, on descriptors related to being truthful and trusting in a conflict, a student who rated a descriptor as a "1" on the Likert scale felt that a person who made such a statement would not believe in being truthful and trusting. Conversely, a rating of "5" meant the student thought the descriptor was strongly indicative of a person who believed in being truthful and trusting. Only items with a mean of 3.8 or higher were selected by the experimenters for the final instrument.

The remaining statements for each dimension were combined into a new instrument. Different students from the same institutions completed this questionnaire. These students were

asked to rate on a Likert scale (again 1 {low} to 5 (high)) how much they agreed with each statement. The experimenters utilized independent *t*-tests to compare the difference on each item's rating between the bottom 25% (most competitive) and top 25% (most cooperative) of test-takers. Only statements with significantly different scores on the *t*-tests ($p < .05$) were used for the final experimental instrument.

Pilot Control Group Study

Before starting the formal experiment, I administered a test measuring the effects of a documentary, *The Road to 9/11* (Streeter, 2005), on attitudes towards conflict. *The Road to 9/11* covers Middle East conflict since World War I. Subjects ($n = 36$) were students in political science courses at a large Midwestern public university. They responded to the attitude questionnaires before and after watching the documentary. Dependent *t*-tests did not indicate a significant change in their attitudes.

Students in the pilot study did not participate in a post-treatment discussion. For the experiment proper, both the experimental and control subjects participated in a post-treatment discussion. If both groups' attitudes changed, then it would indicate that discussion may be the critical variable in attitude change. Conversely, if control group attitudes remained unchanged while experimental group attitudes were altered, it would suggest that the total simulation experience was responsible for attitude change, rather than mere interaction in a discussion.

Procedures

Students in psychology and history courses at a suburban Midwestern community college were told that they could earn up to 15 extra credit points each for either writing an essay or participating in an experiment about conflict and simulation games.³ In total, 71 students signed-

³ I received approval for this experiment from the University of Kansas' Human Subjects Committee.

up for and participated in the experiment. The following week, subjects in the experimental group met in the afternoon on two consecutive days for three hours each session. Subjects in the control group met for three hours each session on those days in the evening.⁴

When subjects arrived for the experiment, I explained to them that I was interested in their existing opinions on conflict and asked them to fill out the three attitude questionnaires previously discussed. Once subjects were finished, as part of the deception, I informed them that the experiment concerned their ability to retain information about Middle East conflict. Subjects in both the experimental and control conditions were randomly assigned to eight teams of approximately four to five students apiece. From here, the first sessions for the control and experimental groups differed.

Subjects in the control group sat with their teams and watched the *Road to 9/11* documentary. Conversely, the teams in the experimental group were introduced to the CULTURE & CREED game's rules and procedures and assigned to states within it. The experimental subjects were also informed that they would receive six extra credit points apiece for merely playing the game, but 15 apiece if their team won and 18 if their team was the "grand winner." They were told that winning the game meant finishing in positive points, with the "grand winner" team being the one that finished in the highest total of positive points. Those teams that finished at zero or in negative points would lose the game and the players on them would receive the minimum of six extra credit points apiece.⁵

⁴ Because some subjects could only play the game in either the afternoon or the evening, random assignment of subjects did not occur. However, subjects were not aware when they signed up for the experiment of any differences between the sessions.

⁵ In reality, all participants eventually received 18 extra credit points, but as per the tenets of Affective Identification, it was important that they *perceived* that their performances in the game mattered.

Following the documentary viewing for the control group and the game-play for the experimental group, both groups participated in post-exercise discussions. I used as similar of post-exercise discussion questions for the two groups as possible. The sessions ended with players responding to questions about the Middle Eastern conflict they witnessed in the game (or watched in the video). I did this to bolster the façade that the experiment was about their ability to retain information.

For the second day of the experiment, control group subjects began by filling out the three attitude questionnaires for the second time. In this case, the questionnaires measured the effects of the traditional educational experience on their attitudes towards conflict. After completing the questionnaires, the control group subjects were introduced to and played the CULTURE & CREED game. The instructions they received were the same as for the experimental group, except that the control group was told that while the simulation they were going to play was similar in some ways to the one experimental group subjects played, it also contained significant differences. While this was not true, I said it as a precautionary measure in case control group subjects had heard anything about the game from the experimental subjects. I emphasized to them that was the game was designed to be realistic and that it contained many of the geopolitical conditions, goals, and resources highlighted in the documentary they watched.

Control group subjects all finished the game in negative points, and thus, all lost the game. I reminded them that this meant they would receive just six extra credit points apiece. Afterwards, they completed the attitude questionnaires for the third time. I then informed that although they had all lost the simulation, I had decided that they would receive 15 extra credit points apiece for their participation, with the highest performing team receiving 18 points per

player. This was a necessary deception to maintain the integrity of the post-simulation measure of behavioral transfer.

The experimental group subjects began day two of the experiment by playing CULTURE & CREED for a second time. In their second play of the game, all experimental teams finished in positive points, winning the simulation. They were reminded that all teams that had finished as winners would receive 15 extra credit points per player, while the “grand winner” team would receive 18 per player. They then completed the attitude questionnaires for a second time.

Post-Game Behavioral Measure

When the subjects returned to their psychology and history classes on the day following the experiment, they were told that there was a problem with the assignment of their extra credit points. Participants were informed that the community college administration decided that too many extra credit points were being awarded in the study, as they had mistakenly believed that only six extra credit points would be awarded per participant. The professor stated that he had argued to the administration that the students had expected more, so the administration agreed that it would accept the assignment of a total of 700 extra credit points. The students were told that if everyone who participated in the study agreed to take 10 points instead of 15, the final number would be below 700. However, the participants were also told that since they “had earned them,” they could take as many extra credit points as they wished up to 15 apiece, and if the final aggregate number was below 700, each subject would receive the amount of extra credit points she or he wrote down. Conversely, if the total number was 700 or more, each subject would receive only six extra credit points. This *in vivo* measure was used to determine if subjects in the experimental group would be more likely to opt for 10 extra credit points or fewer (and thus, be “more cooperative”) than subjects in the control group.

Two days later, subjects were informed that they would all, in fact, receive 18 extra credit points apiece and were fully debriefed as to the nature of the experiment.

RESULTS⁶

Measures of In-Game Behavioral Change

Aggressive Actions

The game directors tracked the number of chips played for aggressive activities during both the control and experimental groups' game play. Aggressive military actions (bombardments, terrorist assaults, wars) were undertaken during the control group's simulation play and the experimental group's first play, but not during the experimental group's second play. Table 1 displays the chip play on aggressive activities for all game trials.

Table 1

Aggressive Actions during Simulation

Aggressive Actions	Control Group	Experimental Group (Game 1)	Experimental Group (Game 2)
Political Battles	2	8	6
Attacks (bombardments or terrorist assaults)	4	3	0
Wars	1	3	0
Nuclear Strikes	0	0	0

Resolution of Large Scale Issues

Reaching a successful cooperative resolution required addressing the large scale issues featured in the game. These issues included: the formation of a Palestinian state (needed to be resolved once); the recognition of a right to exist for Israel (once); a pledge of no offensive military

⁶ As the initial CULTURE & CREED study (Williams & Williams, 2008) evidenced no significant differences in outcomes based on gender, gender was not considered when assessing the results for this experiment.

actions by the most powerful states in the game (needed to be resolved turn-by-turn); a pledge to not use nuclear weapons (turn-by-turn); and a pledge not to employ terrorist strikes (turn-by-turn). In their second play, the experimental group proved much more successful at resolving the issues than they did in their first play. They also enjoyed greater success at resolution than the control group. Table 2 features the number of chips spent for each issue across conditions, both as raw numbers and as percentages of number of chips needed to resolve the issue.

Table 2
Resolution of Large Scale Issues

Issue	Control Group—Chips Spent (% of Needed Number)			Experimental Group (Game 1)—Chips Spent (%)			Experimental Group (Game 2)—Chips Spent (%)		
	Turn 1	Turn 2	Turn 3	Turn 1	Turn 2	Turn 3	Turn 1	Turn 2	Turn 3
Palestine	0	5 (45.5%)	11 (100%)	0	11 (100%)	*	11 (100%)	*	*
Israel	0	0	12 (100%)	0	0	0	12 (100%)	*	*
Military Intervention	0	7 (100%)	7 (100%)	0	0	7 (100%)	7 (100%)	7 (100%)	7 (100%)
Nukes	0	0	0	0	0	0	0	0	6 (100%)
Terrorists	0	0	0	0	0	14 (63.6%)	0	22 (100%)	22 (100%)
Total Chips Spent Per Turn	0	12	30	0	11	21	30	29	35
Total % of Needed Chips Played Per Turn	0	20.7	51.7	0	19	44.7	51.7	82.9	100

* = Issue resolved once; no further chip play necessary.

Measures of Generalized Attitude Change

Questionnaires

Equivalence between Groups: *t*-tests comparisons of the experimental and control groups' questionnaire responses reveal no significant differences between them on any of the three questionnaires at the beginning of the experiment. These data are displayed in Table 3.

Table 3
Group Questionnaire Responses at the Start of the Experiment

	Questionnaire 1	Questionnaire 2	Questionnaire 3
Experimental Group <i>Ms</i>	99.38	105.37	93.20
Control Group <i>Ms</i>	97.57	108.88	95.50
<i>p</i>	.60	.26	.51

Attitude Change from Traditional Educational Treatment: The control group's scores from their first and second completions of the questionnaires can be compared to determine if the video and post-video discussion were effective at changing attitudes. *t*-tests (Table 4) indicate no significant shifts in attitudes.

Attitude Change from Full Simulation Treatment: Participants in the experimental group should have evidenced change on the questionnaires if the simulation experience shifted their attitudes. Comparisons via *t*-tests (Table 5) between their scores on the questionnaires at the start of the experiment and the end of the second game demonstrate significant changes. Robust effect sizes (as measured by r_{pb}^2) are also noted.

Table 4

Dependent *t*-Tests of Attitude Questionnaires—Control Group (Video)

Questionnaire	<i>n</i>	Pre-Video <i>M</i>	Post-Video <i>M</i>	<i>df</i>	<i>t</i> -value	<i>p</i>	r_{pb}^2
1 (Cooperation vs. Competition)	34	97.59	98.09	33	.29	.776	.003
2 (Truth and Trust vs. Deception and Mistrust)	34	108.88	105.12	33	1.96	.054	.057
3 (Social vs. Individual View)	34	95.50	97.26	33	1.12	.271	.037

Table 5

Dependent *t*-Tests of Attitude Questionnaire—Experimental Group (Full Sim. Experience)

Questionnaire	<i>n</i>	Pre-Games <i>M</i>	Post-Games <i>M</i>	<i>df</i>	<i>t</i> -value	<i>p</i>	r_{pb}^2
1 (Cooperation vs. Competition)	37*	99.38	114.92	36	6.81	< .0001	.563
2 (Truth and Trust vs. Deception and Mistrust)	35	105.37	119.37	34	5.95	< .0001	.510
3 (Social vs. Individual View)	35	93.20	108.09	34	5.85	< .0001	.502

*Note: The discrepancy in the experimental group *n* stems from two subjects who, on the first day of the study, filled out Questionnaire 1, but failed to complete Questionnaires 2 and 3.

Attitude Change from Partial Simulation Treatment: Though the control group did not receive the full simulation treatment (playing the game twice), it is possible that their attitudes changed

from playing the game just once. The differences in their scores from the second to the third time they completed their attitude questionnaires suggests cognitive attitude change occurred, though the effect sizes were not as impressive as the experimental group's. Table 6 displays these data.

In Vivo Behavioral Change: If participants' attitude change generalized to behavior change beyond the scope of the simulation, then one would expect the shifts to evidence themselves in the out-of-game behavioral measure. A "cooperative act" was defined as a participant settling for 10 extra credit points or fewer, while a "competitive act" was defined as subject opting for 11 extra credit points or more. Chi-square tests (Table 7) demonstrate that a significant number of people in the experimental group, but not in the control group chose to act cooperatively instead of competitively.

Table 6

Dependent *t*-Tests of Attitude Questionnaires—Control Group (Sim. Experience)

Questionnaire	<i>n</i>	Pre-Game <i>M</i>	Post-Game <i>M</i>	<i>df</i>	<i>t</i> -value	<i>p</i>	r_{pb}^2
1 (Cooperation vs. Competition)	34	98.09	110.35	33	3.28	< .01	.246
2 (Truth and Trust vs. Deception and Mistrust)	34	105.12	112.82	33	2.34	< .05	.142
3 (Social vs. Individual View)	34	97.26	104.21	33	2.04	< .05	.112

Table 7

Chi-Square Tests of *In Vivo* Measure of Behavior Change

Condition	<i>n</i>	Cooperative Participants (took ≤ 10 extra credit points)	Competitive Participants (took $11 \geq$ extra credit points)	χ^2	<i>p</i>
Experimental	30	22	8	6.53	.01
Control	29	18	11	1.69	.19

DISCUSSION

The experimental group's second play of the game (E2) evidences striking differences from their first game play (E1) and the control group's game play (C1). E1 and C1 featured 11 wars, bombardments, and terrorist attacks between them; E2 featured none. E2 players were much more vigorous and successful at consistently resolving large scale issues than E1 and C1 players. The in-game behavioral similarities between E1 and C1 and the differences between them and E2 suggest that the game was successful at changing behaviors towards international conflict in a way that the documentary and accompanying discussion were not.

According to the questionnaires, the control and experimental groups did not significantly differ in their attitudes towards conflict at the start of the experiment. After receiving the full simulation treatment (playing the game twice), their questionnaire scores and the out-of-game behavioral measure indicate that experimental group players experienced significant attitude change. Conversely, control group players' questionnaire scores did not change after they watched the documentary and participated in the post-documentary discussion. Their questionnaire scores *did* significantly change after playing the game once, but their attitudes were not altered enough to affect out-of-game behavioral change.

These changes and the lack thereof are consistent with MIT. The control group did not

behaviorally identify with the documentary, and they likely did not affectively identify with it, either. As such, it did not significantly change their attitudes. They appeared to attitudinally identify with the game, and their attitudes changed cognitively (as reflected by the questionnaires). However, the game accounted for small variances in their scores as compared with the experimental group, and their *in vivo* behaviors were not altered. MIT explains this through their inability to play the game multiple times. While control group players saw the problems with competitive behaviors in their game play, they were not able to behaviorally experience the benefits of cooperation. Thus, their attitude change was not as profound. These results have important ramifications for MIT in both attitude change and international relations simulation research.

MIT and Simulations as Attitude Change Devices

Unlike previous MIT studies, this experiment featured a control group and employed an objective measure of *in vivo* behavioral change. That the control group's out-of-game behaviors did not change while the experimental group's did lends further support to MIT's efficacy at changing attitudes via games.

The present study also addresses concerns that the attitude change measured in previous studies was the result either of interaction solely or of a "demand effect" (participants changing their attitudes because they believed the game directors wanted them to do so). The control group players interacted with each other and the game directors led them in discussions highly similar to those of the experimental group. Despite these similarities, the control group's attitudes and behaviors were not altered as significantly as the experimental group's. This leads one to believe that a demand effect was not present, nor was mere interaction among subjects sufficient for change to occur.

The study's support for MIT's effectiveness has implications for many settings in academia and outside of it, including international relations, political psychology, family therapy, conflict resolution in schools, decision-making, medical adherence, and so on. In any setting where persons' attitudes and behaviors do not align with their optimal outcomes, MIT games might be beneficial.

MIT in International Relations

Education

This study improves on previous research concerning international relations simulations as educational devices. Much of the prior work has been atheoretical and relied on student self-reports for assessing learning outcomes. In this experiment, one has substantial and objective evidence (in-game behavior tracking, attitude questionnaires, and an *in vivo* behavioral measure) that a specific theory (MIT) was effective at teaching material (the benefits of cooperation over competition in conflict scenarios). Furthermore, the data indicate that the simulation game was more effective at teaching the material than traditional educational tools: the documentary about conflict and accompanying post-video discussion.

Practice

The most meaningful implications of this research may be for international relations in practice. The assessed changes in attitudes and behavior provide more evidence that MIT games could be used at the Track I and Track II levels of diplomacy to help bring about peace. Diplomats and representatives of state who engaged in MIT games might find their attitudes and behaviors changed towards conflicts; this could help finally resolve intractable conflicts.

Perhaps the most exciting finding is the objective, generalized behavioral change towards conflict among players exposed to the full MIT simulation treatment. In the most hopeful of

scenarios, one could imagine MIT games altering the attitudes of foreign policy decision-makers so that they act cooperatively in not just a specific conflict, but in international conflicts in general. Future research could explore if behavioral change can be realized in-game and *in vivo* for MIT simulations dealing with internal conflicts, which constitute a substantial majority of world conflicts (Hewitt, 2008). If MIT fulfills its early promise, we might find ourselves on the royal road to a more peaceful world.

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