Emotional Change in International Negotiation: Analyzing the Camp David Accords Using Cognitive-Affective Maps

Scott D. Findlay · Paul Thagard

Abstract   This paper uses a new diagramming method, cognitive-affective mapping, to analyze the emotional changes in the 1978 Camp David negotiations that led to a breakthrough accord between Egypt and Israel. We use the technique to model the mental states of the two primary negotiators, Anwar Sadat and Menachem Begin, based on detailed descriptions provided in Jimmy Carter's memoirs. From Carter's account of the emotional states of the Egyptian and Israeli leaders, we generate maps that show how the attitudes of both Sadat and Begin shifted over the course of the deliberations, eventually leading to resolution of a major conflict. Such methods for facilitating recognition and reconciliation of emotional differences between disputants may contribute to movement toward peaceful and satisfying settlements.

Keywords   Emotion · Negotiation · Camp David accords · Cognition · Diagrams · Conflict resolution · Attitudes

1 Introduction

International negotiations are often slow and frustrating, but sometimes they produce breakthrough agreements (Watkins and Rosegrant 2001). Dramatic advances such as the 1998 Belfast accord that brought peace to Northern Ireland are difficult to pro-

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"He who cannot change the very fabric of his thought will never be able to change reality, and will never, therefore, make any progress." Sadat 1978, p. 303.

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duce because they require resolution of intense conflicts between groups of agents with radically different goals, beliefs, and preferences. Overcoming these conflicts requires agents on both sides to revise some of their fundamental assumptions and attitudes.

We propose an account of such revisions as a kind of emotional change, in which the process of negotiation leads agents to revise their attitudes to crucial elements of a conflict. While this account is intended to apply to a wide range of disputes, we develop it here by examining one of the most important negotiation breakthroughs in international relations: the 1978 Camp David accords that led to an enduring peace agreement between Israel and Egypt. This paper employs a new approach to analyzing the differences between negotiating agents using a graphing technique we call *cognitive-affective maps*. Such maps provide a vivid way of identifying the fundamental sources of conflict between competing parties, as well as a way of tracking the emotional changes that sometimes occur as negotiations progress toward agreement. The technique of cognitive-affecting mapping complements an underlying psychological mechanism—emotional coherence—that can produce the changes in goals and preferences that breakthrough negotiations require (Thagard 2006). Emotional coherence arises from a balance of positive and negative values that can be modeled computationally using artificial neural networks.

The aims of this paper are to describe the emotional changes that enabled agreement at Camp David despite a seemingly intractable conflict, to depict the role that Jimmy Carter played as a social facilitator of peaceful resolution, and to introduce a novel method for explaining and facilitating conflict resolution based on theories of cognitive and emotional change. We hope the result is a contribution to the rapidly increasing understanding of the importance of emotional processes for negotiation and conflict resolution (Alexieva 2008, 2009; Barry 2008; Barry et al. 2004; Bazerman et al. 2000; Bizman and Hoffman 1993; Fisher and Shapioro 2006; Forgas 1998; Gordon and Arian 2001; Halperin 2008; Lindner 2009; Long and Brecke 2003; Maiese 2007; Martinovski and Mao 2009; Obeidi et al. 2005; Retzinger and Scheff 2009; Schreier 2002; Shapiro 2002; Stone et al. 2000; Thompson et al. 1999).

2 Camp David

A striking example of success in international negotiation is the 1978 meeting that led to a peace treaty between Israel and Egypt, ending three decades of war. Jimmy Carter hosted the summit, inviting Israel's Prime Minister Menachem Begin and Egypt's President Anwar Sadat along with their respective staffs to his Presidential retreat in Maryland. Our historical and psychological analysis of the summit is largely based on Carter's detailed memoir (Carter 1982), supplemented by reports from other participants (Dayan 1981; Kamel 1986; Quandt 1986; Weizman 1981; for different kinds of analysis, see Hare and Naveh 1985, 1986; Telhami 1990).

The major point of contention during the negotiations was the future of Israeli settlements in the Sinai Peninsula conquered by Israel during the Six Day War of 1967. Sadat claimed that these settlements were illegal and had to be dismantled, and that Egypt could not make concessions on issues of land or sovereignty. On the opposing

side, Begin had a long history of aggressive defense of Israel and saw the settlements as essential to maintaining Israel's presence in the region as well as Israeli identity. Dismantling the settlements would also set a dangerous precedent for other Israeli land claims and would be viewed symbolically as a defeat by the people of his country.

The organization at Camp David allowed for a style of social interaction unusual in international negotiations. Along with the three leaders, only a handful of advisors were invited to the intimate retreat setting. Carter hoped that the cottage feel to Camp David, with walking trails, a pool, a movie theatre, and beautiful scenery, would provide a relaxing and informal atmosphere for the negotiations. In addition, he welcomed the wives of each leader to attend, and had chefs on staff skilled in the preparation of American, Egyptian, and Kosher foods. Explicitly aware of the novelty of his approach, Carter (1982) wrote in his memoirs: "…a new approach, perhaps unprecedented in history. Three leaders of nations would be isolated from the outside world. An intensely personal effort would be required of us. I had to understand these men!" (Carter 1982, 119).

To this end, Carter reviewed psychological analyses of Begin and Sadat that had been specially prepared in the days before Camp David by the Center for the Analysis of Personality and Political Behavior (CAPPB), (Post and George 2004). Requesting to be steeped in the personalities of Begin and Sadat, Carter wanted to know their goals, strengths, personal histories and obligations, political commitments, and how they responded to pressure (Carter 1982; Carter and Richardson 1998). He later gave much credit to these reports as influential in guiding his negotiating tactics and said that his studies of them before the negotiations "were to pay rich dividends." (Carter 1982, 320).

Carter was acutely aware of the role that the emotional psychology of Begin and Sadat played in the negotiations, and he used this knowledge to his advantage to work toward a peaceful resolution. For example, he understood Begin's concern with semantics and attention to detail and became an expert at rephrasing contentious terms and making minor editorial changes to the drafts of the peace agreement. He did not need to bother engaging in these discussions with Sadat since he understood the Egyptian President's preference for peace based on broad principles and willingness to be extremely flexible on almost any detail that would achieve this goal (Carter 1982, 356). After the negotiations, Carter praised the CAPPB profiles: "After spending thirteen days with the two principals, I wouldn't change a word" (Post and George 2004, 271). Carter's endorsement marked a turning point for the importance of this type of analysis that would from then on be considered essential for managing conflict of this nature (Post and George 2004).

Carter believed that being able to meet one on one with the adversaries would be a method more likely to achieve success than the more traditional one relying on television and public speeches (Carter and Richardson 1998). Carter talked of the importance of excluding the press completely from the negotiation process, and of ensuring that neither party would leak anything about the deliberations during their stay. In this way each side could avoid the embarrassment that is inherent in making concessions. His goal was to shift the perception of the negotiation process away from a zero sum game, where each side claims victory or admits defeat on each item as it is settled, and towards a more holistic evaluation of an agreement seen to benefit

all parties involved. Both negotiating parties later also reported assuming that their phones were being tapped—an additional factor discouraging outside communication (Carter and Richardson 1998). Without this confidentiality Carter believed the summit would never have been successful.

Upon the relatively early failure of Carter's attempts to hold discussions with only Begin and Sadat, Carter was able to recognize the complexities of the personalities at Camp David and restructure the meetings to create a social environment more conducive to peace talks. Carter recognized the differing negotiation styles of Begin and Sadat, quickly realizing that it was easier to work with Sadat from the Egyptian side, but with some of Begin's advisors rather than the Prime Minister himself. Foreign Minister Moshe Dayan, Defense Minister Ezer Weizman, and Attorney General Aharon Barak could all be convinced more quickly than their leader and were more effective in changing Begin's mind than an outsider like (Carter 1982, 342). Once the general positions of each country were established, Carter preferred to work directly with Aharon Barak (Israel) and Osama el-Baz (Egypt) when drafting the texts of the agreement, recognizing their superior capabilities and the trust bestowed in them by their leaders (Carter 1982, 387).

3 Modeling Mental States with Cognitive-Affective Maps

In order to understand the mental changes experienced by the key participants in the Camp David negotiations, we need a method for analyzing the cognitive and emotional aspects of the concepts and attitudes that changed. Investigations in cognitive science have increasingly recognized the importance of emotions in decision making and other kinds of inferences (e.g. Damasio 1994; Loewenstein et al. 2001; Thagard 2006; Vohs et al. 2007). Previously, researchers in psychology, computer science, and even political science have used the technique of *cognitive maps* (also known as conceptual graphs, concept maps, and mind maps) to represent the conceptual structures that people use to represent important aspects of the world (e.g. Axelrod 1976; Novak 1998; Sowa 1999). But such maps fail to indicate the values attached to concepts and other representations such as goals, and therefore are inadequate to capture the underlying psychology of conflict. They lack an appreciation of *affect*, which is the complex of emotions, moods, and motivations that are crucial in human thinking.

We will use a new method of cognitive-affective maps to model the mental states of each leader at Camp David that account for their negotiating positions concerning the presence of Israeli settlements in the Sinai Peninsula, which was the major point of contention. The following conventions will be used in these maps (Thagard 2010b). Elements (mental representations) are depicted by shapes:

- Ovals represent emotionally positive (pleasurable) elements.
- Hexagons represent emotionally negative (painful) elements.
- Rectangles represent elements that are neutral or carry both positive and negative aspects.

Straight lines depict relations between elements:

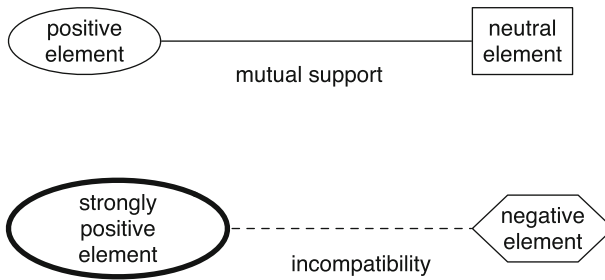- Solid lines represent the relations between elements that are mutually supportive.

Fig. 1 Conventions for cognitive-affective mapping

- Dashed lines represent the relations between elements that are incompatible with each other.

Moreover, the thickness of the lines in the shape represents the relative strength of the positive or negative value associated with it. By mental representations we mean structures or processes in the mind that stand for something, such as concepts, propositions, goals, and images (Thagard 2005).

Figure 1 illustrates the conventions that we will use to depict the mental states of Sadat and Begin based on our interpretation of Carter's descriptions of them. When color is available, as in the computer program EMPATHICA that is being developed to support cognitive-affective mapping, we employ the additional convention that positive elements are displayed in green (like the go signal in a traffic light) and negative elements are displayed in red (like stop).

4 Entering Negotiations

We start by mapping the mental states of the two main participants at the beginning of negotiations. Figure 2 shows a cognitive-affective map illustrating (from Carter's perspective) Sadat's desire to dismantle the Israeli settlements in the Sinai. The large shapes with bolded text represent the incompatible negotiating positions of each party. Surrounding ovals represent mental representations that were emotionally positive for Sadat. He entered the negotiations citing sovereignty and land as two issues that Egypt claimed could not be subject to any compromise. Aside from these, he was willing to make concessions for peace on almost any issue. As a strong leader, Sadat was seen as a man of destiny and was hopeful to act as a saviour in bringing unprecedented peace to the region. In their report prepared for Carter, the CAPPB called this "Sadat's Messiah complex" (Post and George 2004). Sadat also shared a pleasant personal relationship with President Carter who generally supported the dismantling of the settlements. Obviously, we cannot claim to have any kind of direct access to Sadat's state of mind at this time, but the cognitive-affective map should be taken as our best guess at his attitudes based on Carter's reports of interactions with him.

In contrast, Fig. 3 is a cognitive-affective map illustrating Begin's opposite preference to maintain the Israeli settlements in the Sinai when he arrived at Camp David. Begin's primary concern was to ensure the security of Israel in any peace agreement.
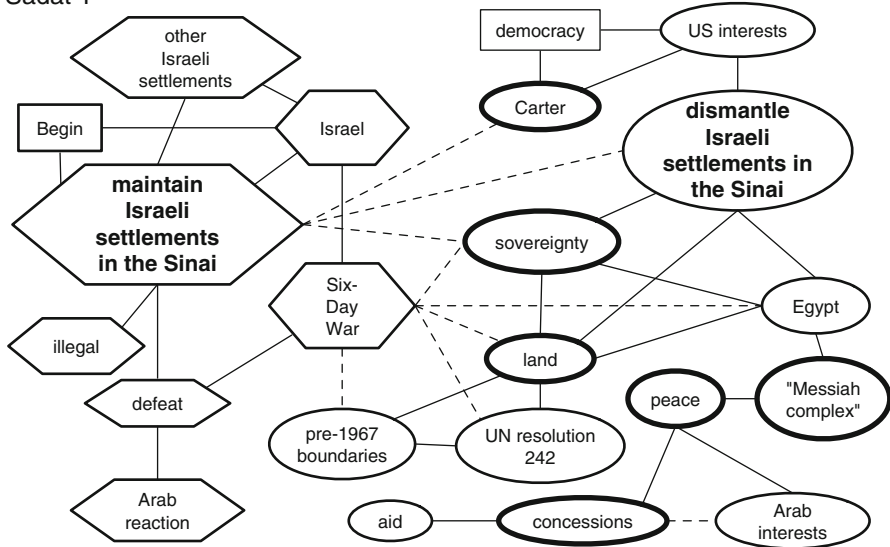
Sadat 1

Fig. 2 A cognitive-affective map modeling Sadat's state of mind as he entered the Camp David negotiations, concerning Israeli settlements in the Sinai. Representational conventions are those shown in Fig. 1
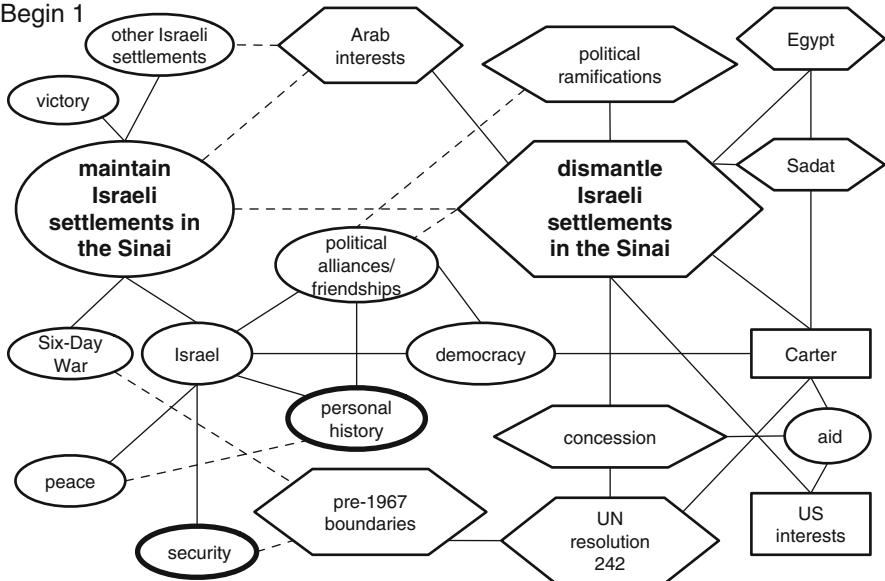
Begin 1

Fig. 3 A cognitive-affective map modeling Begin's state of mind concerning Israeli settlements in the Sinai as he entered the Camp David negotiations. Representational conventions are those shown in Fig. 1

Entering the negotiations, his statements were consistent with his personal history of strong opinions in defense of Israel.

The cognitive-affective maps in Figs. 2 and 3 illustrate the difficult nature of resolving a conflict that is deep-rooted and highly emotional, even if efforts are aimed at solving only one major issue. Notwithstanding Sadat's willingness to make great concessions (which was expressed only vaguely to Begin and the Israelis but secretly as a more explicit final position to Carter), the issue of the Israeli settlements in the Sinai presented an apparently intractable conflict. Sadat believed very strongly that the settlements must be dismantled in order to ensure Egyptian sovereignty of the land (Fig. 2). Begin saw the settlements as essential to ensuring Israeli security and identity, and had a long history of fighting for a strong Israel (Fig. 3). We will now explore the emotional shifts each leader experienced that allowed movement toward mutual endorsement of a novel solution

5 Progression of Negotiation: Sadat's Emotional Changes

In the first two and a half days of negotiation, Sadat's mental state shown in Fig. 2 generated positive emotions such as hope, optimism, and pride. Stressing his intentions to demonstrate patience and fairness, Sadat informed Cater of his willingness to be more flexible than his official initial positions revealed (Carter 1982, 392). Sadat was ready to make concessions to achieve his dream of real peace with Israel (Carter 1982, 340). Sadat was open about his intentions and ready to make concessions on behalf of Egypt as long as they did not concern issues of sovereignty or land: the future of the Israeli settlements in the Sinai was off the table. Egypt interpreted the presence of Israeli settlers in the Sinai as an infringement on Egyptian sovereignty and an illegal claim to land that belonged to Egypt.

Sadat demonstrated some respect towards Begin and the Israeli delegation, but was impatient in dealing with their positions. Sadat expressed concern that Begin was a very formal man and was difficult to approach or understand. Citing a frustrating discussion that took place prior to Camp David concerning attack forces in the Sinai, Sadat even claimed that Begin was unable and unwilling to communicate rationally. Although Sadat's primary goal was to leave Camp David with at least the framework for a peace agreement, his fallback goal was to ensure that a breakdown in the peace talks would reflect poorly on Begin and not himself.

Nevertheless, some pleasant feelings existed between the two leaders and they were even able to share in genuine laughter when Carter joked that Begin would save them all a lot of time by signing Egypt's extreme opening position laid out by Sadat on the second day of negotiations (Carter 1982, 345). Carter's joke helped foster a sense of ease among the leaders at this time, in line with the suggestion that laughter, along with art and ritual, is a type of strategic intervention that can serve as a tool for facilitating conflict resolution (Maiese 2007).

During day three of the negotiations, Sadat entered a new mental state illustrated in Fig. 4, which generated such negative emotions as mistrust and anger. Sadat's previously neutral attitude toward Begin had deteriorated to the point where Sadat claimed to no longer have minimum confidence in him because he had acted in bad faith.
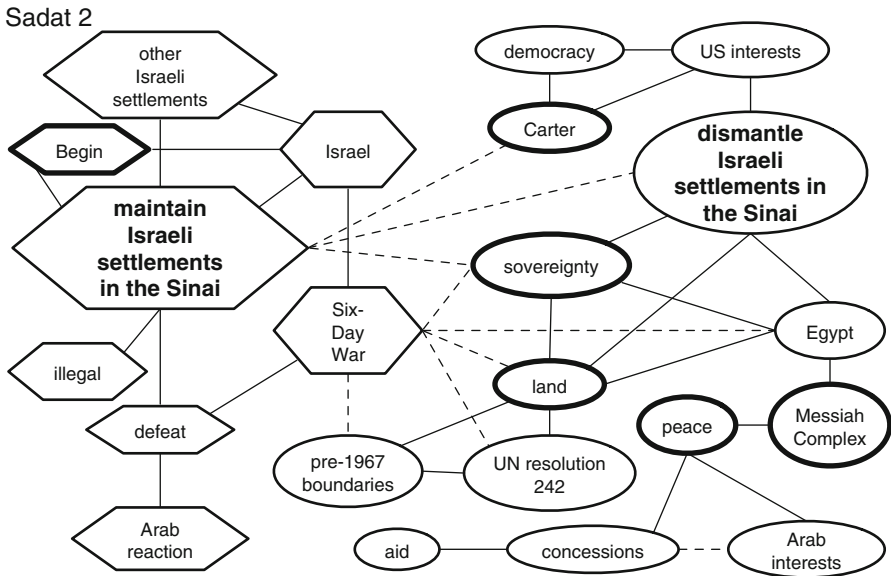
Fig. 4 A cognitive-affective map of Sadat's state of mind from the third to seventh day of negotiations, showing increasingly negative reaction toward *Begin*

Although no evidence of such "bad faith" was explicitly offered, Carter speculated that the root of this mistrust was the expansion of Israeli settlements under Begin's leadership. By day four, Sadat's aides had told a member of the Israeli delegation that they were considering leaving the summit based on knowledge that Begin would never yield on the issue of the settlements (Carter 1982, 365). Nevertheless, according to Carter, "Sadat said that he had no animosity toward Begin or the Israelis, did not wish to put them in an awkward position, and wanted mutual success rather than a victory over anyone" (Carter 1982, 369). In Fig. 4, we represent the Egyptian President's increasingly strained attitude toward Begin as a hexagon. Negative emotions emphasized by Sadat included those of disappointment, anger, and frustration. While making concessions was now less appealing to Sadat, his frustration with Begin had not completely shattered his hopes of achieving peace at Camp David.

Sadat's frustration with Begin continued to mount until it resulted in a marked emotional shift into a third mental state some time around the seventh day of negotiations, lasting until day 11. Figure 5 illustrates this state, which generated emotions such as hostility and anguish. Sadat now claimed that Begin's attitude was preventing him from being as forthcoming on several issues as he would with different Israeli leadership (Carter 1982, 380). This reaction marked a significant shift as the personal clash with Begin had started to outweigh Sadat's flexible attitude and desires for peace. Sadat reiterated his mistrust of the Israelis insisting that they did not intend to sign an agreement nor negotiate in good faith (Carter 1982, 384). He now felt strongly that he was the only leader making concessions.

The Egyptian President's emotional state during this stage was also marked by anxiety and internal conflict. He had grown increasingly wary of his implicit role as
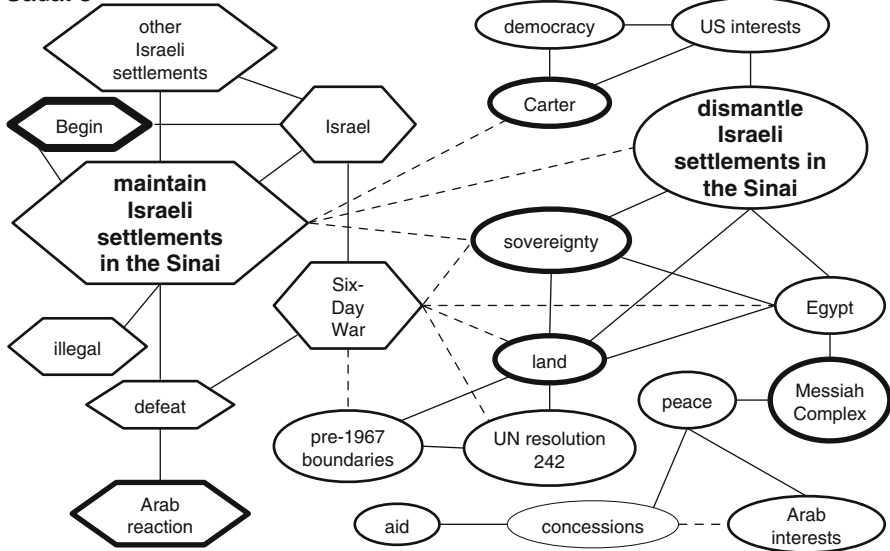
Fig. 5 A cognitive-affective map modeling Sadat's state of mind from the seventh to eleventh day of negotiations. Compared to Fig. 4, elements of increased emotional intensity include *Begin*, and *Arab reaction*, while those of decreased emotional intensity include *concessions* and *peace*

representative of all other Arab nations not present at the negotiations, as well as the Muslim world at large. There was a great deal of dissention among his negotiating team as they were growing concerned over Sadat's complacency with regards to what they perceived to be unfavorable language being incorporated into the agreement by the United States in an effort to appease a more stubborn Israeli delegation (Carter 1982, 389). After witnessing a heated discussion between Sadat and his aides on the eighth day of negotiations, Carter was approached by Sadat who expressed a desire to renege on the language the two of them had agreed to when discussing the status of Jerusalem in any agreement (Carter 1982, 384). This conflict, manifested by Sadat both internally and within his delegation, was overwhelming his strong personal desire to achieve peace. While such desires had been diminished, the conflict had not *totally* dashed his hopes for peace. There was still one instance involving a display of sympathy on Sadat's part when he made several changes to a draft of the peace agreement by Carter so that it would be more pleasing to the Israelis (Carter 1982, 385).

Sadat's next major shift resulted in a furious state illustrated by the cognitive-affective map in Fig. 6. On the morning of the eleventh day of negotiations, upon hearing from Dayan that Israel did not intend to sign *any* agreements, Sadat was ready to abandon Camp David. This action would have dashed Carter's desire for at least a harmonious departure in the absence of an agreement being reached at Camp David. Sadat's threat made Carter very tense and perhaps even desperate. Carter told Sadat that, if he left early, not only would he be violating a personal promise, but would strain relations between Egypt and the United States (Carter 1982, 392). Moreover,
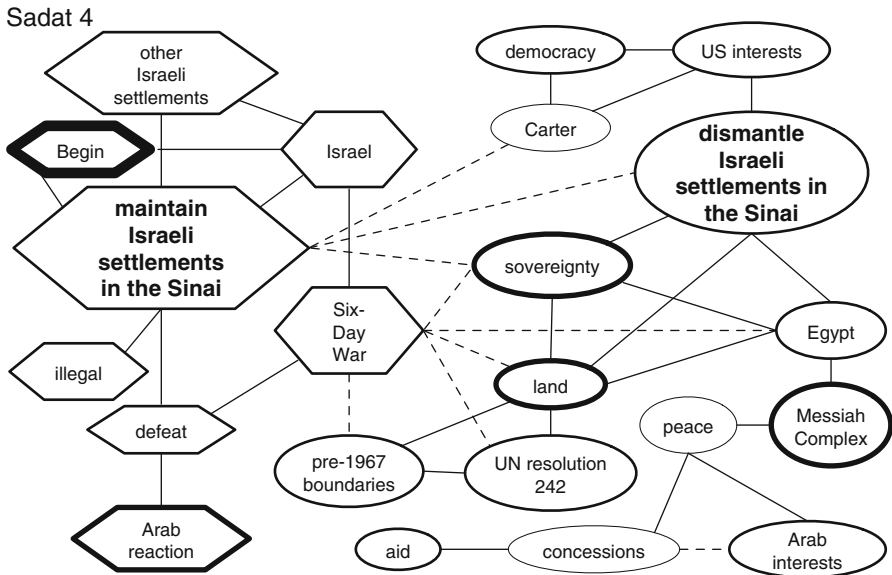
Sadat 4

Fig. 6 A cognitive-affective map modeling Sadat's state of mind on the morning of the eleventh day of negotiations. Elements of increased emotional intensity include *Begin*, while those of decreased emotional intensity include *peace* and *Carter*

an early departure would damage the friendship and mutual trust they had developed. Carter had "never been more serious in [his] life" (Carter 1982, 392).

Carter quickly calmed the Egyptian President and convinced him to stay the course (Carter 1982, 393). The strong personal relationship forged between Carter and Sadat before and during Camp David was integral in preserving the negotiations. This serious conversation with Carter marked another emotional shift that would initiate Sadat's penultimate mental state of the negotiations—one that was marked by trust in and respect for Carter and is illustrated in Fig. 7. Sadat changed his mind primarily based on Carter's promise that any concessions agreed to during Camp David could not be used by Israel as starting points for future negotiations. He was also aware of the implications his departure might have for US-Egypt relations and his country's future political alliances in general. Later in the same day the two Presidents watched the world's heavyweight boxing match without any talk of the negotiations and seemed to be in quite pleasant moods. The next morning, Carter attempted to capitalize on Sadat's trust in him and convince the Egyptian President that very few differences actually remained in the negotiating positions between his country and the Israeli delegation.

6 Progression of Negotiation: Begin's Emotional Changes

Begin also underwent strong emotional changes during the negotiations. Carter's account of the summit, however, does not describe Begin's emotional states as clearly as those of Sadat, to whom Carter was personally closer. Additionally, Begin's more
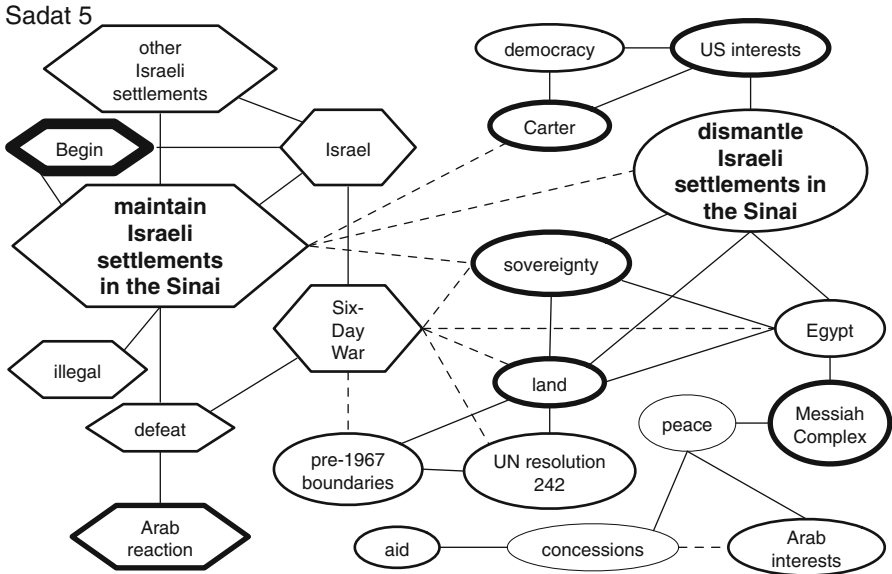
Sadat 5

Fig. 7 Cognitive-affective map modeling Sadat's state of mind from the eleventh to thirteenth day of negotiations. Elements of increased emotional intensity include *Carter* and *US interests*

evasive negotiation tactics offered difficulties in assessing his emotional states throughout the negotiations. Nevertheless, we can identify several emotional changes in Begin during the negotiations.

Like Sadat, Begin's days leading up to the negotiations were filled with emotions such as hope and optimism as well as with some respect for the Egyptian President. In 1977, Begin had extended a formal invitation for Sadat to visit Jerusalem and address the Knesset. This invitation carried a political risk, since Sadat was the commanding officer of an enemy nation that had waged war on Israel as recently as 1973. Begin and Sadat both entered the negotiations with hopes of achieving peace, expressing a desire for their two countries to start a new page and forget past disagreements.

Begin started the negotiations with a formal and business-like attitude. Carter described him as unenthusiastic, well mannered, and even nervous during the first meeting of the three leaders (Carter 1982, 344). In contrast to Sadat, Begin was more concerned with establishing a dialogue for future negotiations than with actually dealing with specific issues while at Camp David. His desire for peace might not have been as strong as Sadat's, possibly because he was less eager to take great political and personal risk. Begin, for example, was eager to avoid the issue of Palestinian autonomy (Carter 1982, 345).

Carter understood that "any change in position made necessary through compromises would be the object of criticism in the open, aggressive, and free political environment existing in Israel" (Carter 1982, 339). Potentially, embarrassment was a very important emotion for the leaders at Camp David, especially for Begin. Carter recognized that Begin had made a great deal of sacrifice, at times even to his personal safety, to develop and defend his strong beliefs, many of which concerned contentious
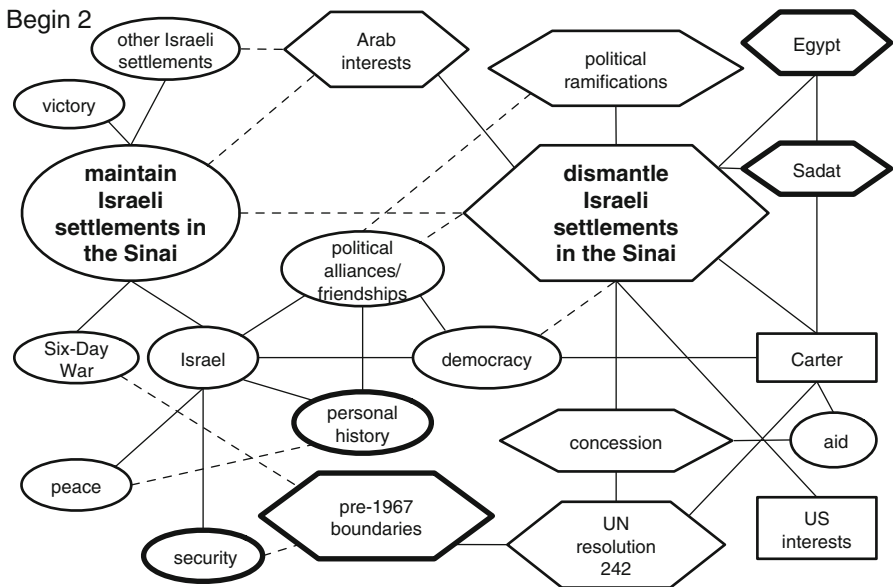
Fig. 8 Cognitive-affective map of Begin's state of mind from the second to third day of negotiations. Elements of increased emotional intensity compared to Fig. 2 include *Egypt, Sadat,* and *pre-1967 boundaries*

issues that would be debated at Camp David. We illustrated Begin's cognitive-affective state entering Camp David in Fig. 2.

Begin's first emotional shift came early in the negotiations, producing a state of mind depicted in Fig. 8. On the second day at Camp David, with Sadat's presentation of Egypt's opening positions, Begin became excited and even somewhat relieved since he perceived the positions to be so unbelievably harsh that they cast the Egyptian leader to the public as completely unreasonable. The next morning Begin was even more irate over the document shouting, "This smacks of a victorious state dictating peace to the defeated!" "This document is not a proper basis for negotiations" (Carter 1982, 347). Heated debates between the two leaders would follow.

According to Carter, Begin had been evasive in his negotiation tactics in the early days of the negotiations, and this behavior had become more problematic. During the third day of negotiations, Carter became angry and almost shouted at Begin, "What do you actually want for Israel if peace is signed?" (Carter 1982, 348). Begin was also evasive on the issue of the resolution of 1967 borders. Begin said that modifications to pre-1967 borders would arise only if no peace plan could be formulated. Carter saw this contention as dodging the issue of sovereignty and unwillingness to propose a real solution (Carter 1982, 348). Carter was also dismayed that Begin seemed unmoved by the unprecedented opportunity for a peace agreement presented by the strength and popularity of Sadat and Begin (Carter 1982, 349).

Begin's emotional state of mind shifted between the fourth and eleventh days of negotiation, as illustrated in Fig. 9. Begin began to show small signs of potential flexibility. He underwent a subtle change in opinion on day four when he shifted from
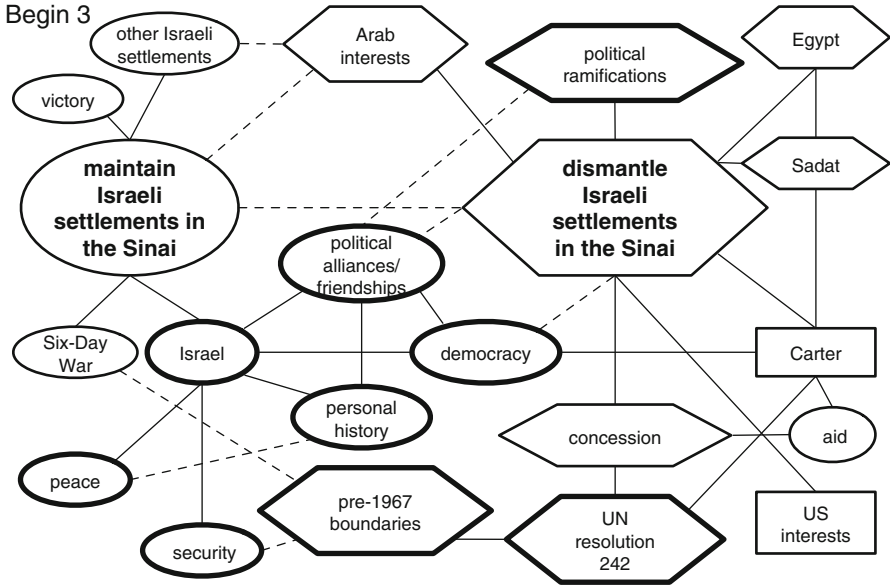
Fig. 9 Cognitive-affective map of Begin's state of mind from the fourth to eleventh day of negotiations. Elements of increased emotional intensity include *political ramifications, Israel, peace, security,* and *political alliances/friendships*. Elements of decreased emotional intensity include *Egypt* and *Sadat*

never permitting the dismantling of the settlements in the Sinai, to "never personally recommending" such a process (Carter 1982, 365). Negative emotions such as embarrassment and pain had surrounded Begin's conception of the political consequences of allowing a dismantling of the settlements. However, Begin now recognized that if he were not personally responsible for this happening, he would be insulated from any possible political ramifications and personal guilt he would otherwise feel. Importantly, Carter was now aware that a potential area of flexibility existed.

In the emotional state shown in Fig. 9, Begin began to approach the negotiations in a much more open fashion. On the sixth day, after being presented with the new American proposal, Begin said he would discuss it with his team and share their reaction in all candor (Carter 1982, 373). The Israelis became much more blunt in communicating their positions. On day eight, Begin said regarding UN resolutions 242's claim of the inadmissibility of acquisition of territory by war: "Israel cannot agree under any circumstances to a document which includes this phrase, and I will not sign it" (Carter 1982, 386). This admission of intent was also accompanied by passion-filled, highly emotional evaluation of the issues being negotiated. After conveying Israel's unwillingness to sign a document based upon resolution 242, Begin became very emotional when discussing the settlements. Mentioning Jerusalem, he quoted a Bible verse: "If I forget thee, O Jerusalem, let my right hand forget her cunning." And then repeated, "Better my right hand should lose its cunning than I should sign such a document" (Carter 1982, 386). He appeared to be honest when telling Carter he wished he could sign an agreement, but he had to be loyal to the will of the Israeli people as their Prime
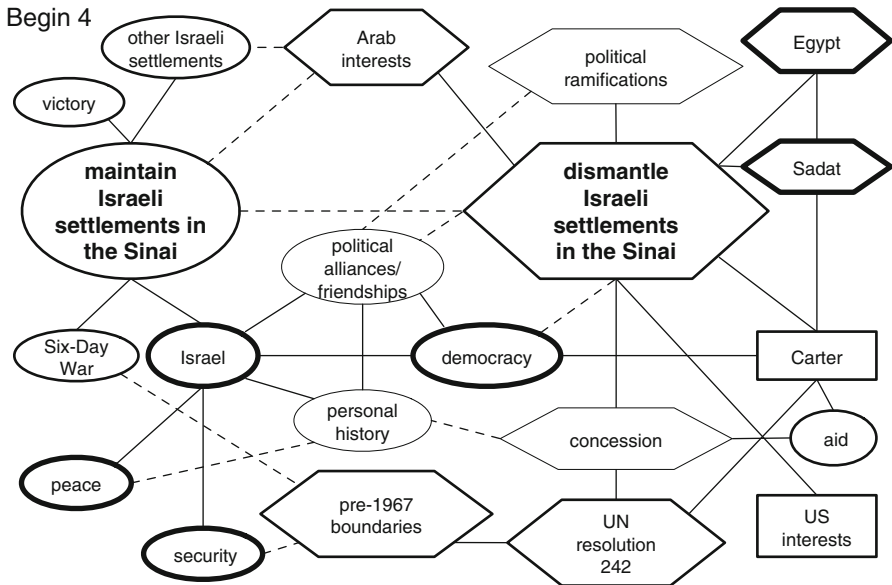
Fig. 10 A cognitive-affective map modeling Begin's state of mind from the twelfth day into the thirteenth day of negotiations. Elements of increased emotional intensity include *Egypt* and *Sadat*. Elements of decreased emotional intensity include *political alliances/friendships, personal history, pre-1967 boundaries, political ramifications, UN resolution 242,* and *concession*

Minister and the principles of democracy in his intention to sign only something they would certainly accept (Carter 1982, 386).

Around the twelfth day of negotiations, Begin entered a new cognitive-affective state illustrated in Fig. 10. Begin's Foreign Minister Moshe Dayan informed Carter on day twelve that the Prime Minister was feeling excluded from the negotiations and had not seen Carter in some time (Carter 1982, 394). Begin suspected that he would soon be forced to abandon some long-held beliefs and make real concessions for peace. This move brought anger and pain to a man who held the reputation of being a strong and often extreme defender of Israel. When Begin was told that Sadat would not negotiate *until* Israeli settlers were removed from the Sinai, Begin shouted words like "ultimatum," "excessive demands," and "political suicide." Realizing the need to show flexibility, he eventually agreed to submit to the Knesset within two weeks the question: "If agreement is reached on all other Sinai issues, will the settlers be withdrawn?" (Carter 1982, 396).

It is possible that Begin became less resistant to this solution once Carter shared the results of polls conducted in Israel that revealed that the people of Israel would not be opposed to dismantling the settlements as part of a lasting peace treaty (Carter and Richardson 1998). This change greatly reduced the incompatibilities shown in Figs. 3, 8, and 9 among concepts such as "political alliances" and "political ramification"; and "democracy" and "dismantling of the settlements". Figure 10 shows the reduced emotional intensities attributed to these concepts and the connections between them. We

will see that this change in emotional evaluation greatly enhanced the prospect of achieving peace.

However, negative emotions continued to impede a comprehensive, peaceful resolution. On day thirteen, upon learning of a US letter to be exchanged with Sadat that reiterated the American position on the status of Jerusalem, Begin was utterly outraged and said he would not sign *any* document if the Americans wrote *any* letter to Egypt about Jerusalem (Carter 1982, 398).

7 Final Resolution: Emotional Change and Compatibility

From the cognitive-affective maps of each leader's mental state at the onset of the 13th day (Fig. 7 for Sadat #5, and Fig. 10 for Begin #4), it is evident that the conflict had become intense. Over the course of the negotiations, Sadat had become frustrated and angry with Begin, pessimistic that peace would be achieved, and unwilling to make any significant concessions without more flexibility from Begin. Similarly, Begin was outraged with Sadat and the Egyptians, and he even had some animosity towards Carter, stemming from a letter that was to be exchanged between Egypt and the United States concerning Jerusalem.

However, in day thirteen Begin had a change in attitude leading to a final emotional state emphasizing emotions such as pride and hope. Perhaps believing that an agreement seen as suitable by both sides could not be reached, Begin's anger diminished substantially as he shifted into a state of tranquility. He appeared genuinely disappointed that he could not accept Carter's letter to Egypt. Taking Carter aside to talk in isolation, he told the President that the issue was fatal and he was very sorry. The President describes Begin as being quiet, sober, and surprisingly friendly. Soon after Carter departed, Begin called and agreed to accept a revised Jerusalem letter pitched to Begin as a last effort (Carter 1982, 399). Why?

According to Carter, Begin's final emotional shift was brought about by a specific social interaction. With the negotiations apparently coming to an unsuccessful end, Begin had asked Carter to autograph photographs of the three leaders for his grandchildren as a departing gift. On the advice of his secretary, Susan Clough, Carter got the names of each of Begin's grandchildren so that he could personalize the photographs. Carter thought this had a profound effect on Begin. The Prime Minister and President Carter both began to cry while talking about grandchildren and entered into a short but emotionally charged discussion concerning their grandchildren's future and war (Carter 1982, 399). The conversation contributed to Begin's emotional shift away from the fear of embarrassment and uncertainty about dismantling the Sinai settlements and toward being flexible in negotiations. He now focused more on ideals such as democracy, peace, and the future of Israel's young citizens as exemplified by his grandchildren. According to Carter, this final emotional shift salvaged the negotiations and was later cited as a turning point (Carter and Richardson 1998).

Figure 11 is a cognitive-affective map representing our estimate (based on Carter's report) of Begin's emotional state of willingness to allow the Knesset (the Israeli parliament) to consider dismantling Israeli settlements in the Sinai. Elements of increased emotional intensity include *peace,* and *Carter.* The positive emotions associated with
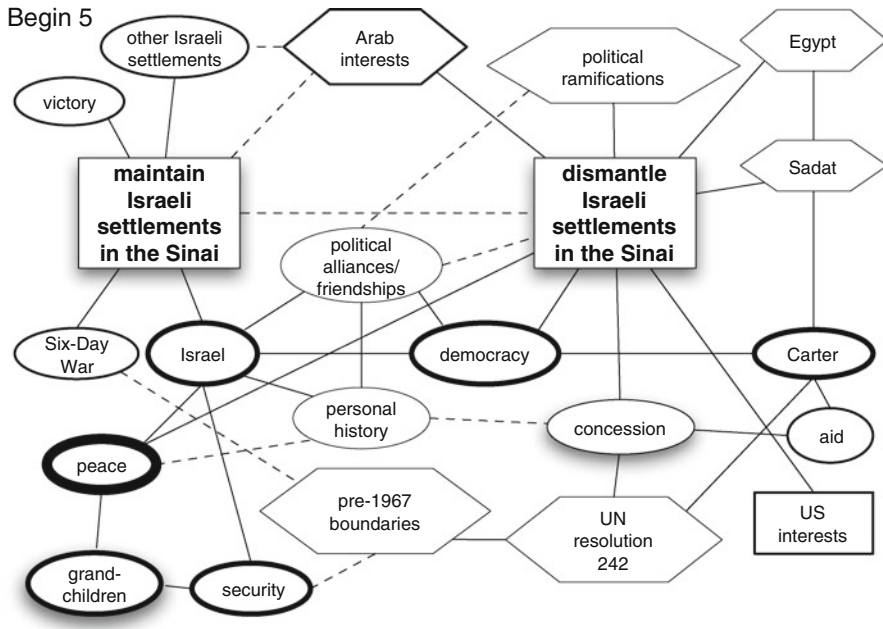
Fig. 11 Cognitive-affective map of Begin's state of mind late in the thirteenth day of negotiations. See text for description of major changes from his previous state

Carter and *concession* also outweighed the negative emotions during this state, so these concepts are now represented as ovals. Elements of decreased emotional intensity include *Egypt*, *Sadat, pre-1967 boundaries,* and *UN resolution 242.* The connection between *democracy* and *dismantle* is now shown as excitatory and no longer inhibitory based on Begin gaining the belief that the Israeli public might support the decision to dismantle if it is the last action required for a lasting peace agreement. Most important, we show a shift in Begin's attitudes toward considering dismantling Israeli settlements, a new willingness to make concessions, and greater concern with *peace.* Not shown is the possible influence of Carter's offer of increased aid.

Following Begin's emotional shift, Sadat entered into a new emotional state after a short discussion with Begin made him realize that the last obstacles to a peace treaty had been removed. Many of Sadat's negative opinions of Begin quickly became positive as the Israeli Prime Minister had abandoned his firm commitment to maintain the settlements in the Sinai. Sadat was still willing to include the numerous concessions already discussed in the agreement and was elated at the idea that the start of a lasting peace had been achieved. Figure 12 illustrates Sadat's resulting state of mind. Elements of increased emotional intensity include *peace,* and *concession.* Many of the negative emotions associated with *Begin* were reduced in this state, so this concept is now represented as a rectangle. Elements of decreased emotional intensity include *Begin*, and *Arab reaction.*
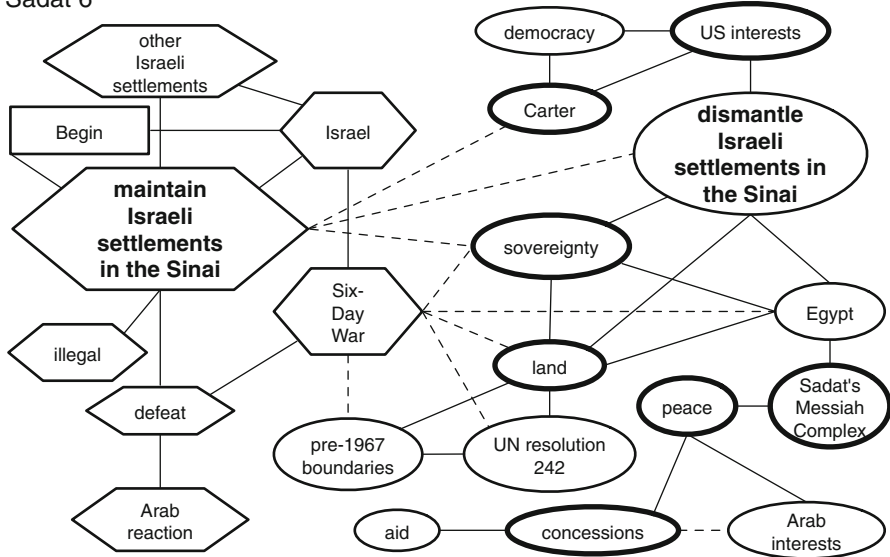
Sadat 6

Fig. 12 Cognitive-affective map of Sadat's final state of mind late in the thirteenth day of negotiations, with *Begin* now neutral

These final changes allowed resolution of a seemingly intractable conflict. Each leader experienced a shift in emotions, from negative ones concerning the other nation to positive ones concerning peace and the United States, including American financial aid that would come with a peace treaty. This treaty would be built around a proposal to settle the issue of the Israeli settlements in the Sinai. The question would be posed to the Knesset asking if each member was in favor of removing the Israeli settlers from the Sinai to conclude a peace treaty between Israel and Egypt if all other issues were agreed upon. Once the signings took place, all three leaders were "flushed with pride and good will toward one another because of [their] unexpected success" (Carter 1982, 403). The Knesset later voted in favor of dismantling the settlements with a 85% majority, and an Egyptian-Israeli peace treaty was signed on March 26, 1979.

8 Limitations

Like all modeling methods, cognitive-affective maps give only a partial picture of complex phenomena. In addition to the conceptual structures that we have described, there are many factors that can contribute to emotional change in negotiations. Sometimes display of emotions is strategic, reflecting an attempt to manipulate the opponent rather than a communication of actual mental states. The expression and possibly even the experience of emotions can be affected by cultural differences concerning how situations are appraised. Many emotional reactions are tied to moral values that are connected with ethical and religious principles that also need to be represented. Cog-

nitive-affective maps do not capture many other major factors in negotiations, such as the communication between participants, which can involve transfer of emotional as well as verbal information (Thagard 2006). Our maps also ignore other more minor factors such as the setting, activities, food, and bodily states that also affect negotiations. They are also limited in their ability to display the dynamics of emotion shifts during negotiations, but computer tools for displaying dynamics are under development. Finally, because cognitive-affective maps show only relations of compatibility and incompatibility between concepts, they are inadequate to capture the full range of causal relations among goals, beliefs, and emotions that determine human actions.

There is unavoidably a degree of subjectivity in producing a cognitive-affective map from one's own understanding of a text or situation. In some narrow domains, it might be possible to specify a vocabulary for selecting what concepts should go into a map, but for general purposes we suggest the following method:

1. Identify the main concepts, beliefs, goals, and emotions of the person being modeled.
2. Identify these elements as emotionally positive or negative, and accordingly represent them by ovals or hexagons.
3. Identify relations between elements that are either complementary (solid lines) or conflicting (dashed lines).
4. Show the resulting cognitive-affecting map to other people to see if it captures their understandings of the person and situation.

Tinkering can then produce a revised map that captures a reasonably intersubjective analysis of a person's emotional state. For example, the current versions of Figs. 2 and 3 reflect a reviewer's observations about weaknesses in earlier versions, and Thagard had previously amended Findlay's original versions based on a slightly different understanding of Egyptians and Israelis.

More specifically, our account of the Camp David negotiations has been limited by the historical and psychological information available. We have relied almost completely on Carter's impressions of the mental states of Sadat and Begin. Moreover, we have not provided cognitive-affective maps for other key participants in the negotiations, including Carter and the aides of all three leaders. Our maps of Sadat's mental states do not fully depict his motivation to make a name for himself, which some of his aides thought made him too eager to make concessions: the oval for "Sadat's Messiah complex" needs additional analysis.

9 Conclusion

We have used a new method, cognitive-affective mapping, to describe the emotional changes that were a crucial part of the resolution of conflict between Egypt and Israel in the 1978 Camp David negotiations. This method has many other potential applications, including literary analysis (Thagard forthcoming-a) and cross-cultural understanding (Thagard forthcoming-b). The diagrams presented in this paper in Figs. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 were produced using a Macintosh drawing tool, OmniGraffle, but a software support system for cognitive-affective mapping is currently under

development (Thagard 2010b). This program, EMPATHICA, is intended not only to facilitate drawing of cognitive-affective maps, but also to serve as a platform for conflict resolution by encouraging disputants to produce maps of themselves and others as a step toward identifying key differences and similarities in both concepts and the emotional attitudes attached to them.

EMPATHICA and the use of cognitive-affective maps in this paper are based on a neuropsychological theory of decision making that assigns a central role to emotion (Litt et al. 2008; Thagard 2006, 2010a). Decisions are inferences that select actions based on emotional evaluation of their relevance to goals, combining neural processes for appraisal of the extent to which situations accomplish goals and for perception of physiological states (Thagard and Aubie 2008). Whereas traditional decision theory and game theory take preferences as given, a neuropsychological theory can explain why people have the preferences they do, and moreover explain how preferences can change in the course of deliberation and negotiation. Preferences arise from emotional evaluations, and preference modification is the result of emotional changes that can arise from revision of beliefs and goals (see Thagard 2010a for an account of goal revision).

Our analysis of the Camp David negotiations is intended to be of more than historical interest. If conflicts are inherently emotional and their resolution requires emotional change, then methods for facilitating recognition and reconciliation of differences between disputants may contribute to movement toward peaceful and satisfying settlements. We hope that cognitive-affective mapping and EMPATHICA will prove to be effective methods for promoting conflict resolution.

References

Alexieva A (2008) Affective mapping: analyzing emotions in international relations. Paper presented at the 49th annual convention of the International Studies Association

Alexieva A (2009) The role of emotions in foreign policy decision making. Paper presented at the 50th annual convention of the International Studies Association

Axelrod R (ed) (1976) Structure of decision: the cognitive maps of political elites. Princeton University Press, Princeton

Barry B (2008) Negotiator affect: the state of the art (and the science). Group Decis Negotiat 17:97–105

Barry B, Fulmer IS, van Kleef GA (2004) I laughed, I cried, I settled: the role of emotions in negotiation. In: Gelfand MJ, Brett JM (eds) The handbook of negotiation and culture. Stanford University Press, Palo Alto

Bazerman MH, Curhan JR, Moore DA, Valley KL (2000) Negotiation. Annu Rev Psychol 51:279–314

Bizman A, Hoffman M (1993) Expectations, emotions, and preferred responses regarding the Arab-Israeli conflict: an attributional analysis. J Confl Resolut 37:139–159

Carter J (1982) Keeping faith : memoirs of a president. Bantam Books, Toronto

Carter J, Richardson D (1998) Conversations with Carter. Lynne Rienner Publishers, Boulder

Damasio AR (1994) Descartes' error. G. P. Putnam's Sons, New York

Dayan M (1981) Breakthrough: a personal account of the Egypt-Israel peace negotiations. Weidenfeld and Nicolson, London

Fisher R, Shapioro A (2006) Beyond reason: using emotions as you negotiate. Penguin, New York

Forgas JP (1998) On feeling good and getting your way: mood effects on negotiator cognition and bargaining strategies. J Pers Soc Psychol 74:565–577

Gordon C, Arian A (2001) Threat and decision making. J Confl Resolut 45:196–215

Halperin E (2008) Group-based hatred in intractable conflict in Israel. J Confl Resolut 52(5):713–736

Hare AP, Naveh D (1985) Creative Problem Solving: Camp David Summit, 1978. Small Group Res 16:123–138

Hare AP, Naveh D (1986) Conformity and Creativity: Camp David, 1978. Small Group Res 17:243–268

Kamel MC (1986) The Camp David accords: a testimony. KPI, London

Lindner E (2009) Emotion and conflict. Praeger, Westport

Litt A, Eliasmith C, Thagard P (2008) Neural affective decision theory: choices, brains, and emotions. Cognit Syst Res 9:252–273

Loewenstein GF, Weber EU, Hsee CK, Welch N (2001) Risk as feelings. Psychol Bull 127:267–286

Long WJ, Brecke P (2003) War and reconciliation: reason and emotion in conflict resolution. MIT Press, Cambridge

Maiese M (2007) Engaging the emotions in conflict intervention. Confl Resolut Q 24(2):187–195

Martinovski B, Mao W (2009) Emotion as an argumentation engine: modeling the role of emotion in negotiation. Group Decis Negotiat 18:235–259

Novak JD (1998) Learning, creating, and using knowledge: concept maps as facilitative tools in schools and corporations. Lawrence Erlbaum Associates, Mahwah

Obeidi A, Hipel KW, Kilgour DM (2005) The role of emotions in envisioning outcomes in conflict analysis. Group Decis Negotiat 14:481–500

Post JM, George AL (2004) Leaders and their followers in a dangerous world: the psychology of political behavior. Cornell University Press, Ithaca

Quandt WB (1986) Camp David: peacemaking and politics. Brookings Institute, Washington

Retzinger S, Scheff T (2009) Emotion, alienation, and narratives: resolving intractable conflict. Confl Resolut Q 18:71–85

Sadat A (1978) In search of identity: an autobiography. Harper & Row, New York

Schreier LS (2002) Emotional intelligence and mediation training. Confl Resolut Q 20:99–119

Shapiro DL (2002) Negotiating emotions. Confl Resolut Q 20:67–82

Sowa JF (1999) Knowledge representation: logical, philosophical, and computational foundations. Brooks Cole, Pacific Grove

Stone D, Patton B, Heen S (2000) Difficult conversations: how to discuss what matters most. Penguin, New York

Telhami S (1990) Power and leadership in international bargaining: the path to the Camp David accords. Columbia University Press, New York

Thagard P (2005) Mind: introduction to cognitive science, 2nd edn. MIT Press, Cambridge

Thagard P (2006) Hot thought: mechanisms and applications of emotional cognition. MIT Press, Cambridge

Thagard P (2010a) The brain and the meaning of life. Princeton University Press, Princeton

Thagard P (2010b) EMPATHICA: a computer support system with visual representations for cognitive-affective mapping. In: McGregor K (ed) Proceedings of the workshop on visual reasoning and representation. AAAI Press, Menlo Park, pp 79–81

Thagard P (forthcoming-a) The brain is wider than the sky: analogy, emotion, and allegory. Metaphor Symb

Thagard P (forthcoming-b) Mapping minds across cultures. In: Sun R (ed) Grounding social science in the cognitive sciences. MIT Press, Cambridge, MA

Thagard P, Aubie B (2008) Emotional consciousness: a neural model of how cognitive appraisal and somatic perception interact to produce qualitative experience. Conscious Cognit 17:811–834

Thompson LL, Nadler J, Kim PH (1999) Some like it hot: the case for the emotional negotiator. In: Thompson LL, Levine JM, Messick DM (eds) Shared cognition in organizations: the management of knowledge. Lawrence Erlbaum Associates, Mahway

Vohs KD, Baumeister RF, Loewenstein G (eds) (2007) Do emotions help or hurt decision making? A hedgefoxian perspective. Russell Sage Foundation, New York

Watkins M, Rosegrant S (2001) Breakthrough international negotiation. Jossey-Bass, San Francisco

Weizman E (1981) The battle for peace. Bantam, Toronto