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The Limited Test-Ban Agreement: Emergence of New Knowledge Structures in International Negotiation

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An analysis of cognitive maps constructed from exchanges between President Kennedy and Premier Khrushchev on the test-ban issue suggests cultural differences in the basic knowledge structures used to represent political reality. Soviet negotiators, including Premier Khrushchev, use "processual" representations, while U.S. negotiators, including President Kennedy, use "procedural" representations. A comparison of the negotiations over time reveals the emergence of new knowledge structures that were hypothesized to facilitate an agreement on nuclear testing. A related discovery, that Kennedy and Khrushchev "translate" each other from procedural to processual and vice versa, provides additional evidence for the shared reality-building process that may be a precondition for successful negotiation.

The achievement of the Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water, which was signed in Moscow on 5 August 1963 and entered into force two months later, has been attributed to the hard work of the negotiators, and the intense personal commitment of Kennedy and Khrushchev to arms control in the aftermath of the Cuban Missile (Caribbean) Crisis. Arthur M. Schlesinger, Jr., for example, observed that the chief U.S. negotiator, W. Averell Harriman, who put together a "small and brilliant" delegation, "dominated the negotiations on the Western side." Harriman was "correct, forceful, his restraint masking a capacity for toughness and even anger" (Schlesinger, 1965:905-7). A

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member of the British delegation, A. Duncan Wilson, called Harriman "the great man of the meeting" (Seaborg, 1981:253).

President Kennedy and, to less extent, Premier Khrushchev also have shared credit for the first arms control agreement between the United States and the Soviet Union. Soviet Foreign Minister Andrei Gromyko attributed the treaty to Kennedy's rejection of the "stereotypes of the cold war" and willingness to challenge "the military industrial monster which, during the period of the Caribbean Crisis, influenced the politically phlegmatic American average man" (A. Gromyko, 1990:494, author's trans.), while his son, writing in 1973, explained President Kennedy's actions in terms of "his sound assessment of the course of events and of the changes which had occurred in the balance of forces in the international arena, which dictated a realistic approach to world problems" (A. A. Gromyko, 1973:215).

Although these explanations for the success of the Limited Test-Ban Treaty are vivid and dramatic, they provide little insight about how the negotiators worked within a changing institutional structure to bridge their differences and reach an agreement. Were there differences in the way the negotiators, including Kennedy and Khrushchev, viewed the test ban? If so, were the negotiators aware of such differences in viewpoints, and did they take them into account in their deliberations? How did the two sides represent the issues surrounding the test ban, and did these representations change over the course of the negotiations?

To answer some of these questions and gain a better understanding of the role of culturally based knowledge structures in international negotiation, cognitive maps of Soviet and American officials in the talks leading to the Limited Test-Ban Treaty were analyzed and compared. Following the research of Parshin and Sergeev (1990), Soviet negotiators, including Premier Khrushchev, were hypothesized to use "processual" representations, while U.S. negotiators, including President Kennedy, were hypothesized to use "procedural" representations. Furthermore, comparisons of the negotiations over time were expected to reveal the emergence of new knowledge structures that may have helped to facilitate an agreement on nuclear testing within the context of intercultural relations between the two superpowers.

**Cultural Differences**

One promising approach to the study of international negotiation focuses on cultural differences in political "thinking" and representation. This approach is consistent with the notion that "national subcultures produce national negotiating styles" (Jónsson, 1990:8). Comparative studies of political reasoning suggest, for example, that induction and empiricism are characteristic of Anglo-American societies, while dialectical "thinking," which emphasizes antagonistic forces within a deductive system, is used in Marxist societies (Condon and Yousef, 1975:228).

Recent research by Russian scholars on the Cuban Missile (Caribbean) Crisis found differences between the United States and the Soviet Union in the knowledge structures used to analyze the situation (Parshin and Sergeev, 1990). The American officials viewed the Cuban Missile Crisis in terms of structured and deliberately ordered actions that were seen to cause a sequence of states of affairs, for example, the stationing of Soviet strategic missiles in Cuba, if allowed to go unchecked, will lead ultimately to war (Sergeev et al., 1990). The Soviets, on the other hand, saw the situation in terms of a continuous process without intermediate steps, for example, building of communism or curbing imperialism (Sergeev et al., 1990). The authors suggest that the danger of the confrontation during the crisis stemmed, in part, from such differences in knowledge structures. The Soviets viewed the stationing of missiles as a way of contributing to an inevitable result, such as the victory of communism. U.S. officials, on the other hand, saw the stationing of
missiles as a risky step that would lead to a qualitatively different situation and that required a strong response (Parshin and Sergeev, 1990:30–1).

To understand each other, participants in negotiating situations should have, at a minimum, a common language. Basic concepts that describe “reality” have to be shared; otherwise, the meaning of an agreement will be uncertain and subject to different interpretations. But the process of reaching an agreement may involve more than having a common language. New knowledge structures may have to emerge before participants are able to understand the positions of negotiators from another culture. It is primarily through new structures that one can reinterpret the features of another culture, obviously important for international negotiation. Knowledge structures usually are not consciously controlled, so they are extremely stable and they rarely change (Lakoff, 1987:5–11).

A Typology of Pre-understandings

Cultural differences in understanding political “reality” may be a reflection of the ontological assumptions, or “pre-understandings,” that stand behind political texts. A pre-understanding is a basic knowledge structure that supports the author’s vision of a political situation (Sergeev and Biryukov, 1993:11–2). As such, it can be viewed as a “meta-representation of the world, which exists prior to any special analysis of the given situation, prior to the investigation of any concrete knowledge” (Sergeev, 1991:4). A pre-understanding, as used here, is similar to Heidegger’s and Gadamer’s notion of an ontological or historical pre-understanding (Mueller-Vollmer, 1985:17), “which is . . . not simply the product of the individual’s ‘inner experience,’ but has intersubjective validity, going before and along with all empirical experience, and yet is preontological (preconceptual)” (Linge, 1976:xxxv). “In language as a way things have been expressed or spoken out, there is hidden a way in which the understanding has been interpreted” (Heidegger, 1962:167–8). To discover this hidden knowledge structure, one must observe the concrete use of language in interpersonal and intercultural communication and have the tools to analyze culturally approved rules that prescribe its use.

Three types of pre-understandings, each leading to a different representation of knowledge, can be identified. The **holistic** view reflects an ontology of the world that has more than one level. It differentiates surface events, which are easily identified, from internal objects, which are hidden and not understandable. The internal objects are considered to be extremely complex things that have a certain “inner life”:

Any attempts to dismantle, to analyze this “living” reality may be assessed as hopeless, because they should inevitably kill the “spirit” or “inner life” of this reality. We may try, nevertheless, to isolate some more or less “independent” entities in this reality, certain “objects” and “processes.” We may neglect the problem of how these objects are really functioning—the only thing we can understand is “the plan of their construction,” i.e., how different parts of the given object are related to each other. We do not understand what the real dynamics of the “inner life” of objects is, we monitor only “steps of development” which are related in time only by the identity of objects; therefore, we may see sometimes sudden transformations or “metamorphoses” like seasons in nature or emergence of flowers on plants. (Sergeev, 1991:3–4)

This pre-understanding excludes direct intervention, because it might destroy the “inner life.” One may, however, provide some of the necessary conditions to
intensify or inhibit the processes of life, or they may even be destroyed, if one has the necessary resources. Alternatively, these living entities may exhaust necessary resources and die “naturally.” Examples of texts that reflect a holistic or organic pre-understanding include the writings of Eastern mystics, especially Taoists and Sufies, Russian Orthodox thinkers, Russian texts from the second half of the nineteenth century, and the Marxist tradition on Russian soil in the late nineteenth century and early twentieth century (Sergeev, 1987). Many political leaders, such as Lord Bolingbroke, Stalin, and Mao, were also guided in their political activity by the organic metaphor (Sergeev, 1991:4).

A holistic pre-understanding produces a processual representation of political activity, whereby “a change of a political situation is seen in terms of continuous processes, without any intermediate steps” (Parshin and Sergeev, 1990:7). In a processual representation, the main controllable variable is the intensity of the process. Actors can intensify or inhibit processes by their actions, and the more the actor does, the greater the contribution to the processes. The major analytical task for the actor is to identify the processes and their subjects and to assess their intensity. “The first task presupposes abstraction; to resolve it, creative metaphors are widely used. . . . Intensity is assessed by matching identified processes against reality; for this end the main instrument is exemplification” (Parshin and Sergeev, 1990:8).

Processual representations are something different from representations based on causal relations. Ontologically, this is due to their grounding in a completely different type of pre-understanding—“holistic” rather than “structural” (see below). In more technical terms, the very idea of a “state of affairs,” and, hence, of causal chains of states, is subdued in the case of processual representation (if not completely alien to it). Therefore, there are no precise “points of influence,” no deliberately identified and desired/planned/created intermediate stages. An actor’s activity in the case of a processual representation is not structurally incorporated into objective development; it is just a contribution to the process as a whole. The contribution may be large or small, but it could hardly be located against the “structure of activity.” Processual representations do allow for the notion of goals, but goals are not “achieved” through the actualization of certain states of affairs as in the case of causal chains; instead, they are final states of processes which are entities in themselves.

The nominalistic view is based on a one-level, purely “surface” ontology that divides the world into simple “atomic” objects. This view attempts to understand the behavior of others as a reaction to an immediate stimulus, with no structural relations between objects:

Within this type of preunderstanding only sets of discrete events exist. In contrast with the holistic approach discussed above this “nominalistic” picture of the world may be formalized in terms of set theory. Based on easily controllable variables, it is very scientific in a positivist sense. . . . In this picture of the world only correlations exist, and no “natural laws”; and similar logical rules are used instead of complex and rich mathematical theories in most attempts to describe reality. (Sergeev, 1991:5–6)

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1 Haas (1975) discusses the problems of using holistic constructs as organizing devices for combining scientific with political knowledge.

2 A related type of processual representation is metamorphosis based. “Here a change in a political situation results in a completely new and different state of affairs. The actor influences the change by contributing to states of affairs which bring about change. . . . The main analytical task for the actor is to select the states of affairs which will determine the metamorphosis” (Parshin and Sergeev, 1990:10).

3 See Alelson’s (1973) treatment of plans as “molecules” consisting of intermediate steps or alternative routes toward goals.
Texts written by technical bureaucrats which take into account only the immediate situation reflect a nominalistic view. Revolutionary texts that are constructed to motivate people toward collective action, such as the writings of Imam Khomeini and religious intellectuals prior to the Iranian Revolution, also reflect this view. Chinese texts, with the exception of Mao, are strongly nominalistic and contain long lists (e.g., ten principles, twelve ideas, three main truths) that are typical of a nominalistic pre-understanding.

A nominalistic view results in a political representation that attempts to understand the activity of others in behavioral terms. In this type of representation, actors do not plan; rather, they simply react to the last occurrence, creating an action-reaction sequence. Since there are no “natural laws,” simple logical rules are used instead of complex theories to arrive at a course of action. Political life is seen as a game of poker with high risk, bluff, and much emphasis on secrecy and intelligence (Sergeev, 1991:5-6).

A third type of pre-understanding is based on a structural view that takes into account patterned relations between objects. This view is based on a two-level ontology:

We may consider certain inner structures of a given object. If we divide the object into different parts, we may describe roles of parts and then connect these roles into a “role structure.” In one and the same object it is possible to find an infinite number of role structures, but usually only a small section of them have functional importance. . . . According to this type of preunderstanding, the inner or hidden ontology of the object is described, if we turn to its development, by a network of inter-related possibilities, or states of affairs, each of them being the representation of a virtual role structure. (Sergeev, 1991:6)

Relations between states of affairs are described in this view in terms of causal linkages; for example, event A “prevents” event B. Texts that reflect a structural view include much of the Western understanding of political “reality,” especially analysis based on the assumptions of a rational actor model.

Procedural representation is used by actors who have a structural pre-understanding of the world. Change is the result of structured and deliberately ordered actions, that is, a procedure causes a new state of affairs. The controllable variables for the actor are actions that are incorporated into the structure of activity. An actor influences change through concrete actions, which are value and goal driven. An actor is in the middle of the situation and is inherently responsible for change. The main analytical task is to decompose a situation into a set of states of affairs and trace the influence relations between them. “Explication of a structure of influence relations and explaining actions by mapping them into such a structure is the main rhetorical task for a politician who uses a procedural representation to give a public account of his activities. The more thorough is the tracing of influence, the more convincing an analysis is” (Parshin and Sergeev, 1990:12). To support this type of representation, numerous metaphors of causation are used.4

The pre-understandings identified here—holistic, nominalistic, and structural—are discursive practices of political life that create and sustain political institu-

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4 Metaphors of causation have been extensively studied by Lakoff and Johnson (1980:69-76), Lakoff, Espenson, and Goldberg (1989), and Lakoff (1995), who postulate several basic types of metaphorical models for causation: CAUSES ARE SOURCES, CAUSES ARE PHYSICAL FORCES, BEING AFFECTED IS BEING HIT BY A CAUSE, BEING AFFECTED IS BEING MOVED BY THE CAUSES, etc.
tions. For example, Soviet political institutions reflected a holistic view: the party structure was responsible for global planning at an abstract level through the choice of guidelines that served to intensify or inhibit certain processes. Concrete situations were handled by choosing the right people and bringing them together without any rules of procedure or division of labor. Such units were considered as "biological organisms" that function with collective responsibility. Everyone should do everything. You may be appointed to head a ministry, but, if necessary, you will type the letters and deliver them. In populist systems, on the other hand, political life is organized around slogans that are designed to activate people to produce motivation for collective action. These discursive practices construct texts that consist of discrete objects that have little relation to each other. In the United States and pluralistic democracies, there is the possibility of having free debate about political planning. Inevitably, the details of political planning become a subject for debate, and plans are spelled out step by step, thus laying the groundwork for elaborate procedures. Thus, different discursive practices produce different types of pre-understandings which are expressed in their political texts and reflected in their political institutions.

To develop and implement new institutions, different "rules of the game" may be formulated, but existing pre-understandings will inevitably change the nature of these institutions. By implementing the formal skeleton of a new institution, you can influence everyday practice; for example, you may select people who are especially skillful at playing a new game. However, an institution is more than formal rules; it also consists of unwritten rules which are reproduced from old institutions and used to cover contingencies, which, over time, may alter the nature of the new institution and make it difficult to sustain.

The Limited Test-Ban Negotiations

Jönsson (1979) divided the test-ban negotiations into three stages, with Stage I extending from the outset of the talks until the fall of 1960. The nuclear test-ban issue came to the forefront in 1954, when an American thermonuclear test on the Bikini Atoll caused widespread radioactive fallout that affected a Japanese fishing boat. A year later the Soviet Union, in its proposal for comprehensive disarmament, included a ban on nuclear tests in its first stage, and, in the spring of 1956, it proposed a nuclear test-ban as a separate measure. In 1957 the test-ban issue was debated for the first time in the U.N. Sub-committee of the Disarmament Commission, but no progress was made, and nuclear tests continued at an accelerated rate (Jönsson, 1979:25). On March 31, 1958, the Soviet Union unilaterally suspended tests and called on the West to reciprocate. President Eisenhower countered by proposing a meeting of experts to discuss control measures. The Conference of Experts, which met during the summer of 1958, agreed on an inspection system that would include 180 land-based control posts (Jensen, 1988:92). The United States accepted the report as a basis for further negotiation. While the talks continued during this stage, the United States, Great Britain, and the Soviet Union, except for a brief period in the fall of 1958, observed a moratorium on testing. By 1960 an agreement was reached on a preamble, seventeen articles, and one annex for the prospective treaty. Initial differences were narrowed on nearly all issues during this period and "an unprecedented rapprochement occurred" (Jönsson, 1979:30).

Stage II began on May 1, 1960, when an American U-2 plane was shot down over the Soviet Union, wrecking the scheduled Paris summit. After the incident, the
test-ban negotiations slowed to a halt, with few new proposals and no new concessions in the second half of 1960 (Jönsson, 1979:31). On December 5, 1960, the Geneva conference began a recess that lasted for almost four months. When the negotiations resumed, the Soviet Union began making retractions and suggested that the test-ban issue might be solved within the context of general and complete disarmament. At the Vienna summit meeting in June 1961 Khrushchev promised Kennedy that the Soviet Union would not be the first country to resume testing, perhaps anticipating that the United States would be the first to break the moratorium (Jensen, 1988:101). As East-West relations continued to deteriorate in the summer of 1961, the USSR resumed testing nuclear weapons on August 30, and the Western powers followed suit. From September 1961 through December 1962, a total of 170 tests were conducted by the nuclear powers, compared with 280 tests prior to the moratorium (Jönsson, 1979:32). In the spring of 1962 the test-ban issue was moved to the Eighteen-Nation Committee on Disarmament which began working in Geneva on March 14. Throughout the remainder of Stage II, both sides repeated their positions and little progress was made.

Stage III began with the Cuban Missile Crisis, which marked a turning point in relations between the United States and the Soviet Union. Khrushchev mentioned in his correspondence with Kennedy during the Missile Crisis that a peaceful solution of the crisis “might be a good beginning and, specifically, facilitate a nuclear test ban agreement” (Kennedy, 1969:169). In December 1962 Khrushchev called attention to the successful resolution of the Cuban Crisis and asked, “Can we not solve the far simpler problem of the cessation of test explosions of nuclear weapons in time of peace?” (quoted in Jönsson, 1990:125). This renewed interest in a test ban was reflected at the bargaining table in a series of Soviet concessions on the control issue. As a consequence of an exchange of correspondence among the heads of the United States, Great Britain, and the USSR in the spring of 1963, arrangements were made for a meeting about a possible partial test ban in Moscow beginning on 15 July. It was in this context, that Kennedy announced in his commencement address at The American University that “the United States does not propose to conduct nuclear tests in the atmosphere so long as other states do not do so.”6 This statement, as well as other views expressed by Kennedy in the address, set the stage for the negotiation of the Limited Test-Ban Treaty, which banned nuclear weapons tests in the atmosphere, outer space, and under water. The treaty, signed in Moscow on 5 August 1963, was the first concrete result of eighteen years of effort by the United States, Great Britain, and the Soviet Union to impose limits on nuclear arms.

These negotiations were unusual in a couple of respects. First, unlike most of the East-West negotiations that occurred prior to 1963, the Soviet premier took personal responsibility for the Limited Test-Ban negotiations. Premier Khrushchev considered himself as the chief negotiator and responsible for the final result. This was an argument that was used against Khrushchev when he was ousted in October 1964: he was accused by conservatives of going too far in the process of disarmament after the Cuban Missile (Caribbean) Crisis (Beschloss, 1991:563). For the first time in the history of Soviet leadership, a premier was forced to explain his actions. Previously, the structure of political discourse in the Soviet Union presumed that the leader need not explain his actions. Institutionally, this was a new situation and marked a dramatic change in expectations and the field of action.

Second, the Limited Test-Ban negotiations were a reflection of a new approach to negotiation, a new social institution involving the Soviet Union and the West, that developed as a result of the Cuban Missile Crisis. The system of negotiations that

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6 See United States Arms Control and Disarmament Agency (1963:220).
The Limited Test-Ban Agreement existed prior to 1962 was a very formal institution, involving an exchange of documents, largely for propaganda purposes. On the Soviet side negotiations with the West were regarded as something temporary. They had nothing to do with the general movement toward socialism, because imperialist forces would fall of their own weight. Therefore, the Soviets considered negotiations as a propaganda game, using the same expressions and repeating the same words over and over. They talked about banning nuclear tests, but they were producing more powerful nuclear explosions in the new lands of the Soviet Union in the early 1960s.

The Cuban Missile Crisis, however, changed the meaning of nuclear weapons for both sides and led to the development of a new social institution between the Soviet Union and the West. Both sides realized that the old institution was not just a propaganda exercise but a dangerous game that could lead to the outbreak of a nuclear war and destroy everything. Nuclear weapons were a problem that required a different scenario of interaction. It was dangerous to continue making propaganda moves while investing more and more money in military weapons and competing with each other in the Third World. From this altered view of the world, new rules of superpower interaction emerged, based upon different knowledge structures. Both sides created in several months a totally new way of interacting and changed the nature of the negotiation institution between the Soviet Union and the West.

Cognitive Mapping

Cognitive mapping was used to describe the representations found in texts from the Limited Test-Ban negotiations in order to make evident differences in semantic structures of the texts—texts belonging to different cultural traditions. Cognitive mapping is a specialized technique for portraying causal and quasi-causal thinking with respect to general situations or specific issues that are treated in a text. Although the technique is able to capture only a small part of textual content, the “presupposition behind the cognitive mapping approach is that a structure of quasi-causal reasoning is an important source that can shed light on the political thinking of a text’s author” (Sergeev et al., 1990:185).7

The flexibility of cognitive mapping across different levels of abstraction has enabled investigators to apply it to a wide variety of policy situations, ranging from crisis-produced stress and Japan’s decision for war in 1941 (Levi and Tetlock, 1980) to the political thinking of President Kennedy in the Cuban Missile Crisis (Sergeev et al., 1990). Cognitive mapping is also used to study international negotiation. Axelrod, in his research on argumentation in foreign policy settings, compared cognitive maps constructed from the 1938 Munich negotiations to deliberations that took place within a single nation (1977). He found relatively less disagreement over causal relationships in the Munich negotiations than in collegial and bureaucratic groups. Bonham et al. (1987) used cognitive mapping to compare two sets of negotiations, the 1905 negotiations between Sweden and Norway over the dissolution of the union between these countries, and the discussions at the Paris Peace Conference in 1919 over the future of the Saar Basin. This research demonstrated the utility of cognitive mapping as an organizing device for describing the representations of the negotiators. For example, when an aggregate cognitive map of the Saar Basin discussions was analyzed, the shared meanings, as well as the conflicting understandings, emerged as well-defined cognitive paths (Bonham and Shapiro, 1988).

7 The cognitive mapping approach is based on Kelly’s (1955) theory of personal constructs. For discussion of the theoretical foundations of cognitive mapping, see Eden (1988) and Shapiro and Bonham (1973).
Procedural coding can be used to code texts that are based on a structural pre-understanding, an ontology that is typical of texts produced in the West. Most cognitive mapping studies have used a procedural coding technique. In a cognitive map constructed from procedural coding the concepts of an author are described by nodes and the causal links are shown by arrows. An arrow with a plus sign indicates a positive causal link or a quasi-causal relation ("leads to," "contributes to," "a condition of," etc.), and an arrow with a minus sign denotes a negative causal link or quasi-causal relation ("aggravates," "diminishes," etc.), and a zero indicates the denial of any causal linkage ("does not depend on"). All of the causal links, or "cognitive paths," of the author(s) can be aggregated and combined into maps for describing the causal representations of a political collective (Shapiro, Bonham, and Heradstveit, 1988).

One should note that different subtypes of causation are linguistically represented by many expressions besides those containing a verb "cause" or a conjunction "because." In procedural coding, the variety of both causation types and their language correlates is great, because not only causal but also conditional, concessive, taxonomic, and other relations are often treated by authors as quasi-causal links.

Many of these linguistic expressions are metaphorical, and various metaphors of causation are quite common in texts that are representative of structural pre-understandings. For example, in the Limited Test-Ban negotiations President Kennedy said that "hopes have been struck a serious blow" (Radio-TV Address by President Kennedy on the Vienna Meeting, 6 June 1962); "the assistance of imperial states to reactionary forces could lead to great complications"; "the cold war brings burdens and dangers to so many countries"; "nuclear powers must avert those confrontations which bring an adversary to a choice of either a humiliating retreat or a nuclear war"; "the proposed arrangement is one step in this direction" (Address by President Kennedy at The American University, 10 June 1963). In these examples words with originally spatial semantics are used to suggest causal meaning through metaphorical transfer from spatial image schemas to a causal target domain (Lakoff, 1987).

The analysis of cognitive maps constructed from procedural coding is accomplished by treating them as directed graphs, or "digraphs," and using the rules of digraph theory for making calculations. Digraph theory, a formal system with elaborate rules for moving about in a network of interrelated elements, provides an inference structure that is convenient for seeing how the concepts relate to each other and the overall structure of the set of causal relations (Axelrod, 1976:5). Calculation is greatly facilitated because the inventors of digraph theory have worked out the relationships between digraph and matrix algebra, so it is possible to manipulate relationships between and among elements. The set of rules (axioms, primitives, theorems, etc.) that constitute the theory of directed graphs is far too elaborate to treat here (see Harary, Norman, and Cartwright, 1965).

Processual Coding

Processual coding is a cognitive mapping technique that has been developed to portray representations based on an holistic pre-understanding. This technique has been used to describe Soviet statements in the Cuban (Caribbean) Missile Crisis (Parshin and Sergeev, 1990) and to compare foreign policy pronouncements of Gromyko in 1981 to Shevardnadze in 1989 (Sergeev and Parshin, 1990). Because

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8 For a description of procedural coding and examples see Axelrod (1976), Bonham and Shapiro (1986), and Ackerman, Eden, and Cropper (1990).
this technique is not as well known as procedural coding, we will describe the coding frame and illustrate the technique with examples.

Like any existent technique of politically oriented text analysis, processual coding is defined by example rather than as an algorithmic procedure. A prototype of a processual frame is shown in Figure 1. A political or social process is portrayed as a vertical arrow from an **Initial Point**, which might refer to an event or to a series of events, such as the October Revolution or the Great Patriotic War, to a **Result**. Unlike the goals described in procedural representations, which are concrete objectives, results are outcomes of processes, and, as such, are vague and often conveyed metaphorically, for example, “the victory of communism.” Time is very important and often flows from the initial point to the result. The arrow itself represents the underlying process, which may unfold in different stages. Like results, processes are rather general, and they are often redefined in other terms. Often texts describe more than one process. In Figure 1, two processes are portrayed, but there may be three or more in a piece of text, and the author may describe two or more processes that influence each other (shown in Figure 1 as a two-headed arrow).

In Russian texts, processes are a retelling of Marxist presuppositions about the nature of society, presuppositions that do not change or evolve only in stages. What does change, however, is the intensity of each process, which varies, depending on the participation of the different actors. Verbs describe the relationship of actors to processes. Processual verbs, such as “undermine,” “increase,” “struggle,” “work out,” and “attempt” are common, along with the processual nouns like the “struggle,” the “pressure,” and the “campaign.” Architectonic metaphors, like “building socialism,” can be found in processual texts. Examples of processes are “the struggle against reactionary regimes,” “the spread of Marxism-Leninism,” “class struggle,” and so on.

In processual representations individual actors can “participate” in a process by making positive contributions to intensify the process or negative contributions to inhibit the process. The efforts of individual actors can be displayed in processual coding as a line segment with a plus or minus sign to indicate the nature of their contribution. For example, “Western powers build a dam against people's movements” might be shown as a straight line with a minus sign leading to a processual arrow labeled “people's movements.”

Exemplification is very important in texts that are based on an holistic pre-understanding. Examples are used to justify the process and reflect its intensity. The more examples that are given by the author, the greater the intensity of the process. In a processual coding frame, examples are listed in a box which emerges to the right of the processual arrow, for example, “Lenin's initiative at the Genoa Conference in 1922” (see Figure 2).

**Intercoder Reproducibility**

Although cognitive mapping involves the coding of complex representations expressed in natural language, scholars have been able to achieve acceptable levels of intercoder reproducibility. Axelrod (1976) found that the hardest task was to agree on which assertions are codable. Using Robinson’s (1957) measure of agreement,

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9 In principle, both an initial point and a result can be affixed to a process. An initial point may be indicated or not; it is not contrary to the notion of process. When a process is observed, an initial point is more often than not subdued and not presented in the text. In an extreme (and ideal) case, a process might well be seen as “a stream flowing nowhere to nowhere.” Goals are categories alien to the notion of process. Human intention activity is characterized by goals, and activity is the principal category to be differentiated from a process.

10 The technique of processual coding is described in greater detail in Biryukov, Gleisner, and Sergeev (1995).
he obtained a score of .80 on the number of codable assertions. Once identified, however, the level of coder agreement was considerably higher: 92 percent on the identification of the cause, effect, and sign of the relationship (p. 86). Coders also found it relatively easy to identify assumed but unstated relationships, achieving a 91 percent level of agreement (p. 254). Axelrod concluded that “the coding rules have reached a state of precision such that the intercoder reliability is fully compatible with the accepted standards of good quantitative work in the social sciences” (1976:84).

Other scholars have obtained similar levels of intercoder reproducibility. Bonham, Shapiro, and Trumble (1979), working with the transcripts of interviews with foreign policy officials in the United States, reported that intercoder agreement ranged between 80 and 90 percent for procedural coding (p. 17). Young (1994, 1996), who developed “WorldView,” a much more elaborate system for cognitive mapping that identifies not only simple causal relationships but also goal, instrumental, temporal, and other relationships, achieved intercoder reproducibility scores above .80 with limited training. This is impressive, because the more distinctions that one makes among permitted types of relationships, the more difficult it is to achieve acceptable intercoder reproducibility (Axelrod, 1976:11). Nevertheless, the distinctions that are made by coders are fairly “natural” ones that are “probably meaningful not only to the coders, but also to the audience . . . and even to the speaker” (Axelrod, 1976:227–8). Our experiences coding texts from the negotiations on the Limited Test-Ban Treaty mirror those of the other researchers who have used cognitive mapping. Procedural coding, which involves the identification of simple causal and quasi-causal relationships, was done by four coders (the authors and a graduate assistant who was not aware of the research expectations), who achieved a level of agreement similar to other cognitive mapping research. Proces- sual coding, which also involves the identification of general social and political

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Fig. 1. Prototypical example of a processual frame.
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<Diagram>

- **Result**
  - Process influencing process
  - Examples show intensity of process:
    - 1)
    - 2)

- **Initial Point**

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Actors with a positive contribution to process

Actors with a negative contribution to process

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Before dealing with the concrete questions which were discussed during our talks with the US President, I should like to express my sincere gratitude to the Federal President of Austria, Mr. Chaff; to the Federal chancellor, Mr. Gorbach; and to the vice chancellor, Mr. Pitterman, for what they did to see that the Vienna meeting might take place under the most favorable conditions for both countries. We are grateful to the citizens of beautiful Vienna for their kind and cordial attitude toward us, representatives of the Soviet Union.

Now, dear comrades, allow me to expound our point of view. I would like to express some considerations about how, in our opinion, one can best solve all controversial or unsolved problems in the relations between states which have become ripe - one can say overripe - and urgently call for solution.

One such cardinal question is that of general and complete disarmament. It is well known that the Soviet Union has been consistently and persistently working to solve the question of disarmament. The Soviet state has been raising it before the world for decades. I recall that as far back as 1922, at a Genoa conference, the Soviet Union, on the initiative of the great Lenin, proposed general and complete disarmament. In 1927 we raised the question at the League of Nations. It was impossible to achieve a solution to this problem, and the imperialists subsequently unleashed a world war.

Since World War II, which brought untold sorrow and misery to the peoples, we have doubled our efforts to achieve the speediest solution of the disarmament problem. In the United Nations and outside it we are using every opportunity to achieve a positive solution to the disarmament problem and to avert the threat of a new world order.

The USSR took part in the work of the UN Atomic Energy Committee, which was instructed to work out an agreement on the banning of nuclear weapons. We also conducted negotiations within the commission on conventional armaments. Starting with 1950, when a joint disarmament commission was formed, the Soviet Union took active part in its work. For years in London and NY our representatives sat in the subcommittees of that commission. Many proposals were advanced, many speeches were heard; but the solution of the disarmament has not advanced a single step.

Last year the 10 nation committee on disarmament met in Geneva. This time its composition differed from bodies that precede it. It consisted of representatives of five socialist and five Western powers. But the unwillingness of the Western powers to accept disarmament also led to the failure of this committee to achieve any positive results. Why did all these committees and subcommittees fail to achieve successes in their work? This is because the Western powers were clearly not ready for serious negotiations, did not want - and still do not want - disarmament. It is understandable that no government can openly adopt this sort of attitude in the face of the peoples; the Western powers are afraid to declare outright and honestly to the public that they do not want businesslike negotiations with the Soviet Union on the problem of disarmament. The capitalist monopolies are making profits from the arm race and are interested in its prolongation. But to cover up all this they obviously need at least a pretense of negotiations. Hence they have chosen the diplomatic approach: without refusing to directly take part in negotiations, they at the same time will not agree to accept concrete proposals on disarmament. They are dragging their feet, as the saying goes. A complete system has been worked out to prevent the attainment of the goal, to make sure that the problem of disarmament ends in an impasse.

processes that are represented in a text, as well as the author’s view of the positive or negative “contribution” of individual actors to each process, was done by the authors, who achieved comparable levels of agreement.

The Texts
Because the Limited Test-Ban Treaty was the outcome of efforts at the highest level, the exchanges of President Kennedy and Premier Khrushchev were selected for the cognitive mapping analysis. Each text was coded separately, using both procedural and processual coding techniques as described above. In order to discover changes in knowledge structures, texts from two different time periods were selected—immediately following the 1961 Vienna summit in the middle of Stage II (the period of deteriorating relations), and the six-month period just prior to the signing of the treaty in 1963, the end of Stage III.

Results
A close reading of the texts reveals significant differences between Premier Khrushchev and President Kennedy with respect to their approach to political life and use of language—their discursive practices. Khrushchev’s speeches alternate between statements of very abstract principles and lists of examples, some of which go back to the 1920s and 1930s. For example, in Khrushchev’s radio-television address of 15 June 1961, a report on his talks with Kennedy in Vienna, the Soviet Premier talked about striving to “insure peace” and “lessen international tension” through “general and complete disarmament,” and he gave numerous examples of Soviet efforts in the U.N. Atomic Energy Committee. In the letter he sent to President Kennedy on 19 December 1962, Premier Khrushchev wrote of the need to develop “peaceful relations” and “resolve all controversial questions by means of negotiations and mutual concessions.” From the Western point of view, these speeches also seem to be very propagandistic and blame others for the problems of the world. He attributed the failure of the Ten-Nation Committee on Disarmament to the “unwillingness of the Western Powers to accept disarmament.” Khrushchev also asserted that the Western Powers were not interested in the problem of disarmament, because “the capitalist monopolies are making profits from the arms race and are interested in its prolongation. . . . They are dragging their feet. . . . to make sure that the problem of disarmament ends in an impasse.”

President Kennedy, on the other hand, was more analytical in his approach. In his radio-television address on the Vienna meeting, which he gave on 6 June 1961, the President began by describing his impressions of the meeting, and explaining its importance. Next, he drew sharp contrasts between “free-world” and “communist

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11 The Soviet texts were coded from both the original Russian and the English translations to determine whether or not translations from Russian to English changed any ontological assumptions. A detailed comparison revealed that they did not.

12 Stage II: Radio-television address by President Kennedy on the Vienna meeting, 6 June 1961; radio-television address by Premier Khrushchev on the Vienna meeting, 15 June 1961; United States note to the Soviet Union regarding the nuclear test-ban negotiations, 17 June 1961; Soviet note to the United States regarding the nuclear test-ban negotiations, 5 July 1961; statement by Premier Khrushchev regarding the proposed ban on atmospheric tests, 9 September 1961; and statement by President Kennedy on nuclear tests, 2 November 1961.

Stage III: Letter from Premier Khrushchev to President Kennedy, 19 December 1962; letter from President Kennedy to Premier Khrushchev, 28 December 1962; address by President Kennedy at The American University, 10 June 1963; interview of Premier Khrushchev with Pravda and Izvestiya editors, 15 June 1963; statement by the Acting U.S. Representative (Stelle) to the Eighteen-Nation Disarmament Committee, 19 June 1963; statement by Premier Khrushchev at Berlin, 2 July 1963; radio-television address by President Kennedy, 26 July 1963; and interview of Premier Khrushchev with Pravda and Izvestiya correspondents, 27 July 1963.
views” of the world and analyzed the communist theory of “wars of liberation.” Kennedy closed his address by outlining in detail how the United States should use its resources to counter Soviet advances. For example, he advocated training and equipping the military forces of less developed countries, encouraging better administration and better education, as well as tax and land reform to assist countries achieve “a better life for the people.” Although he stressed the challenge of communism, Kennedy avoided propaganda attacks on Khrushchev and the USSR. At one point he even admitted that Khrushchev was correct in saying that there are many disorders in the world, and “he should not be blamed for them all.”

President Kennedy’s address at The American University, which he delivered on 10 June 1963, contained a detailed analysis of the concept of peace. He began by defining peace and contrasting real peace with nuclear warfare. He went on to describe “a more practical, more attainable peace” based on “a series of concrete actions and effective agreements.” The middle of the address was an examination of American attitudes toward the Soviet Union that played up the common interests of the two countries. This was followed by a description of concrete steps that can be taken to reduce tensions, including the announcement that the United States, Great Britain, and the Soviet Union “will shortly begin in Moscow looking toward early agreement on a comprehensive test-ban treaty. And, to make clear our good faith and solemn convictions on the matter, I now declare that the United States does not propose to conduct nuclear tests in the atmosphere so long as other states do not do so.”

Cognitive Maps: 1961–62

Cognitive maps of the Khrushchev and Kennedy texts from Stage II of the negotiations (1961–62) make the differences in their interpretations of political “reality” clearly accessible. The processual coding of Premier Khrushchev’s address of 15 June 1961, for example, shows three sets of interrelated processes (see Figures 2–4A). One of these processes, Establishing Relations Between Socialist and Capitalist Countries, which leads to the goal of Peace, is related to another process, Solving Controversial Problems in Relations Between States, a process that promotes General and Complete Disarmament. Inspection of the processual map (see Figure 2) suggests that although the contributions of one actor, the Soviet Union, have intensified the process (as shown by six examples), the other actors, the Western Powers, are working to inhibit the process (as shown by two examples).

The second set of interrelated processes are Implementation of Test-Ban Treaty, which leads to Security in USSR, and Ending of Nuclear Weapons, which leads to Preservation of Peace (see Figure 3). These processes are less intense, because of processes and actions inhibiting them, such as the arms race and existing stockpiles of nuclear weapons. Khrushchev’s text describes two processes that lead to the same result: The People’s Movement for Progress and a Better Life and Human Development both promote Socialism (see Figure 4A). This process is an example of metamorphosis-based representation because it describes Human Development in distinctive stages—Slavery, Feudalism, Capitalism, and Socialism (see note 1).

Premier Khrushchev’s radio and television address of 15 June 1961 also contains an example of how he translates Kennedy’s views into a processual frame. Toward the end of the address Khrushchev makes Kennedy “speak” processually. Khrushchev noted that he and Kennedy interpret peaceful co-existence differently: “The President’s idea is to build up something like a dam against the people’s movement to establish social systems in their countries.” Implications of this kind of translation are discussed below.
The processual coding of President Kennedy’s texts from Stage II of the negotiations revealed two processes in his speech of 6 June 1961. One of them, Revolution, which promotes the goal of Communism in New and Less Developed Countries, reflected Kennedy’s efforts to summarize Khrushchev’s stated views at the Vienna meeting in processual terms:

![Diagram of Security in USSR and Preservation of Peace]

- Executive body of control system headed by one man
- Control by three groups of states
- Western alliance tries to control USSR by a “neutral” person
- US & USSR banning nuclear weapons tests
- US & USSR keep existing stocks
- Stockpiling and production of nuclear arms by all
- Ending of Nuclear Weapons
- Security in USSR
- Preservation of Peace

Examples:
1) U.N. Secretary General in the Congo

What is the essence of our proposal? Allow me to give a concrete summary of them.

In the beginning we considered it possible to agree with the Western Powers’ proposal that the executive body of the control system of the test ban be headed by one man, appointed by agreement of the sides. The events in the Congo, however, have made us cautious; they taught us sense, as the saying goes. The Government of Congo asked the United Nations for help in the struggle against Belgium colonialists who were seeking to restore their colonial domination over the country. In this connection the Security Council and General Assembly adopted a number of good decisions. But what happened after that? Mr. Hammarskjold, who claims to be a neutral person, taking advantage of his position as UN Secretary General, interpreted and put into practice these decisions of the Security Council and General Assembly to suit the colonialists. Was this not proved by the base murder of Premier Patrice Lumumbe, head of the same government which had asked for the help of the UN armed forces against the outrages of the colonialists? The tragedy of the Congolese peoples has clearly shown the consequences which may result from the arbitrariness of the UN executive body in the person of a single secretary general. This is demanded by the interests of the peoples and the interests of the preservation of peace.

It is precisely for this reason that the Soviet Government has arrived at the firm conviction that control over the observance of nuclear weapons test ban treaty must be implemented with the participation of the three existing groups of states.

The Soviet Union has never demanded, nor does it demand, any exceptional status for itself. We do not seek to dominate the control commission, but neither shall we allow anyone to dominate us. We demand for ourselves precisely the same rights as the other parties to the treaty will have.

What do the Western Powers want? They want to impose a “neutral” person of some kind on us as the sole interpreter and executor of the treaty. In other word, they want to force a new Hammarskjold off on us in this post, one that would supervise control over all our territory. Frankly, they want a man to allow them to conduct espionage within our territory. To this, of course, we cannot agree; and we will never agree because this concerns the security of our country.

It is clear to everyone, of course, that the ending of nuclear weapons tests alone will not be enough to prevent a nuclear missile war. We can ban nuclear weapon tests, but the existing stocks will remain, the production of these arms may continue, and, consequently, their test alone will not act as some sort of dam to bar the way to the arms race.

Fig. 3. Khrushchev’s radio-TV address, June 15, 1961, continued.
Generally, Mr. Khrushchev did not talk in terms of war. He believes the world will move his way without resort to force. Most of all, he predicted the triumph of communism in the new and less developed countries. He was certain that the tide was moving his way, that the revolution would eventually be a Communist revolution, and that the so-called “wars of liberation,” supported by the Kremlin, would replace the old methods of direct aggression and invasion.

Kennedy replied in processual terms to his understanding of Khrushchev’s argument by describing the Struggle for Freedom, which leads to Liberty, Independence, and Self-Determination. However, he shifted back to a procedural mode to describe how the Communists exploit misery and despair in the new and poorer nations to “ride their crest of victory” (see Figures 7 and 7A).

A procedural coding of Khrushchev’s texts from Stage II of the negotiations produced cognitive maps consisting of general concepts linked to each other as isolated pairs with few chains or sequences of interrelated concepts (see

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The changing of the social and political life of society is an inevitable process. It does not depend on agreement between statesman. If anyone should display such folly and seed to get agreement on this question, he would thereby display his own worthlessness and lack of understanding of the events and the changes taking place in the world.

It is impossible to erect an obstacle to the people’s movement for progress and a better life. This has been proved by the entire course of human development. In its time there was slavery; this was replaced by feudalism, and in turn by capitalism. One system replaced another, because the system was more progressive. One should cite the example of the United States itself which emerged in the struggle against the colonial yoke of Britain. The American people waged a bitter liberation struggle and won independence by force. In its time the United States considered such a course of events normal.

Fig. 4A. Khrushchev’s radio-TV address, June 15, 1961, continued.
Figure 4B. On the other hand, the cognitive map representations based on a procedural coding of Kennedy were typical of Western political actors: interrelated chains of concepts that suggest causal explanation (see Figures 6, 7, and 7A).

**Cognitive Maps: 1962–63**

The processual coding of Khrushchev's texts for Stage III of the negotiations (1962–63) produced cognitive maps that were similar to the previous stage. In a letter written to President Kennedy in December 1962, for example, Khrushchev links two processes, Reaching a Mutually Acceptable Agreement, which promotes the Cessation of Nuclear Tests, and Development of Peaceful Relations, which leads to the Prevention of War (see Figure 5). As before, the actions of the USSR and other

<table>
<thead>
<tr>
<th>Agreement between statesmen</th>
<th>Changing of social and political life</th>
</tr>
</thead>
<tbody>
<tr>
<td>American people's liberation struggle</td>
<td>Independence from Britain</td>
</tr>
<tr>
<td>U.S. interference in affairs of other countries</td>
<td>Prevention of liberation ideas (ideas of Marxism-Leninism)</td>
</tr>
<tr>
<td>People's rise to struggle</td>
<td>US announcement of communist scheming</td>
</tr>
<tr>
<td>Noninterference</td>
<td>Peace</td>
</tr>
<tr>
<td>Assistance of imperialist states to reactionary forces</td>
<td>Great complications</td>
</tr>
</tbody>
</table>

Yet now when the peoples rise to struggle against reactionary regimes and their oppressors, the United States tries to interfere in the affairs of these countries to preserve the old regimes. The representatives of imperialist states want to find a way to prevent liberation ideas, the ideas of Marxism-Leninism, from spreading further. When the people of a capitalist or colonial country, displaying their discontentment with the existing system, seek to change it and establish a new system corresponding to their interests, the governments of the imperialist countries immediately announce that it is communist scheming, the hand of Moscow, etc. They are not averse to using fabrications as a pretext for interfering in the domestic affairs of other countries.

The assistance of imperialist states to reactionary forces in other countries is fraught with great danger and could lead to great complications. The Soviet people and other freedom-loving peoples firmly stand for noninterference in the domestic affairs of any country. This is an essential condition for insuring peace. Every people has the right to independence and free national existence, and no state should interfere in the internal affairs of other countries. A class struggle is underway in the capitalist countries. The peoples are fighting against their oppressors, against reactionary regimes. It is impossible to regulate this processes by agreement. He who would seek to reach an agreement on this question would only show that he does not understand history and does not understand the laws of development of society.

**FIG. 4B.** Khrushchev's radio-TV address, June 15, 1961, continued.

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13 The only part of Khrushchev's cognitive map that is similar to a typical Western-style representation is the fragment that describes his portrayal of consequences of U.S. policy: "U.S. interference in the affairs of other countries" leads to both "prevention of liberation ideas" and "preservation of old regimes" (see Figure 4B).
It seems to me, Mr. President, that the time has now come to put a stop to nuclear tests once and for all, to make an end of them. This is a very propitious moment for doing so. The period of maximum crisis and tension in the Caribbean is behind us. We are now free to consider seriously other urgent international matters, in particular a subject which has long been ripe for action—the cessation of nuclear tests. In my view, the definite improvement which has taken place in the international situation should facilitate such endeavours.

The Soviet Union does not need war. I believe that war holds out no bright prospects for the United States either. Whereas in the past, after every war, the United States found itself with an increased economic potential and an accumulation of fresh wealth, today, with the use of modern nuclear missiles, war will span seas and oceans in a matter of minutes. A thermonuclear holocaust will mean vast numbers of casualties and tremendous suffering for the people of the United States as for the other peoples of the world. To prevent this from happening, we must, on a basis of complete equality and due consideration for each other’s interests, develop peaceful relations between us and resolve all controversial questions by means of negotiations and mutual concessions....


actors are not viewed as intermediate steps; rather, they are activities that intensify or inhibit long-term processes.

After coding Khrushchev’s texts from 1963, we discovered different types of complex structures. An interview conducted with Khrushchev in June 1963 describes two processes, Peaceful Coexistence Between Social Systems, which leads to Avoidance of Thermonuclear War, and Solving International Problems Through Negotiation, which leads to a Test-Ban Treaty (see Figures 8 and 9). A procedural coding of the same text produced a Western-style cognitive map containing explanations with four or five causal linkages. For example, Khrushchev argues that national means of control would lead to the detection of nuclear explosions and have a negative effect on attempts to violate a test-ban agreement, which would detract from a guarantee to prove violations, a guarantee that promotes a conclusion of a test-ban agreement (see Figure 9). This text is also notable because it summa-
No such hope emerged, however, with respect to the other deadlocked Geneva conference, seeking a treaty to ban nuclear tests. Mr. Khrushchev made it clear that there would not be a neutral administrator, in his opinion, because no one was truly neutral; that a Soviet veto would have to apply to acts of enforcement; that inspection was only a subterfuge for espionage, in the absence of total disarmament; and that the present test-ban negotiations appeared futile. In short, our hopes for an end to nuclear tests, for an end to the spread of nuclear weapons, and for some slowing down of the arms race have been struck a serious blow. Nevertheless, the stakes are too important for us to abandon the draft treaty we have offered at Geneva.

Fig. 6. Radio-TV address by President Kennedy on the Vienna Meeting, June 6, 1961.

But I believe just as strongly that time will prove it wrong, that liberty and independence and self-determination, not communism, is the future of man, and that free men have the will and the resources to win the struggle for freedom. But it is clear that this struggle in the area of the new and poorer nations will be a continuing crisis of this decade.

Mr. Khrushchev made one point which I wish to pass on. He said there are many disorders throughout the world and he should not be blamed for them all. He is quite right. It is easy to dismiss as Communist-inspired every anti-government or anti-American riot, every overthrow of a corrupt regime, or every mass protest against misery and despair. These are not all Communist-inspired. The Communists move in to exploit them, to infiltrate leadership, to ride their crest of victory. But the Communists did not create the conditions which caused them.

Fig. 7. Radio-TV address by President Kennedy on the Vienna Meeting, June 6, 1961, continued.
The Limited Test-Ban Agreement

- Opportunity, exploitation and leadership
- Misery and despair
- Mass protest
- Anti-Government riot

FIG. 7A. Radio-TV address by President Kennedy on the Vienna Meeting, June 6, 1961, continued.

rizes President Kennedy’s speech at The American University in procedural terms. Khrushchev reports, for example, that Kennedy “rightly says that in present conditions a world war makes no sense since it inevitably implies tremendous human losses and the destruction of material values created by the labor of many generations.”

The procedural coding of President Kennedy’s texts in Stage III, especially of Kennedy’s speech at The American University, produced a complex cognitive map with many causal chains (see Figures 10 and 11 for fragments of this map). Processual coding, on the other hand, revealed no processes that were central to his argument.

We can see the emergence of new knowledge structures within U.S.-Soviet discourse on the Limited Test Ban. This does not mean that the pre-understandings have changed; rather, the new knowledge structures might be considered to be tools to improve mutual understanding in international relations. Furthermore, special institutions might be created to support the new knowledge structures; for example, there might be a change in the negotiation institution (e.g., the use of different types of experts with professional experience that corresponds to the new knowledge structures).

A pre-understanding is not the subject of reflection. To change a pre-understanding is a very painful thing that implies some degree of institutional change. In a specific situation, institutional change might stimulate changes in political culture, but that is a very long process.

In the Soviet Union, after the Cuban Missile (Caribbean) Crisis, Khrushchev changed his view of the United States, and its relationship to the Soviet Union. He concluded that it was impossible to block the actions of the United States, because this might endanger the peace of the world. Instead, it was necessary to engage the United States in real negotiations, an activity that would require new negotiating instructions. Burlatsky (1991) was invited to become Khrushchev’s advisor and speech writer, and new people became involved in the work of the International Department of the Central Committee. Because he was personally involved in the

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14 Note the differences from the earlier stage of the negotiations, where quotations from Western political discourse were denied, rather than affirmed, as in this statement.

15 “The Missile Crisis did not change the position of the officials, but it changed the way of thinking of my father. . . . He really wanted to stop all tests, instead of just above ground tests. . . . It was a different way of thinking. He made his decision. He felt his responsibility.” Interview with Sergei Khrushchev on 15 October 1993.

16 After the Cuban Missile (Caribbean) Crisis, instructions for the test-ban negotiators were considerably revised. Interview with Oleg Troyanavsky, who was Khrushchev’s staff assistant for foreign policy, on 20 January 1994.
The statement by President John Kennedy of the United States attracted attention both in the United States and other countries of the world, including the Soviet Union. In this speech the President touched upon the most important issues of our time: war and peace in the conditions when nuclear weapons assume a colossal destructive force and their stockpiles are continuously increasing. I think that the Soviet people have been interested in familiarizing themselves with the speech of the US President, since this speech was a step forward in a realistic appraisal of the international situation and stressed the need of finding ways to rid mankind of the arms race and the threat of a thermonuclear world war.

World opinion and all the Soviet people know full well that the Soviet Government in its foreign policy has always proceeded from the Leninist principle of the peaceful coexistence between states with differing social systems. Our government made specific proposals on an end to the arms race, general and complete disarmament, a nuclear test ban, the setting up of nuclear-free zones in various regions of the world, the withdrawal of foreign troops from alien territories, the conclusion of the peace treaty with Germany and the solution on this basis of the problem of West Berlin, and the conclusion of a nonaggression pact between the members of the North Atlantic bloc -Nato and the parties to the Warsaw Pact.

Many instances could be cited of the specific, purposeful activity of the Soviet Union both within the framework of the United Nations and in various commissions, committees, and subcommittees, where practical proposals were made on the aforementioned and many other disputed and outstanding issues.

President Kennedy in his speech emphasizes the presence of a real threat to the world, including the United States, arising from the arms race and the stockpiling of a vast amount of nuclear weapons. He rightly says that in present conditions a world war makes no sense since it rightly remarks that the arms race, if it is not checked, can lead to a military catastrophe.

FIG. 8. Interview with Premier Khrushchev, June 1963.
As is well known, test ban talks have been held for several years. Now, too, many speeches are being made in Geneva on this topic. On what does the question rest? The Western countries advanced their terms on a certain number of inspections for the conclusion of a test ban agreement. What do they want? Essentially, they want Soviet territory to be opened to spies from NATO military headquarters.

The presentation of this demand shows that the government of the Western states may distrust the foundation of relations between nuclear powers. But if one adopts such views, it turns out that it will be impossible to solve any disputed international problem.

The Soviet Government has stated, and does state, that it will not agree to throw open territory of our country for inspection for the purpose of espionage. Science has proved the possibility of detecting nuclear explosions through national means of control. We think the President himself is well aware of this and, one would think, so is the audience he is addressing. Besides, we have agreed to accept the proposals of the British scientist and we repeat our argument, to the installation of a limited number of automatic seismic stations for observation purposes.

National facilities of detection combined with automatic seismic stations are a dependable guarantee to ascertain any possible attempts to violate a test ban agreement. It will be recalled that we agreed to two or three inspections to check the discontinuation of underground tests. And we did this for political considerations. This was, so to speak, a step meeting the desires of the other side halfway. It must be regretted that our proposal was not properly appreciated by the partner of the talks.

What do we lack today? We lack the desire of the Western powers to reach an agreement and to abandon playing at negotiations. In the regard to the Soviet Union, we are ready to sign an agreement in Moscow to try once again to reach an agreement on this question. But the success of this meeting will depend on the luggage the United States and British representatives bring with them to our country.

FIG. 9. Interview with Premier Khrushchev, June 1963, continued.
negotiations, Khrushchev's own knowledge structures with respect to the issue of nuclear weapons and the test-ban negotiations were transformed and expressed by a greater use of procedural representations, as we have found in our analysis of his speeches and interviews.

**Conclusions**

An analysis of cognitive maps constructed from exchanges between President Kennedy and Premier Khrushchev in the early 1960s supports our expectation that Khrushchev is inclined to use processual representations based on a holistic pre-understanding, while Kennedy's representations are largely procedural, based on a structural view of political activity. Khrushchev's speeches and interviews were largely processual, except for his statements after the middle of 1963, while Kennedy's addresses and letters reflect, for the most part, procedural representations.

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What kind of peace do I mean? What kind of peace do we seek? Not a Pax Americana enforced on the world by American weapons of war. Not the peace of the grave or the security of the slave. I am talking about genuine peace, the kind of peace that makes life on earth worth living, the kind that enables men and nations to grow and to hope and to build a better life for their children - not merely peace for Americans but peace for all men and women; not merely peace in our time but peace for all time.

I speak of peace because of the new face of war. Total war makes no sense in an age when great powers can maintain large and relatively invulnerable nuclear forces and refuse to surrender without resort to those forces. It makes no sense in an age when a single nuclear weapon contains almost 10 times the explosive force delivered by all the Allied air forces in the Second World War. It makes no sense in an age when the deadly poisons produced by nuclear exchange would be carried by the wind and water and soil and seed to the far corners of the world.

Today the expenditure of billions of dollars every year on weapons acquired for the purpose of making sure we never need to use them is essential for keeping the peace. But surely the acquisition of such idle stockpiles which can only destroy and never create is not the only, much less the most efficient, means of assuring peace.

Some say that it is useless to speak of world peace or world law or world disarmament - and it will be useless until the leaders of the Soviet Union adopt a more enlightened attitude. I believe we can help them do it. But I also believe we must examine our own attitude, as individuals and as a nation, for our attitude is as essential as theirs.

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FIG. 10. Address by President Kennedy at the American University, June 10, 1963.
TheLimitedTest-BanAgreement

USGovernment

efforts/goals

USdeclarationtohalt
testsinatmosphere

Treatytobanucleartests

Armscontrol

Risks of accidental war

Increased security

Spread of arms race

High level discussions

The one major area of these negotiations where the end is in sight, yet where a fresh start is badly needed, is in a treaty to outlaw nuclear tests. The conclusion of such a treaty, so near and yet so far, would check the spiraling arms race in one of its most dangerous areas. It would place the nuclear powers in a position to deal more effectively with one of the greatest hazards which man faces in 1963, the further spread of nuclear arms. It would increase our security, it would decrease the prospects of war. Surely this goal is sufficiently important to require our steady pursuit, yielding neither to the temptation to give up the whole effort nor the temptation to give up our insistence on vital and responsible safeguards.

I am taking this opportunity to announce two important decisions in this regard. First: Chairman Khrushchev, Prime Minister Macmillan, and I have agreed to that high level discussions will shortly begin in Moscow looking toward early agreement on the comprehensive test ban treaty. Our hopes must be tempered with the caution of history, but with our hopes of mankind.

Second: to make clear our good faith and solemn convictions on the matter, I now declare that the US does not propose to conduct nuclear tests in the atmosphere so long as other states do not do so. We will not be the first to resume. Such a declaration is no substitute for a formal binding treaty, but I hope it will help us achieve some. Nor would such a treaty be a substitute for a formal binding treaty, but I hope it will help us achieve it.

FIG. 11. Address by President Kennedy at the American University, June 10, 1963, continued.

A comparison of the texts from each of the two time periods that were studied, Stage II (1961-62) and Stage III (1962-63) of the negotiations, supports the second expectation of the research; namely, that as negotiators move closer to an agreement, new knowledge structures emerged. In this case, new procedural knowledge structures emerged in Khrushchev’s discourse, while Kennedy preserved, for the most part, previous representations.17

The changes in representations over time provide evidence for the notion that the success of negotiation is “related to the degree to which the parties can construct a shared discursive space, which amounts to their building a shared reality” (Bonham, Jönsson, and Shapiro, 1991). Such change may be an important and integral step in the process of justifying an agreement. A related discovery, that Kennedy and Khrushchev can “translate” each other from procedural to processual or vice versa, provides additional evidence for the shared reality-building process that may be a precondition to success negotiation.

This analysis also suggests that learning can take place in high-level international negotiation. The emergence of new types of representation on the part of Premier Khrushchev was a break with the past in order to produce new international relationships. Without this change an agreement with the United States might have been more difficult, if not impossible. The situation in Russia today is approximately the same as old discursive practices are being replaced by new ones to promote the survival of the country.18

17 An analysis of Soviet political texts of the period from the Cuban Missile (Caribbean) Crisis to the late 1980s also suggests a shift from processual to procedural representations. See Kobozeva and Parshin (1993).

References


