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## Systemism, Social Mechanisms, and Scientific Progress: A Case Study of the International Crisis Behavior Project

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Systemism and social mechanisms, as articulated by Bunge, are concepts with great potential for application to assessment of research progress. This study will use the conceptual tools made available by systemism and social mechanisms to evaluate the International Crisis Behavior (ICB) Project as a scientific effort toward the greater understanding of crises in world politics. Systemism and social mechanisms are articulated as key concepts in the quest for scientific progress. The goals and basic characteristics of the ICB Project as a scientific venture then are described. The ICB Project is assessed in terms of how well it lives up to standards for scientific progress. Finally, conclusions and ideas about future research are presented. The basic finding of this study is that the ICB Project is quite successful in meeting the standards for scientific progress entailed by the concepts of systemism and social mechanisms.

*Keywords:* scientific progress; international relations; international crises; paradigm

Systemism and social mechanisms are concepts from the philosophy of science with great potential for application to assessment of progress in interdisciplinary fields. One example is international relations, which shows signs of convergence in recent decades toward a more self-consciously systematic approach. Research increasingly features reproducible evidence in the form of comparative case studies within a common frame of reference and project-based, "large-N" data analysis (King, Keohane, and Verba 1994; Midlarsky 2000). The International Crisis Behavior (ICB) Project, which started three decades ago and continues to generate data collection and analysis on

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a substantial scale, includes both case studies and aggregate data over a substantial period of the twentieth century. The Project provides an ideal starting point for applied philosophy of science as described above. Evaluation of scientific progress in international relations remains relatively uncommon, aside from passing normative references to "paradigms" or "research programs" and related citations of Kuhn or Lakatos, normally in introductory paragraphs (Kuhn 1962; Lakatos 1970). These references invariably are long forgotten by the time a study reaches its end, with the principal reason being a lack of operational relevance with regard to paradigm or research program as concepts.<sup>1</sup> The practical utility of systemism and social mechanism, the concepts articulated by Bunge (1996, 1998a, 1998b, 2004), encourages social scientists in general and those in the field of international relations in particular to move in that direction and away from approaches that are more strictly normative in character.

This study will use the conceptual tools made available by systemism and social mechanisms to evaluate the ICB Project as a scientific effort toward the greater understanding of crises in world politics. The analysis unfolds in four stages. First, systemism and social mechanisms are put forward as key concepts in the quest for scientific progress. The goals and basic characteristics of the ICB Project as a scientific venture are described in the second stage. Third, the ICB Project is assessed in terms of how well it lives up to the standards for scientific progress entailed by systemism and social mechanisms as concepts. The fourth and final stage offers conclusions and ideas about future research.

### SYSTEMISM AND SOCIAL MECHANISMS

Systemism, as an alternative to holism or reductionism, is articulated effectively by Bunge (1996, 1998b, 2004), so very little time will be spent in reviewing its main characteristics. In recognition of both macro- and micro-level entities and processes, systemism calls for a

1. Recent exceptions within international relations include James (2002a; see also James 2002b) and Elman and Elman (2003). These studies build on and apply existing frameworks from the philosophy of science, with the former placing an emphasis on systemism (Bunge 1996) as a means toward upgrading structural realism (as noted later, a general approach within the field) and the latter evaluating more focused areas of research as respective paradigms. Neither of these studies, however, makes use of the concept of social mechanisms, which will play a central role in the present exposition.

full set of linkages within theorizing. Thus, from the systemist point of view, every system entails composition, environment, and structure, with macro-macro, macro-micro, micro-micro, and micro-macro linkages that specify functional form (i.e., step level, linear, curvilinear, etc.). By contrast, the usual articulation of theory is either through holism or reductionism. Holism focuses exclusively on macro-level connections, and reductionism includes only micro linkages, so each is inherently incomplete. In sum, systemism is distinguished from "garden variety" approaches toward theorizing as a result of its insistence upon completeness.

Systemism, on the surface, would seem to make relatively modest demands until it becomes obvious that theories, regardless of the field in question, generally do not live up to its standards. For example, in international relations, consider the performance of theories based on interstate power relations, which dominated scholarly discourse and even practice during most of the past century. Neither the time-honored theory known as "power politics" or "political realism," nor the more recently prominent variant labeled as "neorealism" or "structural realism," is put forward in a way that meets the criteria of systemism. Political realism emphasizes the relentless desire for power by national leaders in accounting for interstate war, while neorealism asserts that the distribution of capabilities among great powers can explain the levels of cooperation and conflict observed in the system. Political realism and neorealism represent, respectively, reductionism and holism. The former focuses on the beliefs and perceptions of individual leaders of states, while the latter emphasizes the properties of states in a collective sense. These theories, from the standpoint of systemism, are at best partial contributors to the study of international relations (James 2002b).

All of this leads up to a fundamental point about explanation: Understanding a system in a complete way requires a grasp of both action and motivation behind it. Thus, according to Bunge (1998b, 50), systemists "do not oppose the mental (or *emic*) to the behavioural (or *etic*). Instead, they regard each of these as being sometimes the source or cause (or independent variable) and at other times the sink or effect (or dependent variable). Accordingly, systemists use constructs of both kinds, provided they can find objective indicators of the ideational and valuational processes—that is, provided they manage to 'get inside people's heads' in a testable manner, at least by questioning and at best by brain imaging." In other words, to study either the behavioral or mental worlds exclusively would amount to the

imposition of a "flawed dichotomy" in whatever field might be at issue (Brecher 1999).

Clear illustrations are provided by the realist theories from a moment ago. Power politics and structural realism focus on the *emic* and *etic* worlds, respectively, with predictably self-limiting consequences. Power politics emphasizes the inherent quest for power, which derives from evil that is inferred to exist within human nature itself (Morgenthau 1946; Morgenthau and Thompson 1985). Political realism therefore becomes deterministic and consequently at odds with behavioral research (Vasquez 1998; James 2002a). Structural realism is exactly the opposite, so it trades in one set of problems for another. This theory is based on a metaphor with an oligopolistic market; the general hypothesis is that an international system with two rather than a greater number of major powers (i.e., bipolarity versus multipolarity) will be more stable (Waltz 1979). This highly aggregated view of international politics effectively brackets the mental world: self-interest among national leaders becomes an axiom rather than a subject for investigation (James 2002a, 2002b). In sum, even the most established and prominent theories in international relations, such as power politics and neorealism, tend to gravitate toward either the *emic* or *etic* worlds, while systemism advocates that research should emphasize both in order to maximize scientific progress.

Along with its call for completeness, systemism also requires that substantive theories include multiple specific mechanisms (Mayntz 2004). This becomes virtually true by definition because of the need for linkages to be expressed in qualitatively different terms from each other (e.g., macro-macro, etc.). Social mechanisms also are essential to specify the functional form of any given relationship. For example, if *X* is put forward as a cause of *Y*, is the connection monotonic or step level? A mechanism of some kind must be hypothesized in order to address this question.

Social mechanisms, as a natural result of their crucial role within systemism and the analysis of cause and effect, are at the forefront of this collection of essays in honor of Mario Bunge's distinguished career.<sup>2</sup> Bunge (2004) provides a valuable overview of key aspects related to social mechanisms. A mechanism is a process in a system

2. As Mayntz (2004) observes, many definitions exist for the concept of a social mechanism. Exploring the nuances of concept formation in other contexts is beyond the scope of the present exposition, so the approach taken here will converge with the exegesis from Bunge (2003), along with closely related ideas put forward by others in this symposium.

and, to have explanatory value, must be consistent with scientific laws. Put simply, an explanation requires a lawful mechanism. A mechanism is "only *identified* when the process linking an outcome and specific initial conditions is spelled out" (Mayntz 2004).

Articulation of social mechanisms requires an approach that complements the usual search for statistical regularities among social scientists as a way of testing hypotheses. Measures of association give some sense of the possible strength of a causal connection, but an assessment of cause and effect requires something beyond a strictly phenomenological approach. Thus, mechanisms include *unobservables* in the hypothesized processes. Specification of causal chains, which necessarily include nonobservables, "is what distinguishes propositions about mechanisms from propositions about correlations" (Mayntz 2004). In other words, a more complete theoretical approach requires "mechanismic" hypotheses that gain credibility through consistency with empirical evidence (Bunge 1998a, 283-84).<sup>3</sup>

One example, related to biological growth, should be sufficient to establish the crucial role of mechanismic hypotheses in scientific explanation (Bunge 1998a, 282-83): "Empirical studies on the growth of individuals and populations can be summed up and generalized by growth curves. Since these curves refer to limited time intervals, they can be fitted by infinitely many functions relating to the size and age of the biological entity. Every such function will be a phenomenological hypothesis on growth. In the absence of conjectures concerning the growth mechanism we are unable to decide which among these infinitely many phenomenological hypotheses is the truest." For population change, birth and death rates, along with in- and out-migration, stand out among the obvious empirical variables that combine in some way to explain population change. Explanations for the dynamics of each variable and their connections to each other will create the need for mechanismic hypotheses. For example, birth and death rates may tend to be correlated at many times in history, but an answer to the question of "why?" moves explanation down to a deeper level and entails unobservables that describe the processes of cause and effect.

Mechanisms, in comparison to covering laws, are relatively out of favor among social scientists (Tilly 2004). This is a troubling observation because it suggests that explanations will be limited to the "black

3. For a skeptical interpretation, which asserts that mechanisms may be too difficult to identify for highly complex systems, see Sawyer (2004).

box" variety. Even presumably more cause-oriented statistical analyses, such as that offered by regression equations, still is limited to appraising the strength of association between variables rather than explaining *how* they affect each other. A good place to look for hopeful exceptions to a strictly phenomenological approach toward international relations is in the realm of large-scale, team-oriented research. Given the scope of such efforts, propositions about both correlations and mechanisms should be in evidence. Thus, the next section begins the process of assessment by introducing a major research project from international relations in terms most relevant to the preceding discussion.

### AN OVERVIEW OF THE ICB PROJECT

ICB Project research began in 1975 as a reaction to a lack of systematic knowledge about crises in world politics (Brecher 1977, 1980b). While large-N studies of interstate war had existed for some time, no data set on crisis existed to complement other event-based compilations in the quest for understanding of international conflict. The ICB Project's principal goals are as follows (Brecher, James, and Wilkenfeld 2000, 38):

1. accumulation and dissemination of knowledge about interstate crises and protracted conflicts;
2. generation and testing of hypotheses about the effects of crisis-induced stress on coping and choice by decision makers;
3. discovery of patterns in key crisis dimensions—onset, actor behavior and crisis management, superpower activity, involvement by international organizations, and outcome; and
4. application of the lessons of history to the advancement of international peace and world order.

Thus, the project intends to contribute both pure and applied knowledge about crises in world politics. ICB's extensive publications, as enumerated by the Project's founder and continuing director, include theorizing, reviews of the literature, aggregate data analysis, case studies, and interim progress reports (Brecher 1999, 252-56).

One key feature of the ICB Project, to be linked in the next section in more detail to systemism, comes out through its bifurcated concept formation. Crisis is defined at both the actor or state (i.e., micro) level and the system or international (i.e., macro) level. At the level of the

system, two conditions define an international crisis: "(1) a change in type and/or increase in intensity of *disruptive*—that is, hostile verbal or physical *interactions* between two or more states, with a heightened probability of *military* hostilities, which in turn (2) destabilizes their relationship and *challenges* the *structure* of an international system—global, dominant, or subsystem." At the actor level, three conditions define a foreign policy crisis, and each is perceived by the central decision makers for a state: "a *threat to one or more basic values*, along with an awareness of *finite time for response* to the value threat, and a *heightened probability of involvement in military hostilities*" (Brecher, James, and Wilkenfeld 2000, 39-40).

These definitions are connected to each other in that each international crisis encompasses one or more foreign policy crises. The former concentrates on actions and events *per se*, while the latter focuses on how leaders as participants perceived their state's involvement. For example, the Berlin Blockade from June 7, 1948, to May 12, 1949, is included in the ICB data set on international crises as a single case, while four states—the USSR, France, the United Kingdom, and the United States—appear as actors in the parallel data set on foreign policy crises. The international crisis began when the Western powers published a plan to integrate their zones in occupied West Berlin, which caused the USSR to perceive a foreign policy crisis in terms of a major threat to its influence in Europe. When the Soviet Union responded with a blockade of West Berlin, that triggered a crisis for the Western powers, who perceived vital interests in keeping the city out of communist control. An airlift ensued and continued until an agreement reached in May brought the blockade crisis to an uneasy ending (Brecher and Wilkenfeld 1997, 342, 343).

ICB's data sets currently span the period from 1918 to 2001. This includes international crises ( $N = 434$ ) and crisis actors ( $N = 956$ ) (International Crisis Behavior Project 2003). At the time of writing, ICB is the only major events data set in the field of international relations with this bifurcated structure. The Project also includes case summaries for all 434 of the international crises, along with 15 article-length and 9 monograph-length case studies (Brecher and Wilkenfeld 1997; International Crisis Behavior Project 2003; Brecher 1999, 255-56).<sup>4</sup> In

4. The ICB Project also includes a dyadic data set created by J. Joseph Hewitt, with 765 pairs of states identified from the main collections noted just above. A "crisis dyad" is a pair of states that satisfies the following conditions: "(1) both are members of the interstate system, (2) at least one of the states satisfies all three of the ICB necessary conditions for crisis involvement, and (3) at least one of the states has directed a hostile

sum, ICB's self-stated agenda for research is vast, and its holdings have become very extensive in terms of both quantitative and qualitative data, so the Project is a natural choice for assessment of scientific value in the context of systemism and social mechanisms.

#### SYSTEMISM, SOCIAL MECHANISMS, AND THE ICB PROJECT

This section will demonstrate that while the ICB Project did not develop with explicit adherence to the principles of systemism and an emphasis on mechanistic propositions, its emphasis on scientific inquiry naturally produced these features.<sup>5</sup> The relevant characteristics of ICB are its focus on both system and actor levels of crisis, the inclusion of both macro- and micro-level conceptual maps, specification of functional form in developing and testing hypotheses and the Unified Model of Crisis, and inclusion of both mechanistic and correlational hypotheses.

One especially notable area of strength for ICB is its focus on both system and actor levels of crisis. In a deeper sense, that reveals a commitment to exploring and connecting the emic and etic worlds. This positive quality is manifested in the combined presence of bifurcated data sets and case studies. ICB includes not only events but perceptions of them. For example, both the triggering act for a crisis and the leaders' perception of the threat are coded at the outset of the case, and outcome variables include both an objective sense of goal achievement and levels of (dis)satisfaction as expressed by those involved in decision making. The Project therefore can look at the ideational aspects of crisis as well as behavior itself.

ICB's research design includes macro- and micro-level conceptual maps. In this context, macro and micro refer to international and foreign policy crises, respectively. The maps are used to create a program of testing that includes all four of the basic linkages in a presumably comprehensive social theory: macro-macro, macro-micro, micro-

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action against the other. Each case in this data set represents an annual observation of each of the crisis dyads over the complete duration of their confrontation" (International Crisis Behavior Project 2003).

5. It should be noted that the author is affiliated closely with the ICB Project as both a theorist and user of the data sets and case studies. For such reasons, the analysis that follows should be regarded as a critique from within rather than outside of the Project.

macro, and micro-micro. It is beyond the scope of this review to go through the literally hundreds of hypotheses tested by either Brecher and Wilkenfeld (1997) in their authoritative *A Study of Crisis* or the many other empirical studies from the Project (Brecher 1999), but an overview of the conceptual maps and selected examples should be sufficient to make the points that (1) ICB's development is consistent, in principle, with systemism's call for completeness in theorizing at the macro and micro levels and (2) further theoretical work is needed to explore the full set of linkages. To facilitate understanding of how things fit together, the ICB macro- and micro-level variable names will appear, respectively, with upper- and lowercase letters.

ICB's macro-level conceptual map includes a series of variables that have gained prominence individually in explaining international conflict processes, along with variables that represent the significant dimensions of crises as events. Each set of variables will be presented, in turn, followed by two brief examples of resulting macro-micro linkages.

For present purposes, the explanatory variables can be organized, as per systemism, in terms of composition, environment, and structure vis-à-vis the international system. Composition at the macro level is represented by three variables—GEOGRAPHY, CONFLICT, and ETHNICITY—that focus on the distribution of characteristics among actors and processes. The GEOGRAPHY variable identifies the degree of proximity between crisis actors, while the CONFLICT variable focuses on whether the case is part of a protracted series including the same actors or exists in isolation. ETHNICITY identifies whether interactions include secessionism and/or irredentism or neither of these factors. The environment is identified by the variable SYSTEM LEVEL, which describes whether the crisis takes place within the dominant system or one of the regional subsystems of international politics. (During the 20th century, for example, the dominant system consisted of Europe, so in that instance the environment consisted of the remainder of the international system.) Two variables, POLARITY and POWER DISCREPANCY, represent structure. POLARITY identifies the number of great powers in the system, while POWER DISCREPANCY focuses on the balance of power between pairs of crisis actors (Brecher and Wilkenfeld 1997, 18).<sup>6</sup>

6. The inclusion vision of structure in international relations, which permits the designation of multiple elements rather than simply the number of great powers, is justified in terms of explanatory potential by James (2002a).

Crisis dimensions at the macro level include direct interactions between and among crisis actors, along with third-party activities.<sup>7</sup> BREAKPOINT/EXITPOINT indicates the times at which the crisis begins and ends, that is, duration. The SETTING variable identifies the values threatened, while CRISIS MANAGEMENT TECHNIQUE identifies the forms of behavior—most notably, as related to violence—used to cope with the crisis once in progress. INTENSITY is a multidimensional concept that includes the number of actors and geostrategic salience of the crisis location, along with four other components. OUTCOME focuses on (non)achievement of goals by the actors, while IMPACT includes four components, for example, change in alliances as a result of the crisis. Third-party activity is represented, respectively, by GREAT POWERS (1918-1945) and SUPERPOWERS (1945-2001), on one hand, and GLOBAL INTERNATIONAL ORGANIZATION INVOLVEMENT and REGIONAL INTERNATIONAL ORGANIZATION INVOLVEMENT, on the other. In each instance, the focus is on what actions these entities took to manage the crisis (Brecher and Wilkenfeld 1997, 18).

ICB's macro variables are used to generate a series of macro-micro propositions. One example, connected to the above-noted structural realist theory, is POLARITY → GREAT POWERS/SUPERPOWERS (i.e., activity), with the basic categories being multipolar and bipolar power structures. As it turns out, 62% (28%) of the crises during the bipolar (multipolar) power structure show either no or very low superpower (great power) activity. This difference points to a higher level of activity during the era with a qualitatively larger number of major powers, which suggests that the pre-World War II era lived up to its image as one of power balancing but without ultimate success, in comparison to the more stable bipolar era of the cold war. Another instance of a macro-micro proposition tested by ICB is GEOGRAPHY → CRISIS MANAGEMENT TECHNIQUE. The level of violence in crisis management is somewhat higher among contiguous states (54% versus 41% for near neighbors and 44% for distant states). Although hardly overpowering, this finding is consistent with both intuition and evidence that contiguity facilitates a wide range of interactions for states, including cooperation and conflict (Hensel 2000, 64-

7. Constraints on space make it feasible to show just one example of a specific variable for each dimension. (The dimension designated as BREAKPOINT/EXITPOINT, for instance, also includes variables that focus on the specific event(s) triggering the crisis and the entity identified as responsible for those actions.) This observation also applies to the micro-level map, to be presented momentarily.

67; see also Vasquez 1993). Many other macro-macro propositions are developed and tested by ICB, but the examples here should be sufficient to give an idea of the range of empirical testing and its connection to major areas of theory within international relations.

ICB's micro-level conceptual map refers to some of the same variables as the macro map, but the level of aggregation becomes different. So, for example, instead of BREAKPOINT/EXITPOINT from the macro map, the micro map includes the variable labeled as trigger, the action that causes the crisis as perceived by the leaders of an individual state. Actor behavior variables include, for instance, decision making (i.e., the size and structure of the decision-making group) and the major response to the crisis trigger (i.e., the level of violence used, the outcome variable). The outcome variable, in this context, refers to the substantive result as perceived by the leadership of the crisis actor. Third-party activity by great powers and superpowers, along with global and regional security organizations, also appear in the micro map, but this time as perceived by the individual actor. The micro map also includes a series of attributes at the level of the actor: age of the state, size of territory, regime type (i.e., democratic or autocratic), capabilities (e.g., power status), value(s) perceived to be threatened (e.g., gravity), domestic conditions (i.e., economic, social, and political), and ethnicity (i.e., secessionist and/or irredentist conflict or neither).

ICB is found, as in the macro-macro context, to have developed and tested a wide range of micro-micro propositions. Two of these are offered here as illustrations. The hypotheses focus on the same dependent variable, namely, the identity of the triggering entity. These propositions are, respectively, (1) regime type → triggering entity and (b) age of state → triggering entity. The basic expectation is that autocracies are more likely than democracies to play the role of triggering entity. As it turns out, the triggering entities for foreign policy crises are distributed as follows: democratic (33%) and autocratic (67%) (Brecher 1993, 173). This result, like so many others in ICB, is valuable in triangulating other research findings, in this instance referring to the building consensus in favor a "democratic peace" (Ray 2000). The other micro-micro example is that triggering entities divide as follows in terms of a state's age: 34% and 66% are old and new states, respectively (Brecher 1993, 173). This finding would tend to support the idea that, as states get older, they may become more integrated into the system and therefore develop a greater attachment

to the status quo, which in turn suggests a lower probability of triggering crises for others around them.

ICB also develops and tests hybrid linkages. The ability to do this is confirmed by the presence of 29 variables that are coded in both data sets (Brecher and Wilkenfeld 1997, 48-53). For example, the type of value threatened is coded for each actor individually and then the highest threat perceived by any one of them becomes the coding for the case as a whole. Intensity of violence is coded the same way. Thus, it becomes possible to test theoretically interesting linkages in micro-macro and macro-micro as well as micro-micro (i.e., reductionistic) and macro-macro (i.e., holistic) terms.

While macro-micro linkages do exist, the hypotheses and testing here are relatively limited in comparison to the hundreds of examples available from the micro-micro and macro-macro domains. For purposes of illustration, consider the macro-micro hypothesis, SYSTEM LEVEL → trigger. It is expected that foreign policy crises in the dominant system are less likely to be triggered by violence than cases initiated elsewhere. The reason is risk aversion on the part of major powers who reside in the dominant system—violence in that locale is more likely to endanger their elite status through escalation than if it occurred in other subsystems. Thus, the great powers can be expected to function more effectively as "system managers" in their own "backyards" as opposed to other locations (Brecher 1993, 144). Data from foreign policy crises are consistent with the operation of that mechanism. The percentage of violent triggers is 35% and 8% in subsystem and dominant system crises, respectively (Brecher 1993, 178). The foundation for further macro-micro data analysis in ICB is clear because the macro-level variables are included as "context" within the micro-level map, so the testing of such hypotheses is built into the Project from the outset.

Micro variables, however, do not appear in the macro conceptual map as potential explanatory factors. This asymmetry is easy to explain in terms of the ICB Project's intellectual history. The Project began in the tradition of the events data movement within international relations, which emphasized the collection of data about individual cases (James 2002a). Thus, causal analysis within the Project tends to focus either exclusively on macro or micro patterns, with the exceptional crossovers generally being in a direction that focuses on explaining foreign policy, that is, from system to unit.

Comparatively speaking, the most difficult type of inference to make is from micro to macro because this entails the issue of transfer-

mation, that is, how do individual events "add up" to change in the aggregate? In the strict sense, this question is not answered by ICB with regard to how micro-level foreign policy crises accumulate and bring about change in either evolutionary or revolutionary terms at the level of the international system. Of course, with the vast agenda of the Project, it is not surprising that significant work remains to be done and that it is most needed in the area that is at a maximum distance from the foreign policy "roots" of ICB.

ICB is not, however, lacking in hypotheses and testing that focus on system-level change. INTENSITY → IMPACT, a macro-macro proposition, receives strong support from the data. The immediate intensity of an international crisis serves as a useful predictor of its impact on the system at a time approximately 5 years later (Brecher and James 1986). This connection, it should be noted, is macro-macro rather than micro-macro in nature.

Tables from Brecher, James, and Wilkenfeld (2000, 42-46) enumerating the results of testing for ICB's propositions about crisis escalation in particular make the point about the relative frequency of macro-macro and micro-micro versus micro-macro and macro-micro linkages in a graphic way. All of the propositions listed in the tables are either macro-macro (i.e., global or regional) or micro-micro (i.e., monadic, dyadic, or n-adic; Brecher, James, and Wilkenfeld 2000, 42-46). It therefore might be valuable for ICB research to create two new priorities: (1) expand analysis of macro-micro linkages and (2) begin to explore micro-macro linkages to complement its extensive record of testing at the macro-macro and micro-micro levels.

With regard to functional form, ICB resembles other projects in that its propositions almost invariably have been put forward as monotonic connections between independent and dependent variables. The only exception so far concerns the presumed impact of the concentration of capabilities among great powers on crisis-generated instability, in which polynomial expressions appear (James 1993). Thus, it might be efficient for the ICB Project to devote some time and energy to reviewing its inventory of findings to see whether the almost exclusively monotonic relationships tested are in line with underlying theoretical expositions. In some instances, at least, a non-linear specification of one kind or another might be identified as more viable.

ICB's Unified Model of Interstate Crisis, which appears as Figure 1, satisfies the criterion that a compelling theory should consist of multiple, specific mechanisms that include unobservables. The Unified

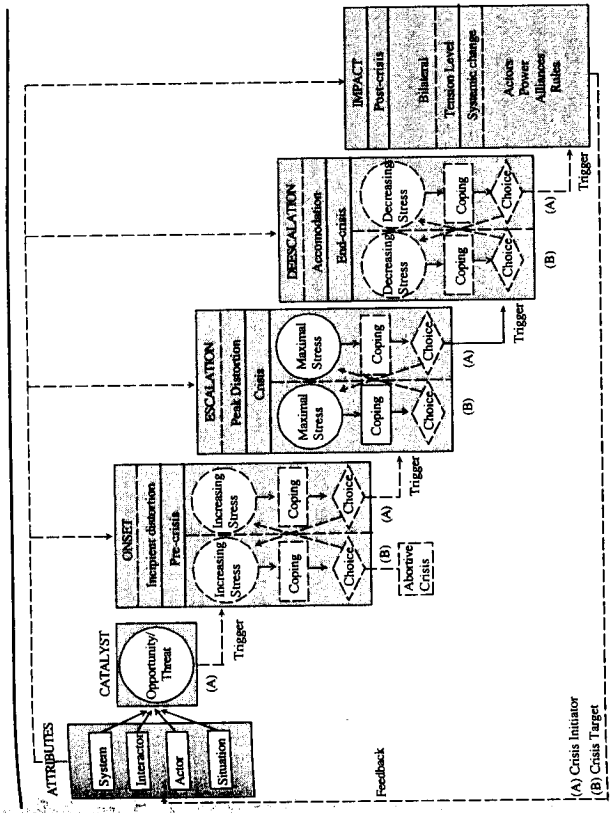


Figure 1: Unified Model of Interstate Crisis

SOURCE: This figure is a reproduction of Figure 6.1 from Brecher (1993, 360-61).

Model focuses on the decision makers of the crisis initiator and target as they move through a series of processes. At the international level, the Unified Model includes several phases—onset, escalation, deescalation, and impact—and includes feedback to actor attributes as well as the system in an overall sense.

Before probing some examples of mechanisms, it is worth pointing out that the Unified Model is consistent with systemism in terms of the linkages it entails, even if not all components, as yet, have received approximately equal treatment at the stage of empirical testing. For example, at the actor level, each period, such as precrisis, includes multiple micro-micro connections, such as increasing stress → coping → choice for Actor (B) → increasing stress → coping → choice for Actor (A).<sup>8</sup> Figure 1 also includes a wide range of connections from

8. As Figure 1 reveals, ICB allows for a crisis to terminate abortively at onset if Actor B's choice does not produce increasing stress for Actor A, who already plays the role of initiator at that point.

the other three qualitatively different categories, that is, macro-macro, micro-macro, and macro-micro.

Consider, as a social mechanism, the micro-micro connections at the onset phase involving increasing stress, coping, and choice for Actors A and B in Figure 1. Within ICB's frame of reference, stress plays the role of an unobservable concept. Specifically, the defining conditions for a foreign policy crisis—threat to basic values, finite time, and an increased likelihood of military hostilities—are expected to produce higher stress for Actor B at the phase of onset as a result of the triggering action from Actor A (Brecher 1980a; Dowty 1984, 4). (Stress is anticipated to reach its maximal level during the phase of escalation and then decrease at deescalation.) The phenomenological component is the end product, choice, because it is possible to observe and record actions taken by decision makers in crisis.

Figure 1's social mechanisms at the onset phase are remarkably consistent with the conditions enumerated in the more abstract discussion from earlier on. (Any of the other phases could be used to make the same point just as easily.) First, initial conditions are specified, that is, the defining aspects of a foreign policy crisis have been created for Actor B by Actor A's triggering act. Second, the causal chain is from the experience of Actor A's trigger at the onset to Actor B's trigger at the transition to the next phase, escalation. The triggers can be observed as choices, but the causal chain includes the unobservables—stress and coping—as the connecting pieces. Third, and finally, the mechanistic explanation of movement from onset to escalation is offered in terms of a lawlike generalization about reciprocity. The unobservables, stress and coping, combine to produce a prediction of approximately symmetric behavior on the part of the crisis initiator and target in the transition from onset to escalation. This may be summed up as a tendency that is very basic to human psychology, namely, to react in kind (Axelrod 1984). The resulting phenomenological hypothesis is that violent (nonviolent) triggers at onset are more likely to produce violent (nonviolent) subsequent behavior. If Actor A's trigger is violent, Actor B's response and subsequent actions by both Actors A and B are more likely to be violent as a result of the impact of Actor A's behavior on B's stress level, coping, and choice of response.

ICB's causal story about escalation is supported by its data analysis. For example, violent (nonviolent) triggers produce severe violence in crises, meaning serious clashes or full-scale war, in 60% (30%) of the cases. This successful testing of a correlational hypothesis is tri-

angulated by evidence from tracing the processes of interaction in ICB's in-depth case studies (Brecher 1993). In sum, reciprocity appears to be the rule rather than the exception in crisis behavior.

ICB's final point of consistency with systemism and social mechanisms concerns its inclusion of both mechanistic and correlational hypotheses. Social mechanisms about crisis escalation and an example of an empirical test for reciprocal behavior, which appeared a moment ago, represent the tip of the iceberg for ICB's accomplishments in this area. If just the number of tests for correlational hypotheses is included, ICB's record already features the following results at the respective levels: global and regional (4), dyadic (11), monadic (5), interactive (16). The greater presence of testing at the dyadic and interactive levels reflects the movement of the field of international relations as a whole, perhaps to its eventual detriment, toward theorizing that stresses those levels at the relative expense of others (James 2002a).<sup>9</sup> At the same time, the testing of a total of 36 correlational hypotheses stands as a noteworthy achievement for ICB, which clearly possesses the resources to engage in an even wider range of tests, most notably at the levels that so far have received less attention. In sum, a brief review of the subject of crisis escalation alone is sufficient to establish that ICB includes a considerable range of both mechanistic and correlational hypotheses.

## CONCLUSIONS AND FUTURE DIRECTIONS

ICB is a major research project in international relations that seeks both pure and applied knowledge about crises. From the standpoint of philosophy of science in general, and systemism and social mechanisms in particular, ICB is a success. Its system and actor definitions of crisis show recognition that scientific advancement requires analysis of both the emic and etic worlds. The ICB macro and micro conceptual maps permit a complete range of linkages to be explored, that is, macro-macro, micro-micro, and hybrid linkages, namely, macro-micro and micro-macro. The Project's Unified Model of Crisis includes multiple social mechanisms that are consistent with lawlike

9. This point is made by Sandler (2001, 144) about the discipline of economics, in which general equilibrium analysis is out of favor in comparison to game theory, "which lends itself to a more focused study of a few opposing agents." Thus, international relations is not alone with respect to an apparently sustained trend toward reductionism.

generalizations. Finally, both mechanistic and correlational hypotheses are found within ICB.

This review identifies two priority areas for the ICB Project in terms of more effective advancement as a scientific research project. First, development and testing of hypotheses should put more emphasis on hybrid linkages. The second priority would be to reassess the formulation and testing of hypotheses in the context of functional form because specification to date is almost exclusively monotonic.

ICB, in sum, is found to be very much in line with the classic ideas put forward by Bunge concerning systemism and social mechanisms. One possibility for future work might be to assess other project-based research within international relations and other disciplines to see how well Bunge's standards are met across the board. This would serve as a meaningful complement to his important work in assessing scientific progress in academic disciplines over the course of several decades and might point in the direction of more effective team-oriented inquiry in various disciplinary settings.

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