Chapter 7

Operational Code Analysis as a Scientific Research Program

A Cautionary Tale

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Do leaders matter in world politics? Intuitively, we sense that they do and, as citizens of a democratic society, we act as if they do. However, as scholars we are often confounded by several problems when we try to demonstrate that "who leads matters." As political scientists we study large collectivities that behave in complex ways, and we have difficulty in gaining reliable and valid observations of leaders and establishing connections among them, actions by the state, and political outcomes.

These difficulties have led over the years to the emergence of certain elements of conventional wisdom regarding the nature and importance of political leadership: leadership, it is said, explains relatively little of the variance in the decisions of states, and the linkages between leaders and the outcomes of decisions are even more tenuous. The individual differences between leaders are less important than the common characteristics that they share as members of a culture or society. Leadership in this view involves the tasks, relatively interchangeable among individuals, of articulating shared values, responding to commonly recognized constraints in the environment,

I am grateful to Robert Jervis, Randall Schweller, Andrew Bennett, Kenneth Waltz, Robert Keohane, David Dessler, and the other participants at Arizona State University's "Progress in International Relations Theory" conference in Scottsdale, Arizona, January 14–16, 1999, for their comments on earlier versions of this paper. Alexander George and Ole Holsti were also kind enough to read and comment on the version presented at the annual meeting of the American Political Science Association, Atlanta Georgia, September 1–4, 1999.

and calculating rational choices on the basis of these incentives and constraints. It is important as citizens to be careful, active, and attentive in selecting leaders who are not flawed, but who are instead representative standard-bearers of the dominant culture and who can process information according to the standards of instrumental rationality. However, only rarely and under very restricted conditions are leaders themselves important in explaining political outcomes.

Operational code analysis challenges several of these tenets in a more or less explicit manner by looking for the impact of individual differences on foreign policy decisions and outcomes. The research program originated in a concern shared by academic and policy analysts with the causes of the Cold War and the puzzle presented by Soviet bargaining behavior after World War II. The initial research by Nathan Leites was done under the auspices of the RAND Corporation and represented an extension of the argument in George Kennan's "long telegram," which portrayed the Bolsheviks as revolutionaries with a drive for power that was unusually high by Western standards.[1] Leites himself located the core of Bolshevik strategic conceptions in the cryptic question posed by Lenin, "kto-kovo?" Translated literally as "who-whom," it referred to the political questions, "who (will destroy, will control, will utilize) whom?" and symbolized the preoccupation with conflict and power that characterized the Bolshevik operational code.[2]

The account presented here of the ensuing operational code research program inspired by Leites's seminal study is concerned with an assessment of the theoretical and empirical changes in operational code research as either progressive or degenerative within the context offered by the Lakatosian system for evaluating scientific research programs.[3] Below I explore the elements of the Lakatos model as they

1. Nathan Leites, *The Operational Code of the Politburo* (New York: McGraw-Hill, 1951); Nathan Leites, *A Study of Bolshevism* (New York: Free Press, 1953).

2. Leites, *A Study of Bolshevism*, pp. 27–29; see also Leites, *The Operational Code of the Politburo*, pp. 78–81.

3. Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in Imre Lakatos and Alan Musgrave, eds., *Criticism and the Growth of Knowledge* (Cambridge: Cambridge University Press, 1970), pp. 91–196.

relate to the evolution of operational code analysis. I begin by identifying the hard core and positive and negative heuristics of the research program from the prototypical study by Leites.[4] Then I present an elaboration of auxiliary hypotheses from two elements in the positive heuristic by Alexander George, which influenced the first generation of operational code analysis as a research program.[5] I turn next to an account of the impact of the cognitive revolution in social psychology on later generations of operational code analysis. These efforts yield a "cautionary tale," one that does not fit the Lakatos account of the growth of scientific progress in all respects. I end with the conclusion that these discrepancies contain some implications for defining theoretical progress and assessing the general pattern of development in the social sciences.

Operational Code Analysis as a Scientific Research Program

The conceptual apparatus that informs this discussion is the operational code construct. As the "construct" label implies, it is a complex set of elements defined initially by Leites in his study of the Soviet elite as "the conceptions of political 'strategy'" in Bolshevik ideology.[6] He identified these conceptions as shared beliefs among Russian communist leaders, which he extracted initially from the texts of public statements by Lenin and Stalin and later related to broader cultural themes found in literary texts by Russian authors.[7] The operational code of the Bolsheviks revealed in this analysis was a mix of different kinds of conceptions—ontological statements, causal attributions, and prescriptive norms—labeled generically as "beliefs,"

4. Leites, *The Operational Code of the Politburo*; Leites, *A Study of Bolshevism*.

5. Alexander George, "The 'Operational Code': A Neglected Approach to the Study of Political Leaders and Decision Making," *International Studies Quarterly*, Vol. 13, No. 2 (June 1969), pp. 190–222.

6. Leites, *A Study of Bolshevism*, p. 15.

7. Leites, *The Operational Code of the Politburo*; Leites, *A Study of Bolshevism*.

with overtones of positive and negative "affect" (the feelings and emotions associated with them), and focused on the exercise of power.

This fixation on power became a central part of Leites's explanation for the hostility and intransigence attributed to Soviet leaders in dealing with the West, which contributed to the stalemate and competition associated with the Cold War between the superpowers.[8] As we shall see below, other scholars have employed the operational code construct to explain differences in the negotiating styles of leaders during international crises, the differences in policy preferences between leaders within the same state, and the variations in strategies, tactics, and moves reflected in the foreign policy decisions of different states during periods of protracted conflict.

The Leites analysis of the Bolshevik operational code incorporated the following assumptions, which formed the *hard core* (HC) of the prototypical operational code study:

HC-1. Individuals are the primary actors in politics.

HC-2. The personalities of individuals are coherent systems.

HC-3. Individuals make political decisions under the constraints of "bounded rationality" imposed by environmental uncertainty and idiosyncratic or shared biases in their personality systems.

HC-4. Individuals learn from making and monitoring political decisions: the content and complexity of both their behavior and the beliefs in their personality systems are reinforced or altered as a result of experiential or vicarious knowledge of the environment.

HC-5. Political outcomes are the product of the exercise of power by individuals in different political domains.

Elements of the *negative heuristic* (NH) that can be inferred from the hard core include the following five prescriptions:

NH-1. Do not assume that states are the primary actors.

8. Nathan Leites, *Kremlin Moods* (Santa Monica, Calif.: RAND, 1964).

NH-2. Do not assume that all individuals respond to stimuli the same way.

NH-3. Do not assume that individuals process information and make decisions according to principles of rationality that assume complete and perfect information.

NH-4. Do not assume that the future casts a longer shadow than the past or that individuals are "a-historical" in their decision making.

NH-5. Do not assume that environmental constraints, such as the distributions of capabilities, interests, or public opinion, are sufficient to produce decisions or generate outcomes.

Elements of the *positive heuristic* (PH) include the following five prescriptions inferred from the corresponding five assumptions of the hard core:

PH-1. Identify the individuals who are key decision makers: the leaders of states or other political groups.

PH-2. Identify the idiosyncratic or shared elements of a leader's personality that are relevant to the exercise of political power.

PH-3. Identify beliefs in a leader's personality at different points in historical narratives of decision-making episodes.

PH-4. Compare a leader's beliefs over time and across decision-making episodes with the exercise of power attributed to the leader's control.

PH-5. Trace the exercise of political power by leaders to the creation, reinforcement, or alteration of political outcomes.

The elements of the positive heuristic inspired efforts to formulate auxiliary hypotheses about how to conceptualize the relationships among beliefs, the exercise of power, and political outcomes. Alexander George attempted to formalize and simplify the operational code construct so that it could be applied as a general approach to the

study of political decision making.[9] He focused on the third and fourth elements of the positive heuristic and recommended that the conceptions of political strategy be identified as a political belief system. George hypothesized that some elements (philosophical beliefs) would guide the diagnosis of the context for action while others (instrumental beliefs) would prescribe the most effective strategy and tactics for achieving political goals.

In doing so, George attempted to isolate the cognitive-strategic dimension of Leites's study of Bolshevik doctrine from its historical and characterological dimensions, which "constituted in some respects a distinct type in social history in the sense that any individual is unique though resembling others in important respects."[10] The analytical strategy for carrying out this task was to identify ten questions about political life suggested by Leites's analysis, and to hypothesize that the answers would capture a leader's "fundamental orientation towards the problem of leadership and action."[11]

Philosophical Beliefs

1. What is the "essential" nature of political life? Is the political universe essentially one of harmony or conflict? What is the fundamental character of one's political opponents?

2. What are the prospects for the eventual realization of one's fundamental values and aspirations? Can one be optimistic, or must one be pessimistic on this score; and in what respects the one and/or the other?

3. Is the political future predictable? In what sense and to what extent?

9. George, "The 'Operational Code'."

10. George, "The 'Operational Code'," p. 193.

11. George, "The 'Operational Code'," p. 200. These questions are taken from the discussion on pp. 201–216.

4. How much "control" or "mastery" can one have over historical development? What is one's role in "moving" and "shaping" history in the desired direction?

5. What is the role of "chance" in human affairs and in historical development?

Instrumental Beliefs

1. What is the best approach for selecting goals or objectives for political action?

2. How are the goals of action pursued most effectively?

3. How are the risks of political action calculated, controlled, and accepted?

4. What is the best "timing" of action to advance one's interests?

5. What is the utility and role of different means for advancing one's interests?

While not denying the relationship between political beliefs and either the social-psychological milieu in which they were acquired or the psychoanalytical needs that they satisfied, George argued that a leader's operational code beliefs "can be inferred or postulated by the investigator on the basis of the kinds of data, observational opportunities, and methods generally available to political scientists."[12] The implicit psychological explanation that linked a leader's beliefs and decisions was a theory of cognitive consistency, which had the following basic propositions:[13]

12. George, "The 'Operational Code'," p. 195.

13. These propositions are extracted from the discussion in George, "The 'Operational Code'," pp. 205, 216–220. See also Ole Holsti, "The 'Operational Code' as an Approach to the Analysis of Belief Systems," *Final Report to the National Science Foundation*, Grant No. SOC 75-15368 (Durham, N.C.: Duke University, 1977).

An individual's beliefs form an interdependent and hierarchical system whose elements are consistent with one another and resistant to change.

The more interdependent and hierarchically organized the belief system, the more the individual tends to "discount," as the basis for decisions, any new information that is inconsistent with already existing beliefs, particularly central beliefs.

The properties of interdependence and hierarchy make a change in one belief likely to cause a change in others, especially if the initial change is in a belief near or at the center of the hierarchy.

The more interdependent and hierarchically organized the belief system, the greater the consistency between the individual's beliefs and decisions.

The scope conditions for this theory limited its application to leaders rather than masses, because it presumed a different socialization experience for leaders than for their followers. Leaders were assumed to be more politically aware and more informed and interested in political life than the masses, whose lower level of political awareness led them to have vague or poorly structured beliefs and to exhibit inconsistencies between beliefs and preferred political behaviors.[14]

The first generation of operational code studies tended to focus primarily on the first and second propositions stated above. They conducted an exhaustive inventory of a leader's beliefs organized within the framework of George's classification of philosophical beliefs about the political universe and instrumental beliefs about the exercise of political power.[15] These studies were responses to George's call for

14. Philip Converse, "The Nature of Belief Systems in Mass Publics," in David Apter, ed., *Ideology and Discontent* (New York: Free Press, 1964), pp. 206–261.

15. See, e.g., Ole Holsti, "The Operational Code Approach to the Study of Political Leaders: John Foster Dulles; Philosophical and Instrumental Belief," *Canadian Journal of Political Science*, Vol. 3, No. 1 (March 1970), pp. 123–157; Stephen Walker, "The Interface Between Beliefs and Behavior: Henry Kissinger's Operational Code and the Vietnam War," *Journal of Conflict*

the content analysis of a decision maker's statements and writings to determine what beliefs were thus revealed, and to assess their consistency with one another and with the leader's diagnosis of incoming information and subsequent decisions.

Ole Holsti reviewed these studies and constructed a typology of belief systems designed to categorize each of the individual leaders within one of the types.[16] The Holsti typology was based on a "master belief" axiom suggested by George to link operational code elements as a construct within the context of cognitive consistency theory.[17] George had argued that a leader's beliefs about the nature of the political universe, and particularly the image of the opponent, constrained the individual's remaining operational code beliefs.[18] Based on the master belief axiom, Holsti constructed a typology of six belief systems. The types were bounded by a 2 x 3 matrix formed by the philosophical beliefs about the permanent or temporary nature of conflict in the political universe and whether the source of conflict was human nature, society, or the international system.[19] In turn, these master philosophical beliefs about the nature of political life constrained the remaining philosophical and instrumental beliefs.

For example, a leader who believes that political conflict is a permanent feature of the political universe is likely to be relatively pessimistic about the prospects for achieving fundamental political values, view the political future as less predictable, believe that control over historical development is relatively low, and assign a higher role to chance in political affairs. On the other hand, a leader who views conflict as temporary is likely to be more optimistic about realizing

Resolution, Vol. 2, No. 1 (March 1977), pp. 129–168. An inventory of early studies appears in Stephen Walker, "The Evolution of Operational Code Analysis," *Political Psychology*, Vol. 11, No. 2 (June 1990), pp. 403–418.

16. Holsti, "The 'Operational Code' as an Approach to the Analysis of Belief Systems."

17. George, "The 'Operational Code'."

18. George, "The 'Operational Code'," pp. 202–203.

19. Kenneth Waltz, *Man, the State, and War* (New York: Columbia University Press, 1959).

goals and more confident in the predictability of the future, believe in greater control over historical development, and assign less importance to chance.

According to the logic of cognitive consistency theory, these differences in the diagnosis of the political universe should lead to different prescriptions for political action. The first leader's pessimism is likely to be accompanied by instrumental beliefs that strategy should be limited in its goals, tactics should be flexible, the calculation and control of risks should be cautious and conservative, and force should be a last resort as a means to achieve political ends. The second leader's optimism is more likely to generate beliefs in grand strategic goals, relatively inflexible tactics, long-shot calculations in the assessment of risks, and the utility of force as a tool of statecraft.

Holsti theorized that these internally coherent belief systems remained relatively stable over time and across issue domains for the leaders who hold them. In articulating and testing their respective formalizations of the operational code construct, however, both George and Holsti acknowledged that the Bolshevik belief system and the Holsti typology did not exhaust the rich variety and complexity of political leaders. They might have master beliefs that ranged from zero-sum, through mixed, to non-zero-sum views of the political universe. Nor do all leaders necessarily operate with a single, well-defined set of operational code beliefs; moreover, leaders may change their beliefs over time.[20] Their recipe for operational code analysis placed it within what Philip Tetlock calls the cognitivist research program for explaining world politics.[21]

20. George, "The 'Operational Code'"; Holsti, "The 'Operational Code' as an Approach to the Analysis of Belief Systems."

21. Philip E. Tetlock, "Social Psychology and World Politics," in Daniel Gilbert, Susan Fiske, and Gardner Lindzey, eds., *Handbook of Social Psychology* (New York: McGraw-Hill, 1998), pp. 869–912.

The General Cognitivist Research Program

The cognitivist research program assumes Simon's classic principle of bounded rationality: "Policy makers may act rationally, but only within the context of their simplified subjective representations of reality."[22] Tetlock argues that this assumption is based on the following two premises: "1. World politics is not only complex but also deeply ambiguous. Whenever people draw lessons from history, they rely—implicitly or explicitly—on speculative reconstructions of what would have happened in possible worlds of their own mental creation; 2. People—limited-capacity information processors that we are—frequently resort to simplifying strategies to deal with this otherwise overwhelming complexity and uncertainty."[23]

Noting that "cognitivists focus on these simplified mental representations of reality that decision makers use to interpret events and choose among courses of action," Tetlock reviewed and categorized the individual research programs of various scholars under these premises as components of a general cognitivist program.[24] At the same time, he was careful to recognize the considerable disagreement among cognitivists over how to represent these simplified images.

During the 1980s, important research on belief systems within the general cognitivist research program tended to follow two empirical strategies: a focus on belief systems as schemata, and an attempt to identify various forms of cognitive biases and heuristics. Schemata may be about other individuals (person schema), the self (self schema), groups (role schema), or sequences of events (scripts).[25] Depending upon their type, therefore, schemata are hypotheses about the attributes of types of objects and the relationships among their

22. Herbert Simon, *Models of Man* (New York: Wiley, 1957); Tetlock, "Social Psychology and World Politics," p. 876.

23. Tetlock, "Social Psychology and World Politics," p. 876.

24. Ibid.

25. Susan Fiske and Shelley Taylor, *Social Cognition*, 2nd ed. (New York: McGraw-Hill, 1991).

attributes. Much of the research by Richard Herrmann, Martha Cottam, Jerel Rosati, and Deborah Larson[26] was based on the hypothesis noted earlier by George and others that the image of the "other" was a master belief, that is, a central schema that influenced the arousal of other schemata as scripts to guide policy decisions.[27]

These examples reflect the spread of the "cognitive revolution" from social psychology to the study of foreign policy decisions.[28] The focus upon cognition and information processing accompanied a shift away from a focus on affect (feelings) as a significant mental phenomenon. The spread of the revolution was due to conceptual and methodological reasons that also accounted for its initial success in social psychology. In contrast to affect, schemata and the processes that generate them lend themselves to relatively precise observation and modeling. The individuals who experience them are more aware of their thoughts than of their feelings. Measurement difficulties and the

26. Richard Herrmann, *Perceptions and Behavior in Soviet Foreign Policy* (Pittsburgh, Pa.: University of Pittsburgh Press, 1985); Martha Cottam, *Foreign Policy Decision Making: The Influence of Cognition* (Boulder, Colo.: Westview Press, 1986); Jerel Rosati, *The Carter Administration's Quest for Global Community* (Columbia, S.C.: The University of South Carolina Press (1987); and Deborah Larson, *Origins of Containment* (Princeton, N.J.: Princeton University Press, 1985).

27. George, "The 'Operational Code'"; Alexander George, "The Causal Nexus Between Cognitive Beliefs and Decision-making Behavior: The 'Operational Code'," in Lawrence Falkowski, ed., *Psychological Models in International Politics* (Boulder, Colo.: Westview Press, 1979), pp. 95–124; Ole Holsti, "Cognitive Dynamics and Images of the Enemy," in David Finlay, Ole Holsti, and Richard Fagen, eds., *Enemies in Politics* (Chicago: Rand-McNally, 1967), pp. 25–96; Richard Cottam, *Foreign Policy Motivation: A General Theory and a Case Study* (Pittsburgh, Pa.: University of Pittsburgh Press, 1977).

28. Richard Herrmann, "The Empirical Challenge of the Cognitive Revolution: A Strategy for Drawing Inferences About Perceptions," *International Studies Quarterly*, Vol. 32, No. 2 (June 1988), pp. 175–204.

criterion of parsimony in constructing models led researchers away from affect and toward cognition in their theoretical thinking as well.[29]

Accompanying the introduction of schema as a key analytical tool in the cognitive revolution was the articulation of the concept of heuristics to describe how individuals actually process information. Whereas schemata are hypotheses about the environment, heuristics are the rules by which individuals test the hypotheses in a schema. By extension, heuristics may also be viewed as "content-free" schemata: rules functioning to organize incoming information even in the absence of person, self, role, or event schemata. Cognitive and social psychologists have expended considerable effort to identify different heuristics and trace their implications for making decisions. The main implication for decision-making theory is a better understanding of how misperceptions are formed, which become the basis for making flawed decisions, that is, decisions based upon faulty information processing.[30] The understanding of cognitive processes that emerged was a more complex one than simply the reduction of dissonance and a bias toward consistency. Other cognitive flaws and biases operate as well.

Janice Stein addressed the relationship between cognitive biases and affect through the concept of *motivated bias*.[31] Following Ned Lebow, she argued that motivated biases manifest themselves in forms virtually indistinguishable from cognitive biases.[32] However, the occasion for the use of the heuristic is the occurrence of fears and needs within the individual rather than the existence of an uncertain and complex environment. The introduction of motivated biases enriches the analyst's understanding of how cognitive heuristics are employed

29. Philip Tetlock and Ariel Levi, "Attribution Bias: On the Inconclusiveness of the Motivation-Cognition Debate," *Journal of Experimental Social Psychology*, Vol. 18, No. 1 (January 1982), pp. 68–88.

30. Fiske and Taylor, *Social Cognition*.

31. Janice Gross Stein, "Building Politics in Psychology," *Political Psychology*, Vol. 9, No. 2 (June 1988), pp. 245–272.

32. Richard Ned Lebow, *Between Peace and War* (Baltimore, Md.: Johns Hopkins University Press, 1981), cited by Stein, "Building Politics in Psychology," p. 257.

and follows the advice of Jervis who had earlier introduced the cognitive bias literature into the study of world politics.[33] As Stein notes, "Analysis of cognitive biases alone ... cannot establish the likely *direction* of misperception or its *probable occurrence*; the direction of *motivated* errors is far easier to specify."[34] So when a nation faces a potential opponent who is far more powerful, the fear that is generated from this strategic situation makes it more probable that its leaders will overestimate rather than underestimate the threat.

The Evolution of the Operational Code Research Program

In 1979, Alexander George attempted to re-position the operational code construct within the cognitive revolution. He argued that operational code beliefs are schemata, which "refer to generalized principles about social and political life and not, as attitudes presumably do, to predispositions to respond to rather specific or delineated objects.... Operational code beliefs have centrality. Unlike attitudes, they are concerned with fundamental, unchanging issues of politics and political action."[35]

George's subsequent work on decision making in foreign policy tended to follow the strategies associated with the cognitive revolution of focusing on schemata and heuristics and his own conclusions about their most fruitful applications.[36] "One can ... fruitfully define the task of policy science (the task of designing and managing policy-making systems) as that of avoiding, correcting, and/or compensating for

33. Robert Jervis, "Perception and Misperception: An Updating of the Analysis," presented at the Annual Meeting of the International Society of Political Psychology, Washington, D.C., 1982; Robert Jervis, *Perception and Misperception in International Politics* (Princeton, N.J.: Princeton Press, 1976).

34. Stein, "Building Politics in Psychology," p. 259 (emphasis added).

35. George, "The Causal Nexus Between Cognitive Beliefs and Decision-making Behavior," pp. 97, 99.

36. For the general implications of a conceptual shift from belief systems to schemata, see Deborah Larson, "The Role of Belief Systems and Schemas in Foreign Policy Decision-making," *Political Psychology*, Vol. 15, No. 1 (March 1994), pp. 17–34.

flaws, errors, and biases of the kind that the policy maker's naïve epistemology introduces into the information processing associated with decision making."[37] He attempted to bridge the cognitive revolution and personality theory by arguing that personality traits have an *indirect* influence on cognitive processes by structuring the bureaucratic channels through which a leader receives and manages information and advice. That is, leaders with differences in cognitive style, orientation toward conflict, and sense of political efficacy construct different advisory systems that, in turn, influence the leader's processing of information and advice.[38]

The *direct* influence of personality on cognition lies in its promise of offering an explanation for similarities in operational code beliefs between leaders who do not share common role-socialization experiences.[39] In his review of the first generation of operational code studies, Holsti hypothesized that two leaders, such as John Foster Dulles and Josef Stalin, may still have the same type of operational code beliefs, even though socialized into roles in quite different

37. George, "The Causal Nexus Between Cognitive Beliefs and Decision-making Behavior," p. 99.

38. Alexander George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice* (Boulder, Colo.: Westview Press, 1980); see also Yuen Foong Khong, *Analogies at War* (Princeton, N.J.: Princeton University Press, 1992; Alexander George, "Assessing Presidential Character," in Alexander George and Juliette George, eds., *Presidential Personality and Performance* (Boulder, Colo.: Westview, 1988), pp. 145–198; Alexander George and Eric Stern, "Presidential Management and Styles," in George and George, *Presidential Personality and Performance*, pp. 199–280.

39. Conversely, successful socialization may presuppose a personality disposed toward the acceptance of the norms and values associated with the role. See Ole Holsti, "Foreign Policy Viewed Cognitively," in Robert Axelrod, ed., *The Structure of Decision* (Princeton, N.J.: Princeton, 1976), pp. 18–54. In Leites's initial operational code study, he argued that political beliefs were part of a Bolshevik identity formed by successful socialization into the role of a Politburo member. Leites, *A Study of Bolshevism*; George, "The 'Operational Code'."

political systems with antithetical political ideologies.[40] Holsti did not explain this phenomenon, so much as allow for it by contrasting the very general contents of operational code beliefs with the more specific contents of ideological beliefs.[41] A subsequent analysis of the motivational foundations of the beliefs in Holsti's operational code typology generated an explanation in the form of the following personality theory: [42]

> As a result of early childhood socialization experiences, an individual acquires the dominant motives in his personality prior to adopting a political belief system.
>
> An individual tends to adopt a political belief system that is compatible with his/her constellation of needs for power, affiliation, and achievement.
>
> Although an individual's belief system may develop a consistency that is independent from random fluctuations in immediate personal needs,... the activation of these beliefs by environmental stimuli may arouse personal needs embedded in the belief system as the individual uses the various elements of his belief system to interpret a decision-making situation.
>
> Once aroused, these motives may contribute to the cognitive rigidity of an individual's beliefs and account for the intensity of cognitive dissonance and behavioral intransigence in the face of new information or other stimuli from the environment.

40. Holsti, "The 'Operational Code' as an Approach to the Analysis of Belief Systems."

41. See also Alexander George, "Ideology and International Relations: A Conceptual Analysis," presented at the "Ideology and Its Influence on International Politics" Conference at the Leonard Davis Institute of International Relations, The Hebrew University, Jerusalem, Israel 1985.

42. Stephen Walker, "The Motivational Foundations of Political Belief Systems: A Re-analysis of the Operational Code Construct," *International Studies Quarterly*, Vol. 27, No. 2 (June 1983), pp. 179–201. The propositions of this theory are presented here in the same form that they appeared there (p. 189).

In this theory, both operational code beliefs and motivations exist prior to political action. The motivations account for the content of beliefs and also their resistance to change. The evidence for these theoretical amendments was a content analysis of the motivational images in Holsti's typology of operational code belief systems. The results identified overlapping beliefs and underlying motivational foundations that justified the reduction of Holsti's belief systems from six to four: one characterized by power imagery, one with affiliation imagery, and two that shared achievement imagery but differed in the manifestation of power-versus-affiliation imagery.[43]

Self-images formed with the aid of these schemata foreshadow the impending decision, as the decision maker judges what is the appropriate choice. The process produces congruence (or "balance") between the self and the situation: it results in a choice that is consistent with a leader's self-image of how to respond to the situation. This emphasis upon self-schema and self-scripts containing motivational imagery rather than images of others accounted for anomalies in previous applications of purely cognitive theory to foreign policy choices.[44] The self's preferred choice may or may not vary under different circumstances, depending upon the individual's self-schema and self-script. The dimensions of the self are the crucial variables in the equation, although circumstances are not necessarily

43. Walker, "The Motivational Foundations of Political Belief Systems"; Stephen Walker and Lawrence Falkowski, "The Operational Codes of U.S. Presidents and Secretaries of State," *Political Psychology*, Vol. 5, No. 2 (June 1984), pp. 237–266; Stephen Walker, "The Evolution of Operational Code Analysis," *Political Psychology*, Vol. 11, No. 2 (June 1990), pp. 403–418; Stephen Walker, "Psychodynamic Processes and Framing Effects in Foreign Policy Decision-Making: Woodrow Wilson's Operational Code," *Political Psychology*, Vol. 16, No. 4, (December 1995), pp. 697–717.

44. Cottam, *Foreign Policy Decision Making*; Harvey Starr, *Henry Kissinger: Perceptions of International Politics* (Lexington, Ky.: University Press of Kentucky, 1984).

spurious in all cases of choice and interact with images of self and other to influence choice.[45]

An example of this dynamic is President Woodrow Wilson's decision making during the ratification debate with the U.S. Senate over the Treaty of Versailles. The conventional accounts of the conflict between the president and the isolationists agree that Wilson's actions contributed heavily to an outcome that was contrary to his avowed goal of ratification. An experienced president and former congressional scholar taking self-defeating actions presents a puzzle that suggests the influence of motivational and cognitive dispositions. A content analysis of Wilson's public statements indicated that Wilson's rhetoric during the Versailles debate was significantly higher in power and achievement imagery than during other decision-making episodes leading up to military intervention in Mexico and declaring war against Germany.[46]

The differences in the distributions of power, affiliation, and achievement are consistent with schemata and scripts that prescribe a rigid, grandiose strategy of conflict toward the U.S. Senate in the Versailles case and a more flexible, restrained strategy of conflict toward opponents in the Mexico and Germany episodes. The president's behavior in the latter two episodes is explicable as a rational response to circumstances without the necessity to refer to the leader's beliefs. However, Wilson's intransigence over the ratification of the Versailles Treaty requires the invocation of individual differences to account for his behavior. The implication is that both his actions and

45. Stephen Walker, Mark Schafer, and Michael Young, "Systematic Procedures for Operational Code Analysis," *International Studies Quarterly*, Vol. 42, No. 1 (March 1998), pp. 175–190; Stephen Walker, Mark Schafer, and Michael Young, "Presidential Operational Codes and the Management of Foreign Policy Conflicts in the Post–Cold War World," *Journal of Conflict Resolution*, Vol. 43, No. 5 (October 1999), pp. 610–625.

46. Walker, "Psychodynamic Processes and Framing Effects in Foreign Policy Decision-making," pp. 697–717.

his operational code were indispensable in order to explain the U.S. failure to ratify the Versailles Treaty.[47]

This evidence of alternative "states of mind" for the same decision maker in different contexts prompted the formulation of an amendment to cognitive consistency theory in the form of a "framing effect," linking beliefs, motivations, and actions.[48] A leader may define the situation and identify responses that are more consistent with one ideal type of belief system and then shift toward another ideal type as the situation evolves or as the leader shifts attention from one situation to another. The effect of this theoretical amendment is to make the typology of belief systems dynamic. Depending on the motivations and accompanying beliefs aroused by stimuli, the Holsti typology now represents alternative states of mind for the *same* decision maker rather than *different* decision makers. This re-conceptualization also accounts for the presence of compartmentalized and inconsistent beliefs within the same leader, which become schemata employed under different circumstances and varying degrees of motivational arousal.[49]

Recasting the Holsti typology as a dynamic model of shifting "states of mind" led to the development of quantitative indices to map the changing coordinates of a leader's beliefs to the elements in the operational code construct.[50] The research focus moved to the particular beliefs aroused by the immediate situation or the issue domain in which a state is taking action. Subsequent studies of operational code beliefs in the 1990s identified the particular configuration of cognitive schemata and attribution patterns

47. Walker, ibid. See also Fred Greenstein, *Personality and Politics*. Second Edition. (Princeton, N.J., Princeton University Press, 1987).

48. Walker, "Psychodynamic Processes and Framing Effects in Foreign Policy Decision-making," p. 703.

49. Walker, "Psychodynamic Processes and Framing Effects in Foreign Policy Decision-making."

50. Stephen Walker, Mark Schafer, and Michael Young, "Systematic Procedures for Operational Code Analysis"; Stephen Walker, Mark Schafer, and Michael Young, "Presidential Operational Codes and the Management of Foreign Policy Conflicts in the Post–Cold War World."

embedded in the "decision regimes" of U.S. presidential administrations.[51] These investigations looked at presidents' beliefs expressed in two different types of contexts: public sources such as prepared speeches or spontaneous press conferences and interviews from the Carter, Bush, and Clinton administrations; and private sources such as classified documents released subsequently into the public domain for the Kennedy and Johnson administrations.[52]

A formal model of strategic interaction informed by operational code analysis also began to emerge in the early 1990s with the aid of developments in sequential game theory.[53] In this model, the beliefs within the operational code of an individual leader or the shared beliefs of a state's collective decision regime provide a theory of payoffs for the different kinds of strategic interaction games that characterize international relations.[54] Accompanying this shift were attempts to broaden and differentiate the phenomena explained by the operational code research program. Explicit distinctions among

51. Charles Kegley, "Decision Regimes and the Comparative Study of Foreign Policy," in Charles Hermann, Charles Kegley, Jr., and James Rosenau, eds., *New Directions in the Study of Foreign Policy* (Boston: Allen and Unwin, 1987), pp. 247–268. "[D]ecision regimes, like operational codes, are composed of cognitive beliefs emerging from a relentlessly political process. Two major types of decision regimes may be identified, although ... they tend to be connected causally. Decision regimes may emerge when there is leadership consensus regarding the substance of policy as well as the process by which it is made. The former are termed *substantive* decision regimes, the latter *procedural* decision regimes." Ibid., pp. 254–255, emphasis in original.

52. The results were published in Mark Schafer, ed., "Symposium on at-a-Distance Psychological Assessment," *Political Psychology*, Vol. 21, No. 3 (September 2000), pp. 511–602.

53. Steven Brams, *Theory of Moves* (Cambridge, UK: Cambridge University Press, 1994)

54. Duncan Snidal, "The Game Theory of International Relations," *World Politics*, Vol. 38, No. 1 (October 1985), pp. 25–87; Stephen Walker, "Game Theory and Foreign Policy Decisions," presented at the Annual Meeting of the American Political Science Association, Washington, D.C. (September, 1991); Stephen Walker, "Interstate and Interpersonal Models of the Persian Gulf Conflict," presented at the Annual Meeting of the International Studies Association, Acapulco, Mexico, 1993.

different levels of decision—behavior, moves, tactics, and strategies—were linked to different elements of the operational code construct. There were also initiatives to apply a general game theory model of strategic interaction informed by operational code beliefs to a broader range of situations than the management of international crises. These efforts have generated predictions of steering, learning, and leadership effects regarding the dynamic relationships between beliefs and different levels of decision, some of which have been corroborated.[55]

Assessing Progress in Operational Code Research

The preceding narrative of theoretical developments in operational code research provides the information to assess whether its trajectory exhibits progress or degeneration as a research program. As Colin Elman and Miriam Fendius Elman note, this distinction hinges on whether theoretical amendments generate *novel facts* without violating the spirit of a research program's positive heuristic.[56] For assessing intra-program progress or degeneration within the operational code research program, two basic assumptions of cognitive consistency theory provide a reference point: (1) beliefs are consistent with one another, and (2) beliefs are consistent with behavior. The subsequent amendments to cognitive consistency theory by George and the re-introduction of motivational personality theory by Walker involved both the modification of these two existing propositions and the addition of others.[57]

55. Stephen Walker, "Role Identities and Operational Code Analysis," in Margaret Hermann, ed., *Advances in Political Psychology* (New York and Amsterdam: Elsevier Science, forthcoming); Stephen Walker, Mark Schafer, and Gregory Marfleet, "The British Strategy of Appeasement: Why Did Britain Persist in the Face of Negative Feedback?" in Charles Hermann and Robert Billings, eds., *Responding to Negative Feedback in Foreign Policy Decision Making* (manuscript).

56. Elman and Elman, Chapter 2 in this volume.

57. George, "The Causal Nexus Between Cognitive Beliefs and Decision-making Behavior"; and Walker, "The Motivational Foundations of Political Belief Systems."

Under the influence of the cognitive revolution, George retained a loose version of both assumptions while emphasizing that beliefs are subject to change both in their contents and in their application as decision-making guides in the face of new information from the environment.[58] That is, beliefs are schemata, which are "cold" cognitions that represent working hypotheses about reality, rather than attitudes, which are "hot" cognitions that express needs embedded in the character of the believer. Individuals are scientific problem solvers rather than passionate consistency seekers. These kinds of amendments were local manifestations of the broad impact of the cognitive revolution on the cognitivist research program in world politics.

Did George's theoretical amendments predict novel facts subsequently corroborated empirically by himself or others? Holsti's typology of operational code belief systems was a theoretical attempt to specify schemata that were both very general and consistent with one another.[59] However, subsequent operational code research did not support the hierarchical interdependence between the schemata that represented philosophical and instrumental beliefs, nor was there much subsequent empirical support for the prediction that the first philosophical belief — about the "essential" nature of political life — was important.[60]

These initial results were consistent with a degenerating research program in which novel facts were not corroborated by empirical research based on cognitive consistency theory (T_1). However, the findings did not threaten the hard core that linked beliefs to other features in the leader's personality in the prototypical Leites analysis of the Bolshevik operational code. The re-introduction of a personality theory (T_2) emphasizing the motivational foundations of beliefs

58. George, "The Causal Nexus Between Cognitive Beliefs and Decision-making Behavior."

59. Holsti, "The 'Operational Code' as an Approach to the Analysis of Belief Systems."

60. Douglas Stuart, "The Relative Potency of Leader Beliefs as a Determinant of Foreign Policy: John F. Kennedy's Operational Code," University of Southern California Ph.D. dissertation (January 1979); Starr, *Henry Kissinger.*

represented a counter-balancing progressive move because it predicted novel facts, some of which were subsequently corroborated with an empirical analysis of the relationships among a leader's motivations, beliefs, and interpersonal style. Although they did not have belief systems that corresponded to internally consistent ideal types, the beliefs of U.S. presidents and secretaries of state were related to their motivational profiles and interpersonal style.[61]

The findings were also compatible with the valenced attribution theory of "hot" cognition (T_3) guiding current operational code analysis, in which schemata attributed to self and other are tagged with valences of positive and negative affect rather than linked consistently to one another. Although extra-cognitive, personality characteristics remain a focus of study within the operational code research program,[62] there is a clear shift toward identifying the attributions of leaders and simply coding them with affective tags in constructing indices of the leader's philosophical and instrumental beliefs.[63] The scores for key indices are then used to map the leader's image of self and other onto the Holsti typology and classify the leader's operational code. Because the assumption of internal consistency between philosophical and instrumental beliefs no longer organizes these attributions, the type of philosophical beliefs attributed

61. Walker and Falkowski, "The Operational Codes of U.S. Presidents and Secretaries of State."

62. See, e.g., Walker, "Psychodynamic Processes and Framing Effects in Foreign Policy Decision-making"; Mark Schafer and Scott Crichlow, "Bill Clinton's Operational Code: Assessing Material Bias," *Political Psychology*, Vol. 21, No. 3 (September 2000), pp. 559–572.

63. David Winter, Margaret Hermann, Walter Weintraub, and Stephen Walker, "The Personalities of Bush and Gorbachev Measured at a Distance," *Political Psychology*, Vol. 12, No. 2 (June 1991), pp. 457–465; Scott Crichlow, "Idealism or Pragmatism? An Operational Code Analysis of Yitzhak Rabin and Shimon Peres," *Political Psychology*, Vol. 19, No. 4 (December 1998), pp. 683–706; Walker, Schafer, and Young, "Systematic Procedures for Operational Code Analysis," pp. 175–190; Walker, Schafer, and Young, "Presidential Operational Codes and the Management of Foreign Policy Conflicts in the Post-Cold War World."

to others may be different from the type of instrumental beliefs attributed to self. [64]

In all three operational code theories (T_1, T_2, T_3), beliefs define the situation and prescribe a leader's response, but the causal mechanisms of cognitive consistency, motivated bias, and valenced attribution are different for each theory. The evolutionary pattern across these causal mechanisms toward re-incorporating affect with the analysis of beliefs via valenced attributions is consistent with a return to the study of "hot" cognition in social and political psychology.[65] The succession of theoretical amendments in the operational code research program has also followed roughly the pattern anticipated by Lakatos in his model of scientific research programs:

> Let us take a series of theories T_1, T_2, T_3,... where each subsequent theory results from adding auxiliary clauses to (or from semantical reinterpretations of) the previous theory in order to accommodate some anomaly, each theory having at least as much content as the unrefuted content of its predecessor.... Progress is measured by the degree to which a problem-shift is progressive, [i.e.] by the degree to which the series of theories leads us to the discovery of novel facts. We regard a theory in the series 'falsified' when it is superseded by a theory with higher corroborated content.[66]

Although the theoretical amendments in operational code analysis (T_1, T_2, T_3) have met the requirements of scientific progress in the Lakatos model by generating "novel facts," there is another model of scientific progress that describes more accurately and completely the

64. Walker, "Role Identities and Operational Code Analysis"; Walker, Schafer, and Marfleet, "The British Strategy of Appeasement."

65. Fiske and Taylor, *Social Cognition*; Shanto Ayengar and William McGuire, eds., *Explorations in Political Psychology* (Durham, N.C.: Duke University Press, 1993); George Marcus, "Emotions and Politics: Hot Cognition and the Rediscovery of Passion," *Social Science Information*, Vol. 30, No. 2 (June 1991); Tetlock, "Social Psychology and World Politics."

66. Lakatos, "Falsification and the Methodology of Scientific Research Programmes," p. 118. See also Terence Ball, "Is There Progress in Political Science?" in Terence Ball, ed., *Idioms of Inquiry* (Albany: SUNY Press), p. 24.

evolution of operational code analysis as a scientific research program. Larry Laudan offers a more complex image of scientific progress than Imre Lakatos. In Laudan's model, the goal of science is to solve problems rather than to seek novel facts, because solutions in science are approximate and impermanent.[67] According to Laudan, "anything about the natural world which strikes us as odd, or otherwise in need of explanation constitutes an empirical problem."[68] Progress occurs when theories solve empirical problems and minimize internal conceptual problems and anomalies:

> If problems are the focal point of scientific thought, theories are its end result.... If problems constitute the questions of sciences, it is theories which constitute the answers. The function of a theory is to resolve ambiguity, to reduce irregularity to uniformity, to show that what happens is somehow intelligible and predictable; it is this complex of functions to which I refer when I speak of theories as solutions to problems.[69]

Laudan counts an empirical problem as solved when a theory solves a research puzzle, even if there are not yet any well-corroborated or confirmed results that support the answer. The standard here is conceptual fruitfulness rather than excess empirical content associated with the corroboration of novel facts. A conceptual problem deals with questions about theories and not about the substantive entities that the theories address. Internal conceptual problems include a vague or inconsistent theory, while external conceptual problems refer to a conflict between two theories where the proponents of one theory believe the other theory to be well-founded.[70]

67. Larry Laudan, *Progress and Its Problems: Toward a Theory of Scientific Growth* (Berkeley: University of California Press, 1977).

68. Laudan, *Progress and Its Problems*, p. 15. Earlier (p. 13), he stresses, "I do not believe that 'scientific' problems are fundamentally different from other kinds of problems (though they often are different in degree). Indeed,... the view that I am espousing can be applied, with only a few qualifications, to *all* intellectual disciplines."

69. Ibid., p. 13.

70. Ibid., pp. 11–17.

In Laudan's view, there are three kinds of problems in science: unsolved (no theory solves them), solved (a theory solves them), and anomalies (one theory solves them while another does not). Progress occurs when the first and the third problems are transformed into the second by solving either an empirical or a conceptual problem. Scientists choose between theories by evaluating the number and importance of empirical problems solved minus the number of anomalies and conceptual problems the theory generates.[71]

Another important consideration is the rate of progress exhibited by a theory and its continued acceptability over time. When confronted with two theories, a generally accepted one and a rapidly progressing one, a scientist may invest intellectual efforts in both of them. Diversifying across theories and trying to solve the conceptual problems between them rather than choosing one over the other differentiates Laudan's more complex, non-linear model of scientific progress from Lakatos's sequential model of theoretical progress, in which one theory replaces another in a linear, evolutionary fashion.[72]

Progress in the form of transforming unsolved problems and anomalies into solved problems means that the Lakatosian standard of excess empirical content (predictions and corroboration) is only one criterion for indicating progress. Excess empirical content is progress in the form of "problem inflation," or an increase in the number of solved empirical problems. However, the solution of an anomaly is also counted by Laudan as progress, emphasizing the reduction in a conceptual problem without requiring corroboration. This reduction may be incremental in the form of movement along a continuum from inconsistency or implausibility between theories toward compatibility, reinforcement, or ultimately the "entailment" (derivation) of one theory from another one.[73]

The Laudan account of the growth and development of scientific knowledge seems to capture more precisely the trajectory of the

71. Ibid., pp. 17–31.

72. Ibid., pp. 108–114.

73. Laudan, *Progress and Its Problems*, pp. 48–54.

operational code research program. The multiple criteria for defining and detecting progress, i.e., the inflation of solved empirical and conceptual problems and the deflation of conceptual problems, capture important activities within the operational code research program. The solution of conceptual problems is largely ignored in a Lakatosian account of the program's trajectory. Examples of conceptual problem inflation (archetype construction) and deflation (archetype modification) include the construction of the original typology of operational codes by Holsti and its later reduction from six to four types of belief systems by Walker. More generally, there is less flexibility in the Lakatos account for simultaneously investing in several theories, dividing one's intellectual labor across theories, and giving equal weight to the tasks of empirical and conceptual problem-solving. However, Laudan would not be surprised to find cognitive and motivational theories coexisting within the operational code research program and eventually merging into a valenced attribution theory.

These examples of solving conceptual problems within the operational code research program illustrate general forms of both "problem inflation" and "problem deflation" identified by Laudan as important measures of scientific progress. Inflation includes archetype construction and weighting the significance of problems by generality within a theory that is very complex or somewhat vague, in order to clarify its relevance to unsolved problems. Problem deflation (the resolution of anomalies between theories that their respective proponents believe are well founded) includes the dissolution of contradictions due to the clarification of vague or inconsistent elements of a theory, and the deflation of a theory's domain (scope) or the modification of its archetypes.[74]

The coexistence of more than one general theory is another example of a more general feature ignored in the Lakatos account of scientific research programs. According to Lakatos, a general theory and its rival may rest on one or more touchstone theories whose contents are taken as givens; for example, the optical theory of telescopic lenses is taken

74. Laudan, *Progress and Its Problems*, pp. 48–69.

as a given in the testing of theories in astronomy.[75] However, the Laudan account more explicitly recognizes that "theory complexes" articulate a research program: sets of theories complement one another in the solution of common empirical problems. Cognitive theory, personality theory, and game theory all combine in the conduct of operational code analysis to produce solved problems. Internal progress is possible by reducing the conceptual problems associated with any of them, because it is logically unclear where to locate praise or blame for their collective successes and failures in solving empirical problems. Much of the effort in the operational code research program has addressed various relationships among these three kinds of theories.

The process of inquiry in the social sciences may also take on characteristics that are more consistent with Laudan's account of progress because of the tendency of scholars to rely on several middle-range theories in the absence of a general theory. In the study of world politics, the use of theory complexes may be more complicated than in the hard sciences, because theories are under-specified. That is, the form of the relationships between variables within each theory has not been worked out. The reasons for this shortfall may be conceptual or empirical: the theorist may not grasp them, or may not know how to measure them precisely enough for modeling purposes.

Social scientists have sometimes employed typologies in an attempt to deal with this problem. Even when the defining dimensions are distinct, a typology does not exhaust all possible combinations of values for each dimension unless they are reduced to a small number of ordinal or nominal categories. This kind of indeterminacy creates two kinds of problems. One is under-specification: the level of measurement precludes a formal mathematical model specifying all possible relationships. The other is the "null set" or "empty cell" problem created by the large number of combinations among the defining attributes of a typology that are logically possible but

75. Lakatos, "Falsification and the Methodology of Scientific Research Programs"; Ball, "Is There Progress in Political Science?"

theoretically uninteresting, such as many of the 78 two-person 2 x 2 games with ordinal utility values specified by game theorists.[76]

Social scientists have tended to respond by focusing on intuitively important configurations of the defining attributes, such as the Prisoner's Dilemma game that is prominent in the study of world politics. An extension and generalization of this coping strategy is to focus on such constructs as "social mechanisms," which fall short of covering laws but do explain the relationship between the restricted range of two or more variables by accounting for their connection.[77] This pattern of theoretical thinking characterizes the operational code research program and much of the social psychology on which it rests. Belief systems, schemata, cognitive heuristics, motivated biases, and valenced attributions are all mechanisms of bounded rationality that explain the connection between stimulus and response.

The picture of the theory complex that emerges from this perspective is the interaction of a combination of mechanisms: variable clusters with different combinations of values located at different levels of analysis that interact to explain actions and outcomes.[78] However, the results do not necessarily yield the covering laws expected as markers in standard accounts of scientific progress.[79] Given this tension, the Laudan account is more congenial and has less restrictive expectations than the Lakatos account with respect to this kind of theoretical thinking and empirical inquiry in the social sciences.

76. Anatol Rapoport and Melvin Guyer, "A Taxonomy of 2 x 2 Games," *General Systems: Yearbook of the Society for General Systems Research* (Ann Arbor, Mich., 1966), Vol. 11, pp. 203–214; Brams, *Theory of Moves*.

77. Peter Hedstrom and Richard Swedberg, "Social Mechanisms: An Introductory Essay," in Peter Hedstrom and Richard Swedberg, eds., *Social Mechanisms* (Cambridge, UK: Cambridge University Press, 1998), pp. 1–31.

78. George, "The Causal Nexus Between Cognitive Beliefs and Decision-making Behavior."

79. Hedstrom and Swedberg, "Social Mechanisms: An Introductory Essay."

Conclusion

An assessment of progress in operational code analysis depends on the criteria employed. In addition to the generation of novel facts and the solution of conceptual and empirical problems, therefore, it is reasonable to ask whether operational code analysis escapes the "endogeneity trap" and survives "severe testing," two criteria offered by other contributors to this volume.[80] Escaping the endogeneity trap requires that for beliefs to matter, they must be relatively independent of structural features of the decision-making environment and have a significant causal impact on decisions and outcomes.

Jervis argues that beliefs and psychological processes will be more important in the post–Cold War world, because structural external constraints will be less compelling and the range of choice will be greater than during the Cold War era.[81] Walker, Schafer and Young support this argument with evidence that the operational code beliefs of the Bush and Clinton administrations were both significantly independent of the unipolar strategic context following the Cold War and acted as important causes in the explanation of U.S. military interventions in post–Cold War conflicts.[82] This argument is also consistent with Keohane and Martin's conclusion that institutional theory is able to progress and escape the endogeneity trap by placing "more emphasis on agency, less on structure."[83] They note that structures do not lead in a determinate way to outcomes, because of the likelihood of inconsistent and indeterminate relationships among external structure, the domestic preferences of agents and principals,

80. Chapter 3 by Robert Keohane and Lisa Martin and Chapter 8 by David Dessler in this volume.

81. Robert Jervis, "Leadership, Post–Cold War Politics, and Psychology," *Political Psychology*, Vol. 15, No. 4 (December 1994), pp. 769–778.

82. Walker, Schafer, and Young, "Presidential Operational Codes and the Management of Foreign Policy Conflicts in the Post–Cold War World."

83. Keohane and Martin, Chapter 3 in this volume, p. 103.

and the multiple equilibrium possibilities for the outcomes of strategic interaction between agents and others.[84]

The growing realization that "beliefs matter" is reflected as well in attempts to meet "severe tests" of corroboration as a criterion of scientific progress. Dessler characterizes the realist research program's incorporation of additional variables in the form of strategic beliefs about the external environment as a progressive move, because it increases the explanatory power of structural realist theory by adding agent-level causal factors and gaining corroboration of additional novel facts.[85] Beliefs, in this account, are independent of external structure, because, for example, the responses of the European powers to a German threat varied by strategic doctrine before 1914 and during the 1930s, in the face of similar multipolar power distributions in the international system.[86] The growing literature on the culture of national security reinforces a recognition of the important role of beliefs in the explanation of strategic interaction by both realist and constructivist theorists.[87]

Just as structural and institutional research programs cannot escape the temptation to incorporate agent-level variables, neither can cognitivist research programs ignore domestic and external contexts in

84. Keohane and Martin, Chapter 3.

85. Dessler, Chapter 11, p. 401.

86. See also Thomas Christensen and Jack Snyder, "Progressive Research on Degenerate Alliances," *American Political Science Review*, Vol. 91, No. 4 (December 1997), pp. 919–922.

87. See Alastair Ian Johnston, "Thinking About Strategic Culture," *International Security*, Vol. 19, No. 4 (Spring 1995), pp. 32–64; Peter Katzenstein, ed., *The Culture of National Security* (New York: Columbia, 1996). For reinforcing the importance of this point in their comments on the initial version of this paper, I am indebted to two participants at the Arizona State University conference: Andrew Bennett noted the tendency by realists such as Christensen and Snyder to incorporate beliefs into their theoretical thinking, while Randall Schweller highlighted the emerging study of strategic culture as another manifestation of the importance of beliefs in thinking about national security problems.

subjecting their theories of world politics to severe empirical tests.[88] Each of these general research programs has evolved a pattern of complex relationships with the others, ranging from overt rhetorical rivalry to more subtle relationships of accommodation and assimilation in practice.[89] The lesson from operational code analysis as a scientific research program is that advances in international relations theory may well take the form of a "cautionary tale," in which progress depends on harnessing together fruitful and robust theories from different research programs.

What appears at first glance to be merely a series of amendments within a given research program may actually incorporate theories from other programs with real implications in Lakatosian terms for the program's hard core and the spirit of its positive heuristic.[90] A future examination of these dynamics in more detail may reveal that Laudan's description of research programs as "theory complexes" is more useful, and may thus point the way toward future cooperation rather than rivalry among general research programs in the study of world politics. One should be cautious, therefore, about treating theories as rivals to be either discarded or subsumed after a contest of predicting novel facts. A criterion that emphasizes survival of the fittest rather than tolerance of diversity risks straying from the path of evolutionary progress in international relations theory.[91]

88. Walker, Schafer, and Young, "Presidential Operational Codes and the Management of Foreign Policy Conflicts in the Post–Cold War World"; see also Charles Kupchan, *The Vulnerability of Empire* (Ithaca, N.Y.: Cornell University Press, 1994).

89. Robert Keohane, *After Hegemony* (Princeton, N.J.: Princeton University Press, 1984); David Baldwin, *Neorealism and Neoliberalism* (New York: Columbia University Press, 1993); Tetlock, "Social Psychology and World Politics."

90. Elman and Elman, Chapter 2 in this volume.

91. Ball, "Is There Progress in Political Science?"