Pre-Behavioralism in Political Science

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Political behavior research has delivered less than the "behavioral revolution" seemed originally to promise. A survey of recent work suggests that the reason is not its epistemological premises (which are accepted here) or its methodology, but (1) its unsystematic, atheoretical character and limited range of research topics, and (2) the erroneous conception of human nature on which research rests. Compared with either the established principles of modern biobehavioral science or the conceptions of human problems of earlier political science, political behavior research remains "pre-behavioral."

To progress beyond this stage, political scientists must recognize and apply the basic knowledge about human behavior provided by the biobehavioral sciences. Two brief examples of such application are given: how ethological knowledge can supply a needed theoretical perspective for identifying political behavior problems worth studying; and how neurophysiological knowledge, particularly psychophysiology and psychophysics, can correct mistaken conceptions of the relationship between political attitudes, political words, and political actions.

The intellectual history of the so-called "behavioral movement" in political science is by now familiar to all political scientists. How it began in protest against formalistic, historicist, and juristic conceptions of political science's subject matter and rose to presumed hegemony in the discipline against the protests of antibehaviorists of various views needs no retelling here (Truman, 1955; Dahl, 1961; Charlesworth, 1962; Kirkpatrick, 1962; Eulau, 1969a). Also familiar are more recent allegations by radical and "post-behavioral" critics of political behavioralism's biases, "positivistic" blindness to human values, and the "triviality" and "irrelevance" of its findings (McCoy and Playford, 1967; Easton, 1969; Spragens, 1969).

I am concerned here, however, not with the history of political science but with the capability and performance of political behavior research on its own terms. On the one hand, I am convinced that accumulating scientific knowledge of political behavior is a legitimate, worthy, and attainable goal. Yet on the other hand, I am concerned that, although research in political behavior has supposedly captured the main bastions of academic political science, particularly in America, it does not appear to be working toward its goals as effectively as it once promised to do. I therefore accept without further debate here the premises and objectives of "the behavioral persuasion."[1] I wish to discuss here its lack of progress and the reasons for it, and to suggest what political researchers might do about the situation.

I do not wish to imply that all political

[1]This does not mean that philosophical justification of these premises is unnecessary or that the issues involved in it are easy or trivial. All it means is that other questions are at issue here. A convenient list of the premises and objectives accepted here is the set offered by David Easton (1962, pp. 6–7) as points on which "most students of politics, even those unwilling to accept classification as behavioralists, would probably agree":

1. *Regularities:* the assumption that "there are discoverable uniformities in political behavior."
2. *Verification:* the assumption that "validity of such generalizations about those regularities must be testable, in principle, by reference to relevant behavior."
3. *Techniques:* the assumption that "means for acquiring and interpreting data are problematic and need to be examined self-consciously."
4. *Quantification:* the assumption that measurement and quantification, where possible, relevant, and meaningful, are essential to interpreting data and verifying generalizations.
5. *Values:* the assumption that "ethical evaluation and empirical analysis should be kept analytically distinct."
6. *Systematization:* the assumption that "theory and research are to be seen as closely intertwined parts of a coherent and orderly body of knowledge."
7. *Pure science:* the assumption that "understanding and explanation of political behavior logically precede and provide the basis for efforts to utilize political knowledge in the solution of urgent practical problems of society."
9. [Interdisciplinary] integration: the assumption that "political research can ignore the findings of other disciplines only at the peril of weakening the validity and undermining the generality of its own results."

scientists should become "political behavioralists," or that such study should dominate the discipline. Scientific explanation of political behavior does not take the place of political philosophy, analysis of political values, historical investigation of political events, nonquantitative analysis of empirical phenomena, or many other intellectual undertakings. On the other hand, the fact that political behavior research does not attempt to answer all questions about government and politics does not justify believing that its findings are irrelevant to nonbehavioral political scientists whose major concern is not with the behavioral enterprise. Indeed, the theoretical significance of political behavior research must be measured largely by the relevance of its findings to the concerns of other political scientists—a point to which we shall return in a moment.

We are concerned here with only one aspect of the profession, one essential part of our collective task of adding to our stock of knowledge, namely, the empirical study of political behavior. My thesis is that political behavior research to date has worked with deficient and inappropriate concepts, so that it has not yet performed as a "behavioral science" properly speaking. Indeed, judging by its fruits so far, political behavior research might well be called a "pre-behavioral science." But the genuine behavioral sciences do offer principles, findings, and research methods which, applied to the study of political behavior, can contribute to the search for more and better-grounded knowledge.

I

It is necessary first to define a bit more precisely the ground to be covered, for it is widely believed that most modern political science is now "behavioral." This misconception arises from the assumption that "political behavioralism" is identical with "quantification" in political study. To be sure, quantitative measurement and analysis of data is a commonly recognized and important characteristic of behavioral work on politics (see n. 1), but it is by no means its defining or central characteristic. Quantitative methods are appropriate for many nonbehavioral studies and are commonly used in them. What all so-called "behavioral" approaches or studies have in common that *is* definitive of their behavioral character, as Heinz Eulau has cogently explained, is a "commitment ... to the individual person as the empirical unit of analysis" (1963, pp. 13–14, emphasis added).

Even without allowing for misidentification of much work as "behavioral" simply because it is quantitative, however, the predominance of a political-behavior orientation in political science is generally exaggerated, at least regarding quantity. A crude index lumping together what political scientists read along with what they write may be arrived at by classifying all the 4,173 works treated in the book review section of the discipline's major journal over the period 1968–1977 into (1) political behavior works, (2) nonbehavioral quantitative works, and (3) all others. Admittedly, such a classification is highly subjective, and depends in most instances on the assumption that book reviewers report reliably the content of the works reviewed. Still, the proportion of political behavior work is remarkably low, averaging only 4 percent of the total each year, and ranging from a high of 11 percent to a low of 2 percent. Even if we include those empirically oriented and quantitative works (such as nonbehavioral simulations, models, general methodological treatises, etc.) which are often erroneously called "behavioral" solely because of their quantification, the proportion is still not impressive: behavioral-cum-other-quantitative-empirical work averages only 8 percent of the total works each year, with annual proportions ranging from 5 to 17 percent.

A considerably more accurate index of the state of research in political science, however, is provided by articles in *The American Political Science Review* which either report research or deal conceptually, theoretically, or critically with substantive problems for political behavior research. Table 1 shows that, of the 505 articles and research notes published in the *Review* during the period 1968–1977, 180 were political behavior studies, including political behavior methodology, and 325 were nonbehavioral. (The table also shows the particular field of political science addressed by the latter. Those nonbehavioral studies which are quantitative and empirical are included under their respective fields.) Although political behavior research now occupies a much more prominent position than the book review survey suggested—36 percent of the total 505 articles, more than twice as many each year as for any other field—it is still not, by this measure, the majority voice of the discipline. The proportion of the total contributed by political behavior research is about one-third each year, never reaching more than 44 percent in any year and sometimes dropping as low as one-fourth.

Political behavior research, then measured in this crude way, clearly comprises a minority subset of the discipline. In any case, this sample

Table 1. Subject Matter of *Review* Articles and Research Notes

Subject	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	Total
Political Behavior	16	22	22	19	16 (2)	15 (1)	17 (2)	14	16 (4)	23	180 (9)
Comparative and Foreign Government, Politics, Institutions, Processes	12	3	11	5	7	6	14	3	5	5	71
Political Philosophy	6	9 (1)	4	5 (1)	7 (3)	2	7	6 (2)	6 (1)	4	56 (8)
Positive Theory	5	4	5	8 (2)	3	3	6 (1)	16 (4)	3	2	55 (7)
American Government, Politics, Institutions, Processes	5	1	3	6 (1)	7	5	13 (3)	6	4	4	54 (4)
Public Policy and Public Administration	2	7	2	3	3 (1)	7 (1)	3	4	3	7 (2)	41 (4)
International Relations, Law, Organization	3	4	1	2	4	3	0	3	2	4	26
General Methodology, Techniques	2	0	1	0	1	3	1	0	2	1	11
Other	1	0	1	2	1	1	2	1	0	2	11
Totals	52	50 (1)	50	50 (4)	49 (6)	45 (2)	63 (6)	53 (6)	41 (5)	52 (2)	505 (32)

Source: American Political Science Review 62–71 (1968–1977).

Note: Numbers in parentheses are the number of "Comments" on specific articles; they have been included in the total figure preceding them.

of 180 articles will serve also as the basis for examining the subject matter and conceptual character of recent political behavior research.

II

In general, individual studies measure up well to high technical standards of research design and conduct. Most political behavior researchers pay careful attention to sampling methods, operationalization of concepts, measurement of variables, testing the validity of findings and inferences, and so on. It is in the aggregate that disquieting features begin to appear.

A. Unsystematic Diversity of Research Questions. For example, these studies collectively span a fairly narrow range of theoretical concerns. A breakdown of the sample of *Review* articles and of a sample of 26 introductory-level textbooks on political behavior (Table 2) clearly bears out the prevailing impression that political behavioralists tend to overspecialize in voting behavior (60 of the 180 *Review* articles deal with it as a principal concern). They also appear much readier to study the behavior (or apathy) of individuals in the mass than that of political activists and members of political elites, even though every political theorist since Plato has recognized that the activity of government consists overwhelmingly of actions by the few (51 *Review* articles deal with elite behavior, compared with 131 on aspects of "mass" behavior). The same breakdown also demonstrates the great extent to which concern with routine, institutionalized behavior overshadows

Table 2. The Subject Matter of Political-Behavior Study: Object(s) of Inquiry and Principal Topics of Discussion in 180 Articles and 26 Books on Political Behavior

Object of Inquiry or Topic	Number of *Review* Articles on Subject	Number of Discussions in 26 Books[a]
Individual Political Behavior in General (Theory, Models, etc.)	3	NA[b]
Mass (Undifferentiated Individuals') Behavior		
Political socialization	14	12
Politicization, apathy, alienation	18	10
Civic obedience, political support	18	7
Political opinions, beliefs, attitudes		
In general (theory, models, etc.)	5	12
Ideology	3	9
Issue opinions, preferences	5	3
Other opinions, beliefs, attitudes	6	2
Total, political opinions, etc.	19	26
Voting behavior	60 (9)[c]	14
Unconventional (non-institutionalized) behavior	2	3
Total, mass behavior	131 (9)[c]	72
Behavior of Political Elites		
General, leadership	7	4
Institutional offices, roles		
Legislative	23	NA[b]
Executive, administrative	6 (1)[c]	NA[b]
Judicial	5	NA[b]
Political party leaders	10	NA[b]
Total, institutional offices, etc.	44 (1)[c]	10
Total, behavior of political elites	51 (1)[c]	14
Methodology	2	NA[b]
Totals	187 (10)[c]	NA

Source: American Political Science Review 62–71 (1968–1977) and 26 selected introductory-level books on political behavior.

[a]Originally reported in Wahlke, 1976.

[b]Not ascertained.

[c]Number exceeds total number of articles surveyed (180) because some articles deal with more than one topic.

concern with unconventional behavior, such as violence or social and political movements. (Only two articles treated these latter topics.)

Even though there are large gaps in what it covers collectively, political behavior research still exhibits an incredible diversity of underlying guiding conceptions, and a near-total lack of consensus about what are the main topics for research, and the main subdivisions of the field. The headings and subheadings in the classification used above (Table 2) were produced by one person's "empirical coding" of the content of the works classified; they are neither used in nor implied by any of the works surveyed. No two of the 26 books surveyed, for example, share more than one major section heading in common. The content, organization, and arrangement of chapters varies equally widely among them. And few of them even deal with more than half the topics listed, broad as they are.

B. Paucity of Theoretical Concerns. A related characteristic of political behavior research in the aggregate is the paucity of its theoretical concerns. It rarely aims at generalization; research efforts have been confined essentially to case studies of single political systems, most of them dealing, as is well known, with the American system (or some part of it). Of our 187 sample discussions of various topics in the *Review* over a ten-year period, 134 were focused entirely on American contexts and 29 on some other single case or system, while only 12 could be considered general or conceptual beyond the single case, and only 10 even ventured comparison among several systems or cases (Table 3).

C. Level-of-Analysis Problems. Lack of generality, top-heavy emphasis on American politics, and insufficient breadth all reflect a more serious theoretical and conceptual deficiency in political research generally, its neglect of the "level-of-analysis" problem. It is sometimes said that political behavior research is "micro-level" study whereas political systems or governments viewed institutionally call for "macro-level" study. But, as Eulau has explained, "Commitment ... to the individual person as the *empirical* unit of analysis ... does not mean that research is restricted to the individual person as the *theoretical* focus of investigation" (1963, pp. 13, 14, emphasis added). Roles, groups, cultures, institutions, or other analytic entities may be the theoretical units of analysis even though individuals are the units of observation, i.e., the units about which data are originally collected for later aggregation relevant to the theoretical analysis.[2] The analytic distinction between the study of political behavior of individuals per se and what has been called "the behavioral study of politics" (Eulau, 1962, p. 31) turns on the level of analysis undertaken. The difference between "macro-" and "micro-level" is, of course, not categorical but a matter of degree; along the continuum lie an indefinite number of intermediate levels of generality and complexity (Eulau, 1969b). One essential mark of the theoretical and conceptual adequacy of research is how clearly it specifies its own level(s) of analysis and how clearly and comprehensively it relates its principles and findings to those at other levels.

The point can be simply illustrated. Consider, for example, the frequent studies finding that election results vary predictably with changes in economic conditions (depression, inflation, unemployment, etc.). Insofar as these studies focus on electoral outcomes, using various kinds of aggregate election and demographic data, they clearly operate at a level of analysis closer to the "macro" than the "micro" end of the spectrum. But to ask *why* this relationship obtains is to promote analysis much more "micro" in character, since it involves explaining the voting behavior of individuals. Do their votes reflect personal satisfaction or dissatisfaction with their individual circumstances or with society in general? Both? Neither? What? Plainly, micro-level analysis will expand considerably our understanding of aggregate-level phenomena.

But, by the same token, observation of the macro-level relationship between economic conditions and electoral outcomes ought also make the observer wonder, "So what?" What difference does it make that is of interest to students of politics and government? One might speculate (hypothesize) that sizable gyrations in electoral outcomes over short periods both indicate and promote a certain kind of instability in the system, and thereby contribute toward changing it or bringing it down. One might also suspect that the distribution of material and social resources resulting from government policies which differ according to the different electoral outcomes would vary widely. In any case, questions like these link the original concern over the relationship between economic conditions and electoral results

[2]The principle being stated here is, of course, what is often described as "methodological individualism" (see Brodbeck, 1968).

Table 3. Level of Generalization in 180 *Review* Articles on Political Behavior

Level of Generalization	Number of Analyses: Individual Behavior (General)	Mass (Undifferentiated Individuals' Behavior): Political Socialization	Politicization, Apathy, Alienation	Civic Obedience, Political Support	Opinions, Attitudes, Beliefs: Opinion, Belief (General)	Ideology	Issue Opinions, Preferences	Other Opinions, Attitudes	Total, Opinions, Attitudes	Voting Behavior	Unconventional Behavior	Total Mass Behavior
United States Only[a]	0	11	7	14	(10)	(20)	(5)	(3)	11	50	1	94
Other Single Systems	0	1	3	3	(1)	(1)	(–)	(1)	3	10	0	20
Comparative, Multi-system[b]	0	0	7	1	(–)	(–)	(–)	(–)	0	0	0	8
General, Conceptual	3	1	0	0	(3)	(–)	(–)	(2)	5	0	1	7
Vague, Ambiguous, NA	0	1	1	0	(–)	(–)	(–)	(–)	0	0	0	2
Totals	3	14	18	18	(5)	(3)	(5)	(6)	19	60	2	131

Level of Generalization	Number of Analyses: Political Elites Behavior: General Leadership	Institutional Offices or Roles: Legislative	Exec. Admin.	Judicial	Political Party Leaders	Total, Inst'l. Offices	Total Elite Behavior	Methodology	Totals
United States Only[a]	5	(18)	(6)	(5)	(6)	35	40	0	134
Other Single Systems	0	(5)	(–)	(–)	(4)	9	9	0	29
Comparative, Multi-system[b]	2	(–)	(–)	(–)	(–)	0	2	0	10
General, Conceptual	0	(–)	(–)	(–)	(–)	0	0	2	12
Vague, Ambiguous, NA	0	(–)	(–)	(–)	(–)	0	0	0	2
Totals	7	(23)	(6)	(5)	(10)	44	51	2	187[c]

Source: American Political Science Review 62–71 (1968–1977).

[a]Includes studies of single states, regions, counties, or other American sub-systems, and analytic units (parties, institutional groups, etc.).

[b]Includes studies analyzing or comparing more than one American subsystem, as well as foreign systems.

[c]Number of treatments exceeds number of articles (180) since some articles deal with more than one topic.

to concerns at a higher level of analysis, closer still to the "macro" end of the continuum. (For more detailed illustration of this particular substantive problem, see Arcelus and Meltzer, 1975; and Goodman and Kramer, 1975.)

This illustration also suggests another point about levels of political analysis which is almost universally neglected in political behavior research: political inquiry is rooted toward the *"macro"* end of the continuum, since it is there that the common subject matter uniting all political scientists is defined. Traditionally, the initial, orienting curiosity of political scientists, as of political philosophers before them, was about "macro-level" questions concerning properties, attributes, or performances of political systems—stability and change in governments and polities, pursuit and attainment of normative goals (justice, quality, order, etc.), and many others. A *political* researcher can tell what aspects or elements of individual behavior are worth examining only by their ultimate bearing on such matters at higher levels of analysis. What Fred I. Greenstein once said of political scientists studying political socialization applies a fortiori to the student of political behavior more generally (Greenstein, 1970, p. 978):

> He ought to orient himself self-consciously to the ends of [the behavior he is studying]. In "moving back" from the normal preoccupation of political scientists with system-functioning in order to examine the antecedents of behavior in political systems, he needs to be constantly guided by models and conceptions of that from which he is moving back. He cannot merely conceive of his work as an appendage to the "basic" study of human development.

Or, to use Heinz Eulau's terms, only if we are guided by curiosity about "the behavior *of* collectives" of a certain sort do we have any reason to get curious about particular aspects or elements of "the behavior of individuals *in* collectives" (Eulau, 1969b, p. 3).

Such an approach reveals why political behavior research is often criticized for being "too behavioral." We can roughly classify the analyses in our sample of 180 *Review* articles according to the conceptual linkages they make or assume, distinguishing them according to whether or not they include analysis at the political system (or subsystem) level, the level of individual behavior, and/or the level of antecedents or causes of individual behavior. (This distinction is not based purely on level of analysis, since some of the commonly examined antecedents or correlates of individual behavior are in fact contextual or other properties of larger political and social systems, while others, such as psychological factors, are more "micro-level" than the individual behavior they explain. But the logic of explanation in the following discussion makes it convenient to lump both sorts of variables together here.) On this basis (Table 4), we find that only 15 of the 187 analyses in those studies make or suggest linkages between all three of these levels (lines 1–4 in the table); 163 of them totally omit reference to concepts or problems at any analytic level higher than the acting individual (lines 9–10), and, of these, 21 are purely descriptive, relating individual behavior to no antecedents or lower-level concepts or problems (line 10). Five of the others vaguely allude to political-system or political-process concepts or problems without explicitly identifying the higher-level concepts or variables concerned (lines 3, 4, and 6). Three analyses deal exclusively with (nonpolitical) antecedents or causes of individual political behavior without discussing the behavior in question (line 11). And two of them leave vague and unspecified the nature of that behavior (lines 4 and 7).

We can get a more concrete picture by examining the concepts and variables with which these works deal. Table 5 arrays the principal ones (hardly all of them!) in a format matching the logical relationships just described, i.e., grouping together those having to do with system properties or attributes (part A), those defined in terms of individual behavior (part B), and those having to do with causes or antecedents of individual behavior (part C). They have been further grouped within each of these parts more or less according to their location on the "micro-macro-level" continuum. For example, selection of government personnel, or the character of authority and power relations (items 9 and 10 in part A) are in a sense "prior to," i.e., more "micro-level" than, say, political stability or political integration (items 1 and 2 in part A). Similarly, political motivations or ideological orientations (items 9–d and 9–c in part B) are prior to more explicit variables of political role performance (item 1). Despite some inconsistencies, ambiguities, and uncertainties, and allowing for the placement of contextual variables discussed earlier, one can think of Table 5 as displaying the "micro-macro-level" continuum in finer detail, running from item 6 of Table 5–c at the "micro" end to item 1 of Table 5–a at the "macro" end.

Viewed as a whole, this list reinforces the impression just sketched of the unsystematic character of political behavior research. Such system and order as does appear in the grouping and arrangement of entries in the table has been

Table 4. Micro-Macro Linkages in Political Behavior Research: Elements of Explanation and Description in 180 *Review* Articles

Conceptual Linkages[a] Macro ⟷ Micro	Individual Behavior (General)	Mass (Undifferentiated Individuals' Behavior)										
					Opinions, Attitudes, Beliefs							
		Political Socialization	Politicization, Apathy, Alienation	Civic Obedience, Political Support	Opinion, Belief (General)	Ideology	Issue Opinions, Preferences	Other Opinions, Attitudes	Total, Opinions, Attitudes	Voting Behavior	Unconventional Behavior	Total Mass Behavior
1. 3—2—1	1	0	1	1	(–)	(–)	(–)	(–)	0	5	0	6
2. 3—2—1	0	0	0	0	(–)	(–)	(–)	(–)	0	0	0	0
3. 3—2—1	0	0	0	1	(–)	(1)	(1)	(1)	2	0	0	3
4. 3—2—1	0	0	0	1	(–)	(–)	(–)	(–)	0	0	0	1
5. 3—2	0	0	0	0	(–)	(–)	(–)	(–)	0	0	1	1
6. 3—2	0	0	0	0	(1)	(–)	(–)	(–)	1	0	0	1
7. 3—2	0	0	0	0	(–)	(–)	(–)	(–)	0	0	0	0
8. 3—1	0	0	0	0	(–)	(–)	(–)	(–)		0	0	0
9. 2—1	0	13	17	15	(1)	(2)	(5)	(4)	12	54	1	112
10. 2	2	1	0	0	(1)	(–)	(–)	(1)	2	1	0	5
11. 1	0	0	0	0	(2)	(–)	(–)	(–)	2	0	0	2
Totals	3	14	18	18	(5)	(3)	(5)	(6)	19	60	2	131

Table 4. (continued)

Conceptual Linkages[a] Macro ⟷ Micro	Political Elites Behavior: General, Leadership	Institutional Offices or Roles: Legislative	Exec., Admin.	Judicial	Political Party Leaders	Total, Inst'l. Offices	Total Elite Behavior	Method-ology	Totals
1. 3—2—1	2	(1)	(–)	(–)	(–)	1	3	0	10
2. 3—2—1	0	(1)	(–)	(–)	(–)	1	1	0	1
3. 3—2—1	0	(–)	(–)	(–)	(–)	0	0	0	3
4. 3—2—1	0	(–)	(–)	(–)	(–)	0	0	0	1
5. 3—2	0	(1)	(–)	(–)	(1)	2	2	0	3
6. 3—2	0	(–)	(–)	(–)	(–)	0	0	0	1
7. 3—2	0	(–)	(–)	(–)	(1)	1	1	0	1
8. 3—1	0	(–)	(1)	(–)	(–)	1	1	0	1
9. 2—1	5	(14)	(3)	(–)	(7)	24	29	1	142
10. 2	0	(5)	(2)	(5)	(1)	13	13	1	21
11. 1	0	(1)	(–)	(–)	(–)	1	1	0	3
Totals	7	(23)	(6)	(5)	(10)	44	51	2	187[b]

Source: American Political Science Review 62–71 (1968–1977).

[a] 3 = Political system variables
2 = Individual behavior variables
1 = Variables antecedent to or causal of behavior
Solid-border boxes indicate use of explicit concepts and/or operationalized variables. Dash-line boxes indicate vague, unspecified or merely implied concepts. (Absence of box indicates failure to deal with that level.)

[b] Total is greater than the number of articles (180) because some articles deal with more than one topic.

Table 5. Concepts and Variables Used (or Implied) in 180 *Review* Articles on Political Behavior

A. System Properties, Attributes, Variables (Corresponds roughly to Level 3 in Table 5)

1. Political Stability:
   - Civil Strife
   - Party change
   - Personnel Circulation
2. Integration of Political Community
3. Political Structure:
   - Composition of political groups
   - Character/level of party competition
4. Representativeness of Government
5. Accountability of Government
6. Coalition Formation
7. (Policy Outcomes, Consequences)
8. Policy Outputs:
   - Legislative Decisions
   - Administrative-agency decisions
   - Judicial decisions
   - Party platforms
9. Selection of Government Personnel:
   - Election outcomes
10. Authority/Power Relationships
11. Agenda Building
12. Character of Political Discussions:
    - Level/tone
    - Compromise/bargaining

B. Individual Political Behavior (Corresponds roughly to Level 2 in Table 5)

1. Political Role Performance (Elite):
   - Style, power-orientation
   - Roll-call voting
   - Other political decisions: allocation of campaign funds
2. Political Activism, Ambition (Elite):
   - Office-seeking
3. Non-Institutionalized Behavior:
   - Riot, Protest, Demonstration Participation
   - Demand-making: Complaint, Petition
4. Civic Role Behavior
   - General Citizen Participation (Scale)
   - Voting: participation
     candidate choice
     referenda choices
5. Political Action Orientations
   - Potential for political violence
   - Potential for riot participation
6. Political Support:
   - Political trust/distrust
   - Legitimacy orientations
   - Trust/support/approval for regime, authorities, institutions
   - Support for democratic rules
   - Support for reformist action
7. Disengagement (Exit), Apathy, Attention
8. Political Communication:
   - Media exposure/usage
   - Information sources
   - Engagement in political discussion
9. Political Cognitions and Perceptions, Cognitive/Affective:
   a. Political Interest, Knowledge, Awareness
   b. Evaluations of, Preferences for:
      - Government, Government Effectiveness
      - Authority figures, officials
      - Power, influence, authority
      - Political roles, offices
      - Political parties
      - Candidates
      - Political problems, issues, policies
      - Groups
      - Community sentiment
      - Political events (e.g., riots)

C. Bases and Antecedents of Individual Political Behavior (Corresponds roughly to Level 1 in Table 5)

1. Bases of Conscious Decision, Choice
   - Utility maximization calculations
   - Relative deprivation/gratification
   - Satisfaction with economic situation (past, present, future)
2. Identifications, Reference Groups:
   - Race, racial militance
   - Religion
   - Political party
   - Allegiance to dissident groups
3. General (Social) Orientations, Attitudes, Predispositions:
   - Tendency toward Conformity/Deviation
   - Social (and political) misanthropy
   - Value priorities
   - Holist/localist conceptions of world
4. Habit
5. Personality, Character:
   - Sense of personal efficacy
   - Self esteem
   - Achievement need, need inviolacy
   - Group hostility
   - Anomie
   - Social-psychological maladjustment: social inferiority, social competence
6. Individual Psychic Developmental Structure/Process:
   - (Phylogenetically fixed) developmental states (Piaget, Kohlberg)
   - Biological pre-programming
   - Schema-processing
   - Spatial archetypes
   - Cognitive balance/dissonance
7. Events (Idiosyncratic):
   - Catastrophe, War
   - Ecological incidents
   - Economic conditions, changes
8. Daily-life Experiences:
   - Discrimination
   - Emotional experiences in political groups
   - Marijuana usage
   - Political experience (past)
9. Political Context:
   - Form of government (local)
   - Election system, ballot type
   - Party structure: balance, competition
   - Recruitment system: volunteerism
   - Electoral-district type (1-member, e.g.)
   - Prevailing political culture, opinions
   - Workload of government agencies

Table 5. (continued)

A. System Properties, Attributes, Variables (Corresponds roughly to Level 3 in Table 5)	B. Individual Political Behavior (Corresponds roughly to Level 2 in Table 5)	C. Bases and Antecedents of Individual Political Behavior (Corresponds roughly to Level 1 in Table 5)
	c. Ideological Orientations: Left-right, liberal-conservative Radicalism, extremism Authoritarianism, egalitarianism Political style orientations: generalist/particularist moralist/pragmatist d. Political Motivations, Predispositions: Sense of representation Sense of civic duty Sense of political efficacy Power satisfaction (sense of possession) Political alienation: Powerlessness Normlessness Civic tolerance Policy-thinking modes: Instrumental attitudes (toward politics, government) personal/political good-government/benefits orientation people-helping/community-serving Bandwagon/underdog orientation Friendship preferences (political/nonpolitical)	10. Socioeconomic Context: Community size Organizational development Economic Development: Industrialization Urban-rural balance Econ. dependency Race-, class-structure 11. Family Experiences: Parents' political identity, activity, attention, opinions Authority structure (roles, authority models) Affective relationships 12. (Individual's) Socio-Cultural Background: Sex–Age–Marital status Nation, Region, State, Local community, neighborhood Race–Ethnic group, Tribe Affiliations: Religion, religious attendance Organizational (union, etc.) Friendships, location of friends Education: Level, Type, Political content Social status: Subjective social class Urban-rural-metro origins/residence Income, home ownership Occupation, employment status Mobility: geographic, social

Source: American Political Science Review 62–71 (1968–1977).

imposed by the classifier: few articles deal systematically with more than a handful of the concepts listed. Many deal with them in a different logical fashion from that suggested by the table. And some, in fact, reverse the order of dependence-independence suggested there. The frequent allegation of "lack of relevance" of political behavior research, as well as its relative theoretical immaturity, is borne out by the small number of "end variables" of political inquiry shown in part A of the table, and by the fact (not apparent from the table itself) that these are in almost all instances treated in unoperationalized fashion and not formally recognized as "dependent variables."

The most theoretically significant relationships dealt with in research are those between one or another variable (or small subset of them) from the individual-behavior set (part B of the table) with some one or a few from the causes or antecedents listed in part C. This is appropriate when the objective is to explain individual political behavior. But the choice of variables to be examined (both dependent and independent) rarely relates to any recognized body of "middle-range," let alone more comprehensive theory. Research all too often looks only at relationships between individual-behavior variables (i.e., only those in part B of the table), treating them now as dependent, now as independent, without reference to larger questions or fundamental explanations.

The prevailing atheoretical character of most political behavior research is indicated by the extent to which concepts and variables are no more than brute-empirical operational definitions virtually devoid of conceptual content. Indeed, few bodies of research literature in the social sciences more clearly support the indictment made by several prominent psychologists of "the laissez-faire intellectualism of the operational definition":

> Operational definitionalism ... provided a methodological justification for the scientist not to stray beyond a highly narrow, if reliable base. One could follow a single method in developing data and be "pure," even if this purity were more associated with sterility than virtue (Webb, Campbell, Schwartz, and Sechrest, 1966, p. 172).

D. Preoccupation with Attitudes, Neglect of Behavior. But the most striking and important characteristic of the concepts and variables presented in Table 5, especially those of individual behavior (part b), is that they are not really "behavioral" at all, strictly speaking, but "attitudinal" or "mentalistic." This is most obvious in the case of political cognitions and perceptions (item 9, Table 5–b) which alone make up well over half the entries in the list of individual-behavior variables. It is also true of the concepts of political-action orientation, political support, and disengagement/attention (items 5, 6, and 7, Table 5–b). Of all the concepts and variables used to describe, classify and measure individual behavior, only those under the headings of political role performance, political activism, noninstitutionalized behavior, civic role behavior, and political communication (items 1–4, 8, Table 5–b) are genuinely behavioral. In short, most of the variables of individual political behavior investigated by political behavior research are not conceived in behavioral terms at all, but are defined as entities whose existence and character can only be indirectly inferred, never empirically established. The point has been forcefully stated by Przeworski and Sprague (1971, p. 183):

> The reasoning of a psychometrician is essentially inductive. If a set of observable phenomena is found to covary, it is treated as a function of some underlying trait. The observable behaviors are treated as "items" or "indicators," and an extensive metatheory of error and dimensionality underlies the item analysis approach. Substantive theory enters this kind of measurement only through the back door: ... The world of a psychometrician is elusive–intelligence, dominance, authoritarianism, efficacy, and fatalism are all terms directly unobservable, somewhat overlapping, and theoretically independent.

Moreover many, if not most, of the variables which appear to be conceived in terms of genuine behavior are in actual research not approached in behavioral terms. Even in voting behavior research, which deals with behavioral dependent variables as much as any field of political behavior study, indexing the individual behavior with direct empirical referents is the rare exception.[3] In many cases what is observed is some aggregate record, such as county voting returns, from which inferences are made to the individuals composing the group, a procedure which, as is well known, can sometimes lead analysts into the trap of fallacious ecological inference.

The most common referent of behavioral as of attitudinal variables, however, is the individual's self-report of actions performed or intended. One expert estimate not long ago was that "some 90 percent of social science research is based upon interview and questionnaires" (Webb, Campbell, Schwartz and Sechrest, 1966, p. 1). In our sample of 180 *Review* articles, 131 of the 187 analyses reported rest partially or entirely on such data (Table 6). Of these 59 are original reports of survey data and 65 report secondary analyses.[4]

[3]One such exception is a study in which the traces of individuals' ballot marking in a referendum were observed and recorded during the process of counting ballots (Mueller, 1969). In an even rarer type of study, researchers examined administrators' behavior toward militant citizens by actual observation of administrative-agency personnel dealing with their clients (Fainstein and Fainstein, 1976).

[4]As the following table shows, over half the secondary analyses use SRC/CPS data from the Inter-University Consortium for Political and Social Research (38 articles), but a substantial number (15) is based on such other familiar political data sets as those which produced the Almond-Verba (1963) study of *The Civic Culture* or the Verba and Nie (1972) study of participation, or on data from commercial polls (12 articles based on AIPO, NORC, and similar data).

Data Sets Used	Number of Articles Using Data for: Original Analysis	Secondary Analysis
Various SRC/CPS (University of Michigan)	2	38
Verba-Nie Participation Study, 1967	0	1
Butler and Stokes, Great Britain, 1963	0	2
Almond-Verba Five-Nation Study	0	7
SRC/SERS (University of North Carolina)	0	2
SRC High School Seniors/ Parents Study (Jennings and Niemi)	5	0
McClosky Minnesota and U.S. Ideology and		

(continued next page)

Nothing manifests more clearly the "mistaken belief in the operational definition of theoretical terms" mentioned earlier (Webb, Campbell, Schwartz and Sechrest, 1966, p. 3) than this use of survey data. It was, indeed, expressly that which Campbell and his associates had in mind:

> The corkscrew convolutions of the maze of behavior were ironed, by definitional fiat, into a two-dimensional T-maze. To define a social attitude, for example, solely by the character of responses to a list of questionnaire items is eminently legitimate–[but] almost everything we know about attitudes is also suspect because the findings are saturated with the inherent risks of self-report information. One swallow does not make a summer; nor do two "strongly agrees," one "disagree," and an "I don't know" make an attitude or a social value (Webb, Campbell, Schwartz and Sechrest, 1966, p. 172).

E. Mentalistic Conceptions of Attitude. Unfortunately, reliance on verbal self-reports about internal mental processes as well as about overt nonverbal behavior is not simply the accidental by-product of a methodological tactic. It rests on a conception of the behavioral dynamics of human actors borrowed largely, and in oversimple fashion, from cognitive social psychology. Besides the premise of methodological individualism, political behavioralism also generally accepts the Weberian conception of behavior and action according to which the understanding of human behavior, as distinguished from the understanding of behavior of nonhuman animals or inanimate objects, requires the intellectual method which Max Weber called *verstehen* (Weber, 1947). That is, to understand any human action one must know its "meaning" to the actor, i.e., the actor's reasons, rationale, motivations, and cognitive picture of the situation.

But judging from their research, political behavioralists have implicitly added a corollary assumption which is not necessarily part of Weber's viewpoint, that *only* actions which are "meaningful" in this sense are involved in social and political life. *Every* politically relevant action (or failure to act) is assumed to grow out of (be caused by) some self-conscious intellectual act (cognition, emotion, desire, belief, and so on). At the same time it is taken for granted that the individual person is consciously aware of inner mental processes and can directly report on them on suitable occasions. The inner (causal) attitude is by definition isomorphic with the action it effects. The relationship between the verbalization of that inner attitude and the "objective" attitude itself can be assumed to be one-to-one, provided questions are not ambiguously phrased and interviewers are alert to respondents' deliberate attempts to misinform or mislead. And therefore, assuming such care is taken, we can confidently expect the relationship between self-reported attitudes and resulting behavior (or, as is often the case, self-report of that) to be equally isomorphic.

This is, of course, a grossly oversimplified sketch of the situation. The frequent incorporation of Freudian concepts–libidinous drives, superego suppression of ego urges, displaced hostilities, and so on–drastically modifies the picture, but not so much as might first appear. Freudian entities are just as "mentalistic" or unobservable empirically as more surface-level rational opinions and beliefs. Just as psychoanalysts analyze verbal expressions to infer inner feelings, social scientists administer multiple-item scales and subject them to increasingly sophisticated statistical analysis, such as latent structure analysis and multi-dimensional scaling, to elicit verbal responses and infer innermost attitudes, many of them (like authoritarianism, for example) closely related to the province of psychoanalysis. Both procedures assume that a verbal account is faithful to an empirically inaccessible mental state, if correctly interpreted.

Despite rigorous empiricism and methodological individualism, then, and despite minor variations in the particular version of the model

(footnote 4, continued)

Data Sets Used	Number of Articles Using Data for: Original Analysis	Secondary Analysis
Political Values Study	0	2
Nine-nation Political Elites Study	0	1
Opinion Research Corporation Polls	0	1
AIPO Polls	0	4
NORC Polls	0	4
Great Britain SSRC Polls	0	1
California Polls	0	1
Japan Polls	0	1
Miscellaneous others	52[a]	0
Totals	59[a]	65

Source: American Political Science Review 62–71 (1968–1977).

[a]Two surveys used in two articles each; one survey used in four articles. Total number of surveys used in original analyses other than SRC/CPS and Jennings-Niemi SRC/CPS High School Seniors and Parents Study is therefore 48. Total including these is 55.

Table 6. Research Method (Data Base) in 180 *Review* Articles on Political Behavior

Research Method, Data	Number of Analyses											
		Mass (Undifferentiated Individuals' Behavior)										
					Opinions, Attitudes, Beliefs							
	Individual Behavior (General)	Political Socialization	Politicization, Apathy, Alienation	Civic Obedience Political Support	Opinion, Belief (General)	Ideology	Issue Opinions, Preferences	Other Opinions, Attitudes	Total, Opinions, Attitudes	Voting Behavior	Unconventional Behavior	Total Mass Behavior
1. Experiment	0	0	0	0	(–)	(–)	(–)	(–)	0	3	0	3
2. Experiment + Survey (Secondary)	0	0	0	0	(–)	(–)	(–)	(–)	0	1	0	1
3. Survey: Original Data	0	11	8	9	(–)	(1)	(1)	(3)	5	10	0	43
4. Survey (Orig.) + Roll-Call Data	0	0	0	0	(–)	(–)	(–)	(–)	0	1	0	1
5. Survey (Orig.) + Agg./Doc. Data	0	0	0	0	(–)	(–)	(–)	(–)	0	1	0	1
6. Survey, Secondary: SRC/CPS	0	1	3	5	(1)	(–)	(–)	(–)	1	20	0	30
7. Survey, Secondary: Other	0	1	6	3	(1)	(2)	(4)	(1)	8	0	1	19
8. Survey (Secondary) + Roll-Call	0	0	0	0	(–)	(–)	(–)	(–)	0	5	0	5
9. Survey (Secondary) + Agg./Doc.	0	0	0	0	(–)	(–)	(–)	(–)	0	5	0	5
10. Roll-call Analysis	0	0	0	0	(–)	(–)	(–)	(–)	0	0	0	0
11. Aggregate, Documentary, Other Data	0	0	0	1	(–)	(–)	(–)	(–)	0	14	0	15
12. Non-research, Conceptual, Synthetic, etc.	3	1	1	0	(3)	(–)	(–)	(2)	5	0	1	8
Totals	3	14	18	18	(5)	(3)	(5)	(6)	19	60	2	131

Table 6. (continued)

Research Method, Data	Number of Analyses: Political Elites Behavior: General, Leadership	Institutional Offices or Roles: Legislative	Exec., Admin.	Judicial	Polit. Party Leaders	Total, Inst'l. Offices	Total Elite Behavior	Method-ology	Totals
1. Experiment	0	(–)	(–)	(–)	(–)	0	0	0	3
2. Experiment + Survey	0	(–)	(–)	(–)	(–)	0	0	0	1
3. Survey: Original data	7	(8)	(2)	(–)	(5)	15	22	0	65
4. Survey (Orig.) + Roll-call Data	0	(–)	(–)	(–)	(–)	0	0	0	1
5. Survey (Orig.) + Agg./Doc. Data	0	(–)	(–)	(–)	(–)	0	0	0	1
6. Survey, Secondary: SRC/CPS	0	(–)	(–)	(–)	(1)	1	1	1	32
7. Survey, Secondary: Other	0	(–)	(–)	(–)	(–)	0	0	0	19
8. Survey (Secondary) + Roll-call	0	(2)	(–)	(–)	(–)	2	2	0	7
9. Survey (Secondary) + Agg./Doc.	0	(–)	(–)	(–)	(–)	0	0	0	5
10. Roll-call Analysis	0	(11)	(–)	(4)	(–)	15	15	0	15
11. Aggregate, Documentary, Other Data	0	(2)	(4)	(1)	(4)	11	11	1	27
12. Non-research, Conceptual, Synthetic, etc.	0	(–)	(–)	(–)	(–)	0	0	0	11
Totals	7	(23)	(6)	(5)	(10)	44	51	2	187[a]

Source: American Political Science Review 62–71 (1968–1977).

[a]Number exceeds number of articles (180) since some articles deal with more than one topic.

they use, political behavioralists still work from a dualistic, half-empirical half-metaphysical conception of the human individual, in which the body is governed by inner mental impulses which lead to chosen destinations and goals. "Explanation" of overt political actions, thus envisaged, primarily entails reading the mind to discover action-shaping political attitudes and thoughts. Inadvertently, political behavior research has thus become steadily more preoccupied with explaining the variance in attitudinal dependent variables and has progressively lost sight of the more genuinely behavioral variations which constitute the material essence of politics and government.

Even though the basic concept, "attitude," is ordinarily conceived as a "predisposition" to respond uniformly to a broad range of different stimuli or questions (Campbell, 1963), the level of abstraction of attitudinal variables in research is frequently not much higher than that of the behavioral variables they purport to explain. Voting choices, for example, are explained by candidate image or evaluation, by attitudes towards the candidates' party labels, and so on. Attitudes of political support or nonsupport are expected to explain obedient, rebellious, or subversive activity. Indeed, a former president of the American Association for Public Opinion Research has recently suggested that "what has been found wanting [in explanation of behavior by attitudes] is the way so much attitude research has been conducted with . . . reliance on attitude scales of an *unwarranted high order of generality and abstraction*" (Crespi, 1977, p. 294, emphasis added).

It is no new discovery that the correlation between attitudes and predicted behaviors, even at the lowest levels of abstraction, has ranged in actual research results from negligible to nil. As early as 1934 a classic study by LaPiere reported that the prejudiced attitudes self-reported by several hundred or so innkeepers and restauranteurs were almost invariably contradicted by their seemingly unprejudiced overt behavior towards oriental patrons (LaPiere, 1934). Related problems at a wholly attitudinal level were extensively discussed by Philip Converse in a series of works arguing that many of the issue-opinion and ideological attitudes reported in survey research on American voting behavior were essentially "non-attitudes," in that intercorrelation or "constraint" among particular components of the alleged ideological orientations was too low to predict one from another of them in about 80 percent of the cases (Converse, 1964a, 1964b, 1970). Perhaps the most striking evidence of the inadequacy of attitudes as ordinarily conceived to explain behavior is the still largely neglected study by Stanley Milgram which sought to explain obedience to authoritative directives by asking subjects in an experiment to administer what they believed to be lethal dosages of electric shock to supposed other subjects. Their observed behavior ran spectacularly contrary to norms and attitudes which not only they themselves but also psychiatrists and other observers believed would control their behavior (Milgram, 1974).

Such evidence and such occasional expressions of skeptical concern have had little effect on political behavior research, however. To be sure, Converse's discussion of "non-attitudes" generated a flurry of concern over the nature of opinions on political issues, but the response as often as not has been not more careful investigation of the attitude-behavior relationship but further preoccupation with and reification of the "attitudes" which Converse has called into question (Pierce and Rose, 1974). But beyond that, one finds only the barest recognition of the problem on only the rarest occasions. Only one of the articles in the sample of 180 *Review* articles (Sullivan and O'Connor, 1972) explicitly recognized it as a general problem, going so far as to refer readers to one of the more important works on the subject (Wicker, 1969).

F. Summary. In sum, in spite of the technical and methodological expertise found in individual projects of political behavior research, collectively they exhibit two serious conceptual shortcomings which severely hamper their capacity to obtain theoretically (or practically) significant results. First, they are not anchored in macro-level political theory. That is, research on political behavior is not oriented by an awareness of fundamental questions about the polity or its citizens, nor does it link up findings about individual behavior to any such concerns, whatever the original motivation for the research. Second, they rely on a deficient general behavioral theory, on what earlier political philosophers would call a flawed conception of human nature and modern biobehavioral scientists would call an inadequate and erroneous model of the functioning individual human organism. In both respects, although in different senses, the condition of political behavior research can be accurately described as "pre-behavioral."

III

Remedying these deficiencies calls for more than a little additional random borrowing of a

few more terms and ideas from a few more behavioral sciences besides social psychology. It requires surmounting our "biobehavioral illiteracy."[5] That is, it calls for learning in some detail the knowledge about human behavior offered by the "hard science" behavioral disciplines as well as that offered by the "softer" brands of psychology. It is worth emphasizing that what these disciplines have to offer is *knowledge* about human behavior, findings about how the human organism works as valid and reliable as other natural science knowledge about other phenomena. Political scientists ignore that knowledge at their peril; they rest their work on flimsier, less scientific and untestable pseudo-theories and models of human behavior at the risk of talking utter nonsense about political behavior. The people whom political scientists study are, after all, no more exempt from the laws of behavioral dynamics than from the laws of gravity.

The desired relationship between political science and the biobehavioral sciences is analogous to the relationship between astronomy on the one hand and physics and chemistry on the other. Astronomers know that all the relevant laws of physics and chemistry apply to all celestial phenomena just as they do to other physical phenomena. Astronomers do not look to the more basic sciences for suggestive analogies or novel conceptions to titillate their imaginations into creating novel, ad hoc hypotheses and theories uniquely applicable to planets, stars, and galaxies. They look for established principles about the behavior of all matter from which they can logically deduce hypotheses about heavenly bodies in particular. And they also take care in their work to see that none of their assumptions, postulates, or hypotheses, from wherever derived, contradict such basic principles. In the same way, the biobehavioral sciences must be recognized as "basic" to the study of political behavior, and what they tell us about the mechanisms and principles governing human behavior must guide our hypothesizing and theorizing about political behavior.

We cannot spell out here how political scientists might go about applying basic biobehavioral knowledge in their research. But we may get some rough ideas by glancing at some of the tentative steps already being taken in this direction. One is what is commonly called "biopolitics"; the other is the application of psychophysiological and psychophysical concepts and methods to the study of political attitudes now going on primarily in the Laboratory for Behavioral Research in the Department of Political Science at Stony Brook.

Insofar as the term "biopolitics" connotes a special, esoteric subfield of study, it is an unfortunate misnomer. "Biopolitics" is better seen as providing a perspective applicable to the entire field, attempting to view human social and political affairs in the light of Darwinian evolutionary biology. Most writers on "biopolitical" subjects, however, draw more heavily on modern ethology than on evolutionary biology per se.[6]

Although *homo sapiens sapiens* is one of the animal species least studied by ethologists, what they have learned about other species applies to human beings also. Especially important is the principle stated by Konrad Lorenz (1965) in a discussion of Darwin's work:

> ... Darwin was fully aware of a fact which, though simple in itself, is so fundamental to biological behavior study that its rediscovery ... is rightly considered the starting point of ethology.
>
> This fact, which is still ignored by many psychologists, is quite simply that *behavior patterns are just as conservatively and reliably characteristic of species as are the forms* of bones, teeth, or any other bodily *structures*. ... That *behavior patterns have an evolution exactly like that of organs* is a fact which entails the recognition of another: that they also have the same sort of heredity (pp. xii–xiii, emphasis added).

Most of us are aware of many examples of the kind of species-characteristic, "pre-programmed" behavior patterns which the ethologists have in mind: the stylized nest-building of Baltimore orioles, the courtship dances of bower birds, the ritualized mate-seeking and domicile-building of beavers, submissive groveling and baring of the throat by dogs or wolves toward their more dominant conspecifics, to name but a few.

[5]The term is paraphrased from Albert Somit's comments on several occasions lamenting our "biological illiteracy."

[6]The first political science usage of the term was in the title of an article by Lynton K. Caldwell (1964), but the word became familiar only after publication of Thomas Landon Thorson's book of that title (1970). As W. J. M. Mackenzie has noted, the word was actually coined earlier by Morley Roberts (1938), in an organic corporate analogy of the body politic to a biological organism, and then "independently reinvented" later (Mackenzie, 1975, p. 297n). A bibliography of the literature of biopolitics is provided by Peterson (1976) and Somit (1976, pp. 279–330).

Social scientists, however, except for those few identified with "biopolitics," shy away from this principle, refusing to admit its applicability to human behavior. As Niko Tinbergen, the Nobel Prize-winning ethologist observed, criticizing "the almost universal misconception that the causes of man's behavior are qualitatively different from the causes of animal behavior,"

> somehow it is [falsely] assumed that only the lowest building-stones of behavior, such as impulse flow in peripheral nerves, or simple reflexes, can be studied with neurophysiological or, in general, objective methods, while behavior as an integrated expression of man as a whole is the subject matter of psychology. Somehow it is assumed that when, in investigating behavior, one climbs higher and higher in the hierarchical structure, ascending from reflexes or automatisms to locomotion, from there to the higher level of consummatory acts, and to still higher levels, one will meet a kind of barrier bearing the sign, "Not open to objective study; for psychologists only" (Tinbergen, 1969, p. 205).

The reason most commonly offered by social scientists for rejecting this important principle is that the human being is a cultural and not an "instinctual" animal. But this argument dodges the main issue. In the words of Rene DuBos (1968, pp. 40, 68):

> Culture is an expression of man's response to the physical and human environment. These responses take the form of behavioral patterns and emotional relationships as well as the development of utilitarian objects. . . .
>
> Considered broadly, evolution always involves learning from experience. The learning may take place by storage of genetic information by chromosomes, by accumulation of knowledge and skills in the individual organism, or by transmission of practices and wisdom in institutions or in society as a whole.

Political scientists need not argue dogmatically about which patterns of human behavior are uniquely "genetic" and which are uniquely "cultural." They need simply to recognize the inseparable interdependence of both, and to distinguish those cases where people are behaving in ways characteristic of all human organisms acting in similar circumstances from cases in which their behavior is better described as distinctively individual responses, i.e., behavior different from what might be observed or expected of other individuals responding to similar stimuli in similar circumstances. Instead of arguing about learning or inheritance, nature or nurture, genetics or culture, political scientists can more profitably observe political phenomena carefully, identify and describe accurately whatever widespread patterns of behavior they detect, and ask to what extent those patterns embody the kind of species-characteristic, pre-programmed behavior studied by ethologists. In other words, the investigator of political behavior should apply ethological principles first as working hypotheses about fundamental behavioral mechanics, as directives for future research. Ethology is a source of *questions* to be asked, not answers to questions political scientists have not yet formulated, let alone asked. To demand to know, "What great and illuminating truth about mankind follow[s] from our realization of his having evolved?" is, as Sir Peter Medawar (1976) has said, to put the question wrongly:

> It is, indeed, not a grand ethological revelation that the scientist should seek from his awareness of the evolutionary process, but rather an enlargement of the understanding made possible by a new or wider angle of vision, a clue here and an apt analogy there, and a general sense of the evolutionary depth in contexts in which it might otherwise be lacking (pp. 497–98).

As illustration, consider one of the most striking but least examined sets of political behavior phenomena which does suggest the working of the pre-programmed behaviors studied by ethologists: the ubiquity of warfare in human history. First, from an ethological perspective, one must conclude that war is statistically "normal," in that at any given time there is either the actuality or probability of war somewhere in the world. Second, very little of the lethal and violent behavior manifested by those participating in the complex social and political-action pattern we call war is explainable as the result of some "instinct of aggression" peculiar to the individual war-makers, or even of some aggressive urge "pre-programmed" into all people. On the contrary, the evidence is overwhelming that

> the human attributes that underlie organized group violence probably have very little to do with the capacity to get angry at someone. Instead, paradoxically, war depends on the *cooperative, group-bonding, authority-accepting* aspect of human nature. Consequently it is likely that group aggression has very different motivational bases than individual-versus-individual fighting, although the two may overlap in some situations (Alcock, 1978, pp. 24–25).

Several more directly political working hypotheses are suggested by this capsule account. One concerns the nature of the groups at war. To oversimplify, apparently the phenomenon we call war is by definition distinguished

from all other forms of violent intergroup human conflict by being a contest between "polities," or "political communities." Such communities (which resemble what some ethologists have called "pseudo-societies," in that they tend to become semi-discrete breeding populations) are distinguished in terms of differences between members' conflict behavior. Within polities, ultimate violence between persons or groups is suppressed or severely inhibited. Against "outsiders," however, not only is it tolerated; during interpolity conflicts it is encouraged, rewarded, and often required. Inconsistent as this may appear ethically or rationally, it appears to be utterly consistent biologically.

Moreover, organization of human life through division into such political communities has apparently always been the universal rule. Although much fruitful research could be done on the relationship of political bonding to other ties, such as individual ties to family, party, and work-group, political bonding seems in some respects fundamental and central to all the others. Although individuals can subsist outside a family, a club, or any limited human group, a single person subsisting normally outside of any polity is almost unknown. This bears out the earliest known ethological working hypothesis expressed in classic form by Aristotle: "Man is a political animal."[7]

Just as the pre-programmed behaviors which constitute membership in *some* polity underlie war, they also underlie government, and in particular the relationship of the polity's members to the persons and symbols which constitute their government. Political order within the community rests not on the members' pre-programmed membership alone, however, but on similarly pre-programmed "authority-accepting behaviors" as well (Alcock, 1978, pp. 24–25). This is to say, as indeed Fred Willhoite (1972) has well said, that

> man's biological nature incorporates propensities to establish and sustain dominance-deference hierarchies within his social groupings, that is, that stratification of political authority, power, and influence may be *by nature* intrinsic to human social existence (p. 1110).

Systematic social science offers no better evidence of the enormous power of these pre-programmed "authority-accepting behaviors" to shape individual action in everyday life than the behavior of subjects in Milgram's study of obedience cited earlier. Varied though the mode of their compliance may have been, *all* of Milgram's subjects manifested authority-accepting behavior, clearly justifying the working hypothesis that their behavior was shaped and determined to an important degree by some sort of "pre-programming."

Though this excursion into the implications of evolutionary biology and ethology has been sketchy, it should show that the utility of these biobehavioral sciences lies first in their forcefully directing the attention of political researchers back to broad and fundamental problems, most of which have been central concerns of traditional political philosophy and of political science in earlier times. The biobehavioral perspective views political phenomena from the standpoint of the entire human species, in the context of its evolutionary history. It thus provides the only justifiable baseline for comparing variations in the behavior of various human groups. Second, it clearly forces us to reexamine our two-dimensional, oversimplified, supercognitive, social-psychological model of the acting human individual. It makes us take into account important uniformities in all human behavior so far ignored by political behavior research.

But application of these particular biobehavioral sciences alone is not enough. *Variations* in political behavior require explanation at least as urgently as basic uniformities. Ethology and evolutionary biology tell us little about the internal mechanisms underlying both the uniformities and the variations. Ethologists, for example, speak of "key stimuli" which can "trigger" "innate releasing mechanisms," which in turn effect complex patterns of pre-programmed behavior. And, to be sure, ethological research provides numerous well-documented generalizations about observed sequences of key stimuli and resulting behaviors. Unfortunately, such concepts as "innate releasing mechanisms" are identified with no identifiable physiological processes or anatomical structures within the organism. They are concepts no less insubstantial and ghostly than the social psychologists' attitudes, despite having a material-sounding name and an explicitly non-*mental* definition.

[7]The fact that Aristotle considered the *polis* the "natural" form of human polity in a teleological sense, and that a great deal of his writing is devoted to normative implications of an ethical premise, should not obscure the fact that he recognized that other forms of polity besides the *polis* also did occur "naturally" in the empirical sense of the word. Aristotle was thus not only the first political scientist, but, indeed, the first *bio*political scientist.

IV

How other biobehavioral sciences come into play can be illustrated by further examination of the problems of maintaining the polity and obedience to political authorities. The problems have, of course, been dealt with by political science in various ways. There is a respectable body of literature on political obligation, but most of it concerns ethical problems of compliance or resistance. It sheds little light on the relationship of observed compliance behavior to proposed ethical guidelines. In political philosophy and in the general field of comparative politics there are some discussions of "legitimacy," both as a normative and as an empirical concept, but there is little systematic research on it.

Most empirical research literature, virtually all of it considered "behavioral," concerns "political support." This literature displays virtually all the conceptual and theoretical characteristics we have been describing. Resting on an almost exclusively "attitudinal" conception of human behavior, all the key variables, such as political trust, political alienation, political efficacy, and so on, are invariably conceived as broad mental images which can be verbalized. Data are collected by surveys and attitudes are measured by usually simple instruments and scales constructed from questions of the familiar survey type:

> (Do you agree or disagree), I don't think public officials care much what people like me think.
>
> Do you think that people in the government waste a lot of the money we pay in taxes, waste some of it, or don't waste very much of it?
>
> Do you think that quite a few of the people running the government are a little crooked, not very many are, or do you think hardly any of them are crooked at all?

And so on.

Not only the key variables defining political support, but also those investigated as dependent upon it are often attitudinal in character. "Attraction to radical rightist policies and programs," "negativism toward all things political," alleged to be the most common consequences of declining political support (Wright, 1976, pp. 77–87), are clearly such. Other dependent variables which appear at first glance to be direct behavioral reflections of these, such as abandonment of democratic procedures ("taking to the streets") or voting for rightist candidates, are almost always measured by self-reports about willingness to engage in or past engagement in such action, as are such variables as participating in riots or violent and aggressive behavior against police and others. The only behavioral correlate of the relevant attitudes indexed by reference to actual behavior instead of self-report is the decline in voting participation among those found to be politically alienated, but even that is just as commonly indexed by survey responses as by genuine behavioral data (Wright, 1976, pp. 251 ff.).

It seems clear that, unless there is some link between the basic political support attitudes in question and the genuine behavior variables of real interest to political science, research on the subject is likely to be uninteresting or trivial. The most extensive review of that research to date, finding no such link, seriously questions its value (Wright, 1976). The conclusion to be drawn with respect to further research is not that we have found out little because we have been examining the wrong attitudes, and that we should therefore look for others which will more reliably explain riots, rebellions, etc., but that we should abandon the notion that verbal self-reports about attitude items are isomorphic surrogates for supportive or non-supportive attitudes, and that all "overt behavior" is "caused" by such conscious attitudes, and should stop using verbal self-reports as dependent variables. To understand obedience to or rebellion against political authority requires taking a more realistic look at such behavior.

The Milgram experiments again offer a suggestive clue for doing this. In those experiments, researchers gathered not only question-and-answer data before, during, and after the experiment, but also some less systematic data about verbal and nonverbal behavior exhibited by subjects while complying with commands to "increase the shock level" they thought they were administering—exclamations, gasps, groans, intense perspiration, nervous or hysterical laughter, tensing, writhing, and so on. These data suggest as much about the internal state of the subject as verbal answers to questions. For verbal behavior *is* essentially *overt* behavior, and should be so studied. The fact that words can be used to express ideas does not exempt the physiology of speech mechanisms from responding to unconscious impulses. Whether a speaker is talking sense, nonsense, or turkey, physiological evidence of internal reactions, as measured by psychophysiological recording techniques, is often a better indicator of attitudes or emotional state than the overt meaning of words, and therefore, in an important sense, of the "meaning" of situations and stimuli. Viewing Milgram's subjects in this light makes it clear why it is necessary, as a leading psycho-

physiologist has recently urged,

> that we conceive of the human organism engaged in [the complex regulation of multiple psychophysiological processes] as being a symphony of biological organs that are orchestrated and conducted by the brain (Schwartz, 1978, p. xii).

Reactions to stimuli (such as Milgram's experimental commands), thoughts, feelings, verbalizations about the situation, memories of other situations, habitual responses to certain cues—all are embedded in a manifold of continually ongoing neural, hormonal, and other physiological activity. Human beings do not live and move simply and solely by motor responses to orders from the central nervous system, issued in response to cognitive and affective ideation. Simultaneous with any such activity there is always occurring integrally related activity of the autonomic nervous system and the glandular, hormonal, and other systems innervated by it. Much of the organism's emotional state and its physical readiness to do or not do certain acts (e.g., "fight or flight"), are the direct expression of the state of this neurophysiological system. Although the functioning of this system is not accessible to conscious introspective examination, save in its grossest aspects, the evidence of its working is observable in such psychophysiological activity as sweating of the palms, release of adrenalin into the blood stream, rise or fall in heart rate, increase or decrease in blood pressure, slower or more rapid respiration, and many others.

By observing psychophysiological responses in different situations and to different stimuli, and by observing other behavior of the individual at the same time, including verbal behavior in interview situations, psychophysiologists can tell us much more about the internal state of a person than answers to the usual survey-type questions can tell us. Research being done by Milton Lodge, Bernard Tursky, Joseph Tanenhaus and others at Stony Brook moves in this direction. In one study, for example, using classical conditioning techniques familiar in behavioral psychology, they conditioned half the subjects to react to stimuli connoting "white race" to them and half to react to stimuli connoting "black race." They then measured various physiological responses (heart rate, galvanic skin response, etc.) to ambiguous verbal and visual stimuli conceived of as political stimuli, judging from the subjects' response (or lack of it) the extent to which each perceived the stimulus as a racial one. Such studies promise to reveal more about the various political "meanings" of such symbols than the subjects' reports of their thoughts about them. For example, the overt (though internal) physiological response to the stimulus word "busing" by a subject who has been conditioned to respond to any stimulus perceived as having a racial connotation tells us more about probable overt motor behavior in a race riot than merely verbal answers to questions (Tursky et al., 1976; Wahlke and Lodge, 1972).

Stony Brook political scientists are also producing psychophysical tools which, on technical and statistical grounds, will give us far more reliable data about the verbal behavior of interview respondents and therefore a more sophisticated grasp of the possible mental-process correlates of verbal behavior. Put simply, the psychophysical scales produced by multimodal methods (i.e., methods using other modalities of response besides verbal, such as sound production, magnitude estimation, or line production) have the statistical properties not of simple categoric (nominal) or ordinal-level scales which is all that prevailing techniques permit, but of interval and ratio scales which will eventually permit cross-individual and cross-cultural comparisons of measurements made by them (Lodge et al., 1975, 1976).

Psychophysiological and psychophysical research is thus beginning to explain some variations in individual behavior and to enhance our understanding of the nature and function of verbal behavior, both in actual politics and in survey research. This work may seem far removed from the concerns of ethologists and evolutionary biologists; however, these two kinds of work and the different biobehavioral sciences on which they draw are not alternative approaches. They are equally valid, mutually supporting elements in a body of science which is producing a growing and interrelated body of general propositions about human behavior.

V

I will conclude not by attempting to summarize the already compressed discussion but by restating an important point: I have not been proclaiming new knowledge about political behavior but urging renewed attention to the task of acquiring some. I do not call for establishing a new discipline or converting political scientists to new faiths, but I do wish to call attention to a mounting set of facts of life established in a wide range of biobehavioral sciences, facts which have been not merely neglected in all but recklessly contradicted in some political behavior research.

Although I have been critical of political behavioralists, I would emphasize that I think

the basic premises and objectives of political behavioralism are correct. Indeed, I think the only way to move political research beyond its current pre-behavioral state is to make it much more genuinely behavioral. This is not to say that political science must become "sociobiology," or that "biopolitics" is the embodiment of truth about political behavior. On the contrary, only genuine behavioral political scientists will be able eventually to answer the questions which are the real concern of political science.

But being a genuinely behavioral political scientist requires substantial mastery of at least the rudiments of a formidable array of biobehavioral disciplines. Moroever, in addition to being biobehaviorally literate, political scientists must also have the wisdom, insight and imagination of the best traditional political scientists plus the methodological skills of the best political behavioralists. Biobehavioral science may help political science move out of its pre-behavioral stage, but it does not make being a competent political scientist easier.

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