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**INSTITUTE OF PUBLIC POLICY & ADMINISTRATION
UNIVERSITY OF CALABAR, CALABAR, NIGERIA.**

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THE DYNAMICS OF POLITICAL SCIENCE RESEARCH

BY
PATRICK AGBOR ASSIBONG

Abstract

Although the study of Political Science Research is fraught with byzantine complexities, the need to devise procedures that will guarantee the probable scientific accuracy of research answers remain a "sine qua non" for all researchers. The paper which is a descriptive exposition opines that the researcher should avoid selecting apolitical topics, state: the research problematic clearly, the methods used to solve the problematic including definition of concepts, theoretical framework, hypothesis formulation, data generation, collation, presentation, interpretation and the results of the research. On the contentious issue of literature review, the paper advised researchers not to replicate other scholars' works but to identify themes, concerns, unresolved issues and unexplained terrain as well as recognized implications of findings for both theory and practice.

Researchers were reminded that their work rests on previous studies hence theirs provide but a starting point for further research. The treatise re-emphasized or revisited strunk and white's 1959 antidote for a good thesis which include the need for brevity, clarity and simplicity. A fourth trajectory was added - accuracy.

*In sum, the paper suggests that accuracy is important in reporting our findings because examiners are often bored wading through superfluous, serpentine, unclear, and pompous sentences couched in very bad English. **International Journal of Social Science and Public Policy**, 1998:1(2) pp 12-29*

Introduction

Despite the fact that some political scientists are of the opinion that the craft of political science research raises many intricate questions as it answers, there is however conscious efforts to devise procedures that will guarantee the probable empirical accuracy of research findings. We may ask why the political scientists would like to know the antics of the scientific research process.

Patrick A. Assibong is a lecturer in the Department of Political Science, University of Calabar.

A sound knowledge of political science or of any of its sub disciplines of Political Economy, International Relations, Foreign Policy Management, Public Administration and Research Methodology to mention but a few, prepares the student for careers in government, industry, parastatals, the foreign service, international organizations and other related careers in research and teaching hence research techniques must be studied since they "... are the tools of the trade" (Sellitz, *et al.*, 1976: p. 11). The political scientist does not only need to improve his ability in utilizing these acquired skills but he also has to assimilate the dialectics behind them. As scholars in the making, the student, while in the final year and even beyond, is usually confronted with the need to evaluate, analyze and use research results for the benefit of mankind and even for the growth of knowledge because "... knowledge must grow from more to more and thus be human life enriched", (Britanica, 1973: p. ii).

Furthermore, we shall be constantly faced with situations to judge whether we can have confidence on a particular research finding and whether if replicated, the results would be the same or different. If the results are different, new theories replace the old or moribund theories in the best perspective of the Kuhnian tradition of falsification.

In presenting "The theoretical and empirical bases of social science research" as it relates to Political Science, the paper would focus on the problem to be investigated, the methods used to solve the problematique, the results of the research and the scientific conclusions derived from the results.

Cave the dragon: It is not the job of the student to try to convince the examiner of the virtue of the research but rather it is right to report any finding as "... expeditiously and clearly as possible, what was done, why it was done, the outcome of the doing, and the investigator's conclusions" (Kerlinger, 1973: p. 694).

To avoid these pitfalls of "overadvocacy" and "holier than thou" or "priesthood", snares among political scientists and other social engineers in Political Sociology, Economics and the Management Sciences, Campbell (1971) has this to say:

... the more passive role ... as an aid in helping society decide whether or not its innovations have achieved desired goals without damaging side effects. The job of the methodologist for the experimenting society is not to say what is to be done, but rather to say what has been done. The aspect of social science, that is being applied is primarily its research methodology rather than its descriptive theory, with the goal of learning more than we do now from the innovations decided upon by the political process (p.8).
Emphasis Mine!

Viewed from the above perspective, political science research can be consummated scientifically despite the fact that it has not yet achieved the required knowledge for reliability in terms of the content of policy.

Usually, a report on completed research in Political Science even in the American Political Science Review (APSR) assumes with little or sometimes no modifications the subsequent model.

- i) A concise statement of purpose is presented in the form of formulating the problem.
- ii) The structure which includes the presentation of definitions, hypotheses, a critique of relevant previous research.
- iii) The methodology: Data collection which includes sample and sampling method, how hypotheses were tested, experimental procedures, instrumentation, measurement of variables, methods of data analysis using statistics, pretesting and pilot studies, etc.
- iv) Results interpretation, recapitulation and conclusions.

It is important to note here that the research process may not follow the above format hook-line and sinker because (Hammond, 1964) asserted that the research process may almost never follow the neat sequential pattern of activities suggested by most scholars in the organization of research writing because the process sometimes involves many additional activities which are rarely mentioned in published studies like the budget, sources of finance, personnel to be used and institutional backing.

The first part deals with the dynamics of selecting topics related to Political Science and formulating the research problem, the second describes the structure which includes the presentation of definitions, hypotheses and how to present a critique of the extant and current literature in the field. The third part treats the methodological aspects involved which span from data collection, sampling method, hypotheses testing, data instrumentation to the idea of pretesting and pilot studies.

The fourth considers how results are presented, interpreted, recapitulations presented and how conclusions are reached.

The fifth section is the summary and conclusion of the paper.

1. TOPIC SELECTION AND THE FORMULATION OF RESEARCH PROBLEM

The first and most difficult stage in doing political science research is undisputably how to select or choose an important, interesting and researchable topic and state the research problematic. In a related study by Shively, this difficulty was confirmed when he asserted that "How to choose an interesting problem is one of the most difficult and challenging parts of empirical research" (Shively, 1974: p. 11).

In selecting a topic, the intending researcher must have a good knowledge of the two main dimensions in Political Science Research namely:

- (i) Applied Political Science Research which includes normative political philosophy (non-Empirical) and engineering research (Empirical) and
- (ii) Recreational Political Science Research which embodies "formal" theory which is non-empirical and theory-oriented research which is empirical. Hence Political Science research can be distinguished by the uses for which the researcher designed it - Applied Research - and secondly by the extent the research fellow seeks to provide new factual information to our understanding of the political phenomena - Recreational, Empirical and Theory-Oriented research.

Scholars of modern politics in the '90s hardly concern themselves with "normative political philosophy" whose arguments are limited to "what should be" in political science because sages like Aristotle, Plato and Marx had overflogged the field or over bombarded "the headquarters" (Toyo, 1983: p. 157) neither is "engineering research" (though empirical) having any henchmen in academic Political Science. Today, Political Engineering is rarely taught in most universities because separate schools or departments have evolved to cater for the interest of those interested in the physical or natural sciences.

The other side of Applied Research is Recreational Research which has formal theory and theory-oriented research as adjuncts. Formal theorists are interested in positing certain facts about Political Science and using these facts or assumptions to build theories from them. In other words, formal theorists interact with research and are not interested in the presentation of new and factual information.

Theory-oriented research is now the centre-piece of much research and lecturing in universities. Like political engineering, it is scientific and preoccupied with discovering new and actual facts about politics. It is concerned with increasing our knowledge of what happens and why things happen the way they do in politics.

Despite the fact that engineering research and theory-oriented research are both empirical, the intending researcher in politics has to keep in the back of his mind the fact that he would be engaged in "theory-oriented" research before selecting a research topic which is often value-laden.

The topic selected must be in any of the "twelve sub-disciplines" (Rodee, *et al.* 1976: pp. 5-11) of political science otherwise, the project supervisor would identify the apolitical nature of the topic and reject it as it has been the case in some departments over the years. A topic like the "Historical Development of Political Parties in Nigeria" for example is as apolitical as it is vague. Apart from not being researchable, it is not interesting neither is it important or even current. Other topics

which may be political but not researchable are "The Contribution of the Less Developed Countries (LDCs) in the Decision Making Machinery of UNESCO" and "The Politico-Economic Background of Nigerian Councillors in the 1998 elections".

Any researcher who selects the "UNESCO" topic must be prepared to visit the UNESCO Headquarters in Paris, France and Observe the LDCs take decisions via say voting during a UNESCO Session. Since this is virtually impossible due to financial constraints, the topic falls squarely under the "Not Researchable". Similarly, the research fellow needs much money, time and materials to travel via the length and breadth of Nigeria to gather data before writing the project on Nigerian Councillors.

To make the first topic researchable, one can restructure it as follows: The Contribution of Cross Riverians in the Decision Making Machinery of UNESCO in Cross River State. A new topic could be developed thus: The Politico-Economic Impact of UNSECO projects in Cross River State et cetera. The sharper the focus of the topic selected and the narrower the terrain, the better for the researcher.

Research topics like "The Problems of Management in Community Banks in Calabar Municipality", while being properly focussed is not in the domain of modern political science but falls squarely under banking and finance in the management science. Some students may argue that since political scientists also study the taxonomy and pathology of public finance, the above topic also concerns the political scientist. What the intending researcher must know is that political science is one of the disciplines in social sciences hence all disciplines are inter-disciplinary.

However, the political scientist should try as much as possible to restrict research to typical political science topics like "The Political Economy of Industrialization in Cross River State 1987 - 1998: state, class and finance capital" and allow other students to write about what concerns them in other disciplines.

Lastly, the intending researcher must select a new topic i.e. a topic which no other students or researcher had written about or decide to falsify or pick loopholes on what had been already researched upon. In other words, the student is allowed to restate and analyse unresolved issues. Most scholars are however interested to break new grounds by researching on "virgin topics" so as to contribute their quota to the existing pool of political literature.

Apart from our values and the social conditions under which the researcher operates determining the topic we select for inquiry, we should however not allow our biases and powerful overt inducements in cash influence the end-product or outcome of our research as social engineers.

When we are now satisfied that we have selected a properly focussed and "narrow" or manageable topic and we are convinced that the topic is relevant to any

of the sub-disciplines of political science, then the next step would be to "educate" the examiner on the problem you identified which you intend to solve. This is the presentation of the research problem.

Here, the political scientist needs to formulate a specific problem that can be investigated empirically. Despite the fact that students often find it difficult to state a research problem, we should not ignore the importance of stating the problem in the first chapter which normally deals with the methodological aspects of the project. The research fellow must know the problem that he intends to solve in order for him to get at the solution with little or no efforts.

What then is a scientific problem statement? Kerlinger has this to say - "A problem, then, is an interrogative sentence or statement that asks: What relation exists between two or more variables?" (Kerlinger, 1973: p.17). For example if Miss Nkameku was interested to investigate if the comments made by Dr. Okpabi (Lecturer) about the poor performance of students in POS 2212: Social Statistics II in a particular university enhances student's performance, one can state the problem in a quizzical form thus: Does a lecturer's comments on POS 2212: Social Statistics II cause or precipitate improvement in student performance? One variable above is Lecturer's comments and the other is students' performance. Another example of a problem statement can be stated thus: Does parental advice cause improvement in young people's participation in politics? The first variable in the above example is "parental advice" and the second variable is "young people's participation".

In the above examples, the relational part of the problem statement is expressed by the word "precipitate" or "cause". Although rare exceptions to the above rule occur only in taxonomic or methodological research which does not concern us here, suffice it to state here that some metaphysical questions are beyond empirical testing possibilities. For example questions like "Does democratic education improve the human rights records of African Governments?"

Once a researchable topic has been selected and an empirical research problem has been stated, the next step is to define the terms used in the project, review extant and current literature, and state the relevant hypotheses.

II. THE STRUCTURE OF THE RESEARCH REPORT

The researcher has to clearly define the terms, constructs or concepts used in the research project. This is done in order to facilitate the organization of our data in order for us to perceive relationships among them. McClelland (1951) defined a concept as "a shorthand representation of a variety of facts. Its purpose is to simplify thinking by subsuming a number of events under one general heading". In other words, a concept is conceived here as an abstraction from observed events.

Some concepts however are close to the facts they intend to represent like the concept cat. Here, we only need to point to specific cats which have common characteristics that can be easily observed or measured. On the other hand, we have concepts like "Political Attitude" and "Democracy" which are not so easily related to the phenomena they are intended to represent. This is so because these are inferences, at a higher level of abstraction which are sometimes called constructs - "since they are constructed from concepts at a lower level of abstraction" (Sellitz, *et al.*, 1976: p.70).

Misunderstanding of concepts often arise when the gap between a researcher's concepts or constructs and the empirical facts on the ground is too wide. Hence much care has to be taken when defining them.

The definitions of concepts and the suitability of the operations used to represent them have been important issues in many of the examples of problem formulation. The student investigator should note here that no matter how elaborately we define our concepts, we must translate them to empirically observable events if we are to carry out any successful Political Science Research (PSR). That is to say, we should be able to posit, set up, "fabricate" or formulate working or operational definitions. These "working definitions" are having the qualities needed if the instruments based on them gather data that constitute satisfactory indicators of the concepts they are intended to represent. The researcher should note that working/operational definitions consist of two sub units - measured and experimental. A measured operational definition helps the researcher to describe how a given variable will be measured while the experimental operational definition helps us to spell out the details of the researcher's manipulations of a variable.

The definition of a construct with other constructs fall squarely in the realm of a constitutive definition thus the research fellow is free to use constitutive definitions to sharpen the focus of the project, thesis or dissertation. For example we can define "Political Anxiety" as "subjectified political fear". In this case, we have substituted one concept for another in order for us to streamline our definition. Professor Torgerson, opines that all constructs, in order to be empirically useful, must possess constitutive meaning. (Torgerson, 1958: p.5). This means that they should be capable of being used in theories.

Theories on the other hand, must be developed through refined imagination and insight. A theory being a set of concepts plus the interrelationships that are assumed to exist among those concepts also includes consequences or hypotheses we sometimes assume logically to follow from the relationship proposed in the theory.

The above exposition brings us to the central and intricate issue of "hypotheses formulation". The consequences of our theoretical assumptions or hypotheses are

actually the statements we submit to scientific testing. On hypotheses, Kerlinger has this to say: "A hypothesis is a conjectural statement, a tentative proposition, about the relation between two or more phenomena or variables. A political scientist will say, if such and such occurs, then so-and-so results" (Kerlinger, 1973: p. 12). For example we may assume that if A, B and C are true, then "X" most likely is also true because "X" tends to follow from A, B and C.

Let us also assume that the citizens of Nigeria had no problem "worshiping" their tyrannical leaders 5 years ago but with the introduction of a free press - mass media - more people started clamouring for freedom. Most citizens were however not employed hence could not buy newspapers, radio and television sets which led to frustration, which subsequently led to their participating in riots against the hitherto "feared" and "stable" regime. A possible hypothesis that could emanate from the above assumptions can be:

Hypothesis 1: Exposure to the mass media is related to the incidence of riots in Nigeria. In the above example, A, B and C are assumptions and X is the hypothesis which logically follows namely: that the citizens exposure to the mass media leads to rioting.

In explaining the above relationship, we often borrow from pure and applied mathematics where "X" is assumed to be the "independent" (variable predicted from) and "Y" the "dependent" (variable predicted to). Put differently, the dependent variable "Y" is the presumed effect while the independent variable X is the presumed cause hence in our example above, the "cause" or independent variable (X) is the exposure of the citizens to mass media, while the "effect" or dependent variable (Y) is the rioting which raises her ugly head as the end product.

To drive home our knowledge of independent (X) and dependent (Y) variables, let us take another hypothesis -

Hypothesis 2: Most of the cover-up of embezzlements by Accountants in Nigerian ministries and parastatals has been due largely to the connivance of the internal and external auditors. While the auditors are the independent (X) variables because they serve as the cause, the embezzlement leading to bankruptcy of the Board of Internal Revenue is the effect (Y) or dependent variable. Embezzlement above is the dependent variable because its occurrence is explained by the prior existence of corrupt internal and external auditors in the polity.

No matter how researchable, sharp and academic a problem statement has been presented, or how "definitive" the definition of concepts and constructs have been highlighted in the project and or how vivid, graphic and didactic the hypotheses have been formulated, there is the need to recheck or revisit relevant related research already consummated by other scholars in the field of study. Conducting and

preparing "a review of the literature" will help us to (a) reselect a researchable topic if the first is out of place, (b) restate our problem statement to sharpen the focus, (c) clarify our problem still further, (d) suggest ways of translating the concepts into concrete operations and (e) ensure that the findings will make a contribution to a body of knowledge in that particular subdiscipline in political science including International Relations and Foreign Policy.

On the question of the modalities for a good review of the related literature, it is unfortunate to state here that most students decide to simply replicate another students or investigator's work with only minor alterations and modifications. This is certainly unacceptable because the researcher's work is supposed to be an original piece. Besides, the most modern presentation is supposed to embody a critique of both extant and current literature in the field. Expressed differently,

literature review should not be a mere recitation or serial listing of studies, findings and conclusions, but should in the best tradition of scholarship, identify: thema, concerns, inadequately documented conclusions; unresolved issues, frequently used constructs, neglected but potentially promising constructs, the methods used to measure such constructs, theories and research from which such constructs have been derived, related research findings from other disciplines and unexplored as well as recognised implications of findings for both theory and practice.

The intending researcher must take the above suggestions religiously because scientific enquiry is a community exercise despite the fact that individuals carry out individual research ventures. In actuality, each single study rests on the previous ones and provides a starting point for future studies. The more the student researcher can establish more links between his work and other studies or body of theory, the greater his contribution to knowledge because knowledge is supposed to "... grow from more to more ..."

Another traumatic problem in the dynamics of political science research is the adoption of a scientific and relevant theoretical framework to give meaning and a sense of direction to the entire project. The investigator is free to use any of the subsequent "theoretical frameworks" which suits the project in question (i) systems theory (ii) structural functionalism (iii) The Marxian Dialectics or Dialectical Materialism (iv) The Dependency Theory including the "sophisticated" and "vulgar" dependentistas (v) Game theory etc.

What the intending research student should note here is the fact that all of the above theoretical frameworks have their limitations like the mechanistic shortcoming of the systems theory which is not only synoptic in content and style, ethno-centric in approach but has limited predictive and explanatory relevance, to the changing

world of political phenomena. Hence these deficiencies and strengths of the theoretical tools of analysis should be presented at least at the Doctor of philosophy level so that the examiner will see why you chose a particular framework for your analysis. In the project, thesis or dissertation, this is normally treated under Chapter One: Methodological Issues.

III. OTHER METHODOLOGICAL ISSUES

In this section which concerns the methodology of data generation or collection, the student researcher is supposed to tell the examiners what he did to solve the initial problem stated earlier in the problem statement. In trying to consummate the above task, we have to be careful to state our facts clearly so that another investigator can replicate the findings and come to the same conclusion if the work was empirical.

Sometimes replication may be impossible because some journals cannot contain exhaustive scientific findings due to lack of space and financial difficulties - yet the criterion for replicability remains a good one to this day and should not be neglected when we are engaged in any research work.

(i) Sampling

Since it is impossible to interview all those who may be connected to our selected topic in Political Science, we have to select few at random, and study them or serve them with questionnaires. After our "study" of these few, we can conveniently make general conclusions about people. Here we have to state the type of sampling method we are using like nonprobability sampling which consists of accidental, quota and purposive samples or the probability sampling methods which consists of simple random samples, stratified random samples, cluster sampling or a combination of probability and nonprobability sampling techniques. The method used to select the respondents and why they were selected must be stated. For example if we decided to write on a topic like - The Political Economy of Industrialization in Cross River State 1987 - 1998, we must be prepared to use the dialectical materialist theoretical framework and interview all the Commissioners of Industries, and all the Governors (Military and Civilian) in Cross River State between 1987 - 1998. Also to be interviewed would be all the contractors who were handling jobs which were related to industries in Cross River State.

(ii) Source of data

If we chose content analysis as our source of data, we must read newspapers, magazines, etc to extract the information. Similarly, we can glean information from

official sources, including files, gazettes, court records, census of population, newspaper reports, contracts, letters, tape recording including video cassette recording (VCR) and films. We can also compile data from a primary source after the events in a retrospective manner like from reports on visits to given institutions, personal diaries, autobiographies and memoirs.

On the contrary, researchers can also generate data from secondary contemporary sources like from reports based on fieldwork by Research Assistants, historical studies using actual documentary evidence, statistics research, research based on correspondences while secondary retrospective source of data collection is via research using diaries and journals. What the research fellow has to do carefully here is to make sure that the people keeping the above records are quite impartial and skilled and that even the often "trusted" government "official" statistics like those by the defunct government of Sani Abacha are not fabricated to cover-up his administrative ineptitude.

(iii) Bias in Political science research

More often, what the Politicians or Military Dictators record in their diaries are personal justifications of their own calculated actions and not the empirical facts of the matter. For example, the US President Bill Clinton has recorded that by ordering the missiles attack on Iraq, he has initiated a move which "... will lead either to Saddam's downfall or to fuller inspections by UNSCOM ..." (McGeary, *et al.*, 1998: p.36). While President Saddam Hussein has instead emerged as a "hero who faced down US imperialism" (McGeary, *et al.* 1998: p.37). Furthermore, the Iraqi population views the bombings as that inspired by the Monica Lewinsky's affair and there is a high probability that the operation "Desert Fox" may eventually force Saddam to stop the return of the United Nations weapons inspectors to Iraq. We as researchers have to be careful with the information we find from politicians and military dictators the world over. We also need to read biographies and autobiographies "between the lines" to identify biases and the over projection of personalities for honourific value. Autobiographers can project themselves as saints while most biographers are commissioned by the children or relations of the deceased to write what would be palatable to the public.

It is important to note that it is unpardonable for a political scientist to use secondary sources of data when primary sources are available. This is so because secondary data is often distorted in transmission.

(iv) Prediction

The ultimate test of a political science explanation is how clearly it allows us to

predict the way the empirical world is, hence with prediction, we can ascertain the extent to which observations of political behaviour agree with what the theory specifies the problem should be.

We start the testing of hypotheses by setting up models which involves an explicit hypothetical deductive structure. Those hypotheses which follow from the assumptions and that which we wish to test are also usually explicitly stated. For example, when in 1962 Converse decided to examine the way that people use information in deciding either to support their party's candidate for the US Presidency or to defect, he set up a model and came to the conclusion that voting decisions are influenced by both long and short term interests (Converse, 1962: p. 578).

In the study, Converse began by hypothesizing that defection from one's party would be less among those party stalwarts who were politically involved and consequently were in the flow of political information and had large stores of information about politics. From the above, we have reason to believe the evidence that supports a particular hypothesis provides some reason to claim that the theory from which the hypothesis was derived is certainly true. Note here that the above evidence may not always be conclusive because except we try to formulate and eliminate as many of the plausible alternative hypotheses as possible, we may end up with the wrong conclusion.

In another development, Converse stated an alternative hypothesis thus:- The more politically involved defect less than the less involved. Using the 1958 US Presidential elections as a point of departure, Converse saw that the above hypothesis was correct hence we can conclude here that data collected via opinion surveys and empirical techniques are sometimes beyond the control of the "young" researcher hence no amount of manipulations can change the above facts because "ceteris paribus" the same findings would be arrived at if another investigator uses the same procedures on the same sample.

When testing hypotheses, a measurement theory should be established which would clarify the set of assumptions about the way the actual world of theory is related to observation. When we are given any two variables that show some significant relationship, we have to deduce some explanation although we have to note that the critical test relation is not the "ex post facto" justifications but the ability to predict other relationships on the basis of it.

Sometimes our conclusions may be inaccurate because of the use of faulty equipment like calculators and computer sets. In order for us to be sure of what we are doing at the hypotheses stage, it is advisable to conduct a pilot study of your terrain and you may painfully realize that the equipment is defective hence not

reliable or that the boss of those you wish to use as respondents to your questionnaires may not be willing to allow you administer the questionnaires etc.

On the other hand, the investigator must decide to use either the "after-only" or the "before-after" experimental designs which reflect the measurements of the dependent variable in relation to the introduction of the experimental variable. Put differently, the "before" indicates a "pretest", while "after" a "posttest". In doing this, we have to particularly note the concomitant variation and the evidence about the direction of influence.

Finally, the method we use to test our hypotheses must be graphically, vividly and pedagogically reported in the project, thesis or dissertation. We also have to state (i) how the independent variable(s) has been manipulated to arrive at the criterion for making admissible explanation(s), (ii) the instruments used like-equipment, audio visual aids, instructions to respondents, control precautions and the weaknesses and limitations of the study.

After consummating the above trajectories, we are now faced with the empirico-analytical chapter of data analysis, presentation of results and data interpretation.

IV. DATA ANALYSIS, INTERPRETATION AND PRESENTATION

Some scholars usually put the data analysis methods in the first chapter - methodological section. It is however better to devote a whole chapter for this exercise because it is the "heart" of the project, thesis or dissertation. The student researcher who neglects the above essentials or mishandles the analysis, will not earn enough marks to guarantee the award of the B.Sc., M.Sc. or Ph.D. degrees in Political Science.

Once amorphous data have been generated, collected and collated, we have to condense or reduce it into the form of a large matrix, slot it into a computer or classify it in tables or figures ready for coding. These condensed forms i.e statistical tables or figures should be able to clearly inform the project supervisors what the data actually say or represent. The whole project carries the scientific exposition while the tables help us to understand the scientificity of the exposition and gives the statistical "exhibit" for assertions made in the dissertation.

From the above phase, the would-be-political scientist has to turn his full attention to the data analysis, presentation, and interpretation stage which consist of closely related operations, hence we have to analyse our data, present it logically and interpret it accordingly. We have to analyse the data in order to summarize the completed observation in a manner that will give answers to the research problem already stated.

Similarly, the interpretation process includes our quest for the broader empirical meaning of these answers by relating them to available knowledge.

The interpretation and analysis of data is the end-product of all preceding steps in research hence the research fellow should note that interpretation is inextricably intertwined with data analysis rather than a distinct entity or operation.

It is pertinent to state here that the investigator of political phenomena must as a matter of procedure first of all analyse data before proceeding to interpret the results of the analysis.

Since political data analysis is preoccupied with categorizing, manipulating, ordering, compartmentalizing and summarizing political data which will in turn help us to obtain answers to research problems, the research student should be prepared to reduce data to meaningful, interpretable and consumable form so that the scientific relations of research problems can be studied empirically and adequately tested. We normally use statistics to manipulate and summarize numerical data and to compare the results obtained with intelligent chance expectations.

Let us assume that Mr. Kokori - a Political Science researcher - hypothesizes that styles of political leadership in Abacha's Nigeria, affect group - member participation in politics in certain ways. He plans his experiment, executes it and gathers data from his respondents. In the end, he should be able to answer the question: How do styles of political leadership affect group-member political participation? The categorizing, compartmentalization, ordering and summarizing should be consummated early in the research so that the researcher can visualize the possibility of his data analysis ever helping him to answer the questions posed by the research problematic.

As explained earlier, data interpretation accepts the critical results of analysis, postulates inferences necessary to the research relations being studied and usually draws conclusions about these relations. There is however the conscious efforts to institutionalize "continuity" in political research through the linking of the results of different studies in the field.

Furthermore, empirical data interpretation leads to the establishment of "explanatory concepts". The political scientist engaged in research must try to measure and classify any seemingly amorphous data. This is the position of the "positivist attitude" while those who subscribe to the "phenomenological attitude" opine that individual data gathered are meaningful in their own right whether or not they can be quantified or categorized.

Although an admixture of the above approaches is recommended when the researcher is in doubt about the measurement scales he is using, modern researchers however lay more emphasis on the postivist orientation. In using the "positivist

attitude" to "empiricize" non-quantifiable data, we shall discover that the sharpness with which categories can be explained varies according to the nature of the raw data generated, the type of problem to be investigated and the particular situations to which the data refer.

In order to understand the principles of data classification, sound knowledge of Basic Concepts in Quantitative Politics (offered in the first year in Political Science) where the epistemological aspects of sets is treated is necessary. For example a "category set" is made-up of two categories. A typical category set must meet three basic rules namely"

1. The set of categories should be derived from a single classificatory principle.
2. The set of categories should be exhaustive; that is, it should be possible to place every response in one of the categories of the set.
3. The categories within the set should be mutually exclusive; it should not be possible to place a given response in more than one category within the set, (Sellitz, *et al.*, 1976: p. 466).

It is important to note here that the categorization of data in Political Science is usually consummated via coding which is viewed as a technical procedure by which data generated is categorized.

Sometimes, the researcher can easily identify problems of reliability in coding (Hyman, 1972), (Cronbach, *et al.*, 1972) because consistency, dependability, accuracy and the extent to which two uses of the same measure under comparable conditions yield the same results is often difficult to attain in actual life situations. However, reliability is worth striving for hence the researcher should not relent efforts in searching for reliable measurement instruments while conducting research in academic circles.

During the process of analysis and interpretation, investigators are free to use statistics to buttress their findings although it is often difficult for those political scientists with no mathematical background. The decision to select a special statistic depends on the investigator and it is determined largely by the nature of the data gathered and the question posed.

Those undergraduates who are good in mathematics could use simple factorial analysis of variance, correlation analysis including Spearman and Kendall, Chi-square and the Standard deviation to present their findings. Investigators who are scared of figures could use the simple percentage method to analyse and present their research report. Political scientists who are awarded the Bachelor of Science (B.Sc.) degree must show some rigour in arriving at their conclusion. Hence Udo's prescription "Non quantitative methods of analysis or evaluation may be used by the researcher to the advantage of his readers who may not be well informed in mathematics" (Udo,

1987: p. 155) perhaps holds sway for those in the Arts disciplines and not political science because as policy scientists, we have to display some modicum of mathematics (at least 50%) in order to justify the award of the B.Sc and M.Sc. degrees we are often excited to collect on the convocation day.

If on the contrary the investigator has used any unusual method of analysis, the research fellow should vividly describe the method in sufficient detail to enable the supervisors or any other scholar to understand the report.

V. RECAPITULATION AND CONCLUSION

In this section of our thesis, we are expected to present a summary of the entire project which could be a recapitulation of the important features or a restatement of the salient points of the dissertation. In doing this, we have to delete circumlocutions, redundancies and superfluous words and sentences which are not functional. In Journal articles, this summary which is usually one hundred words or less goes by the name ABSTRACT and is presented at the beginning of the article while that of a thesis is presented as RECAPITULATION at the end.

Some of the important or main points to be restated in the barest outlines in this chapter include (i) the problem (ii) the procedures used (iii) the findings of the problem and (iv) the major conclusions drawn from them.

Also, to be revisited are the hypothesis which were tested earlier, the conclusions deduced and what was actually observed. We are free to suggest prognosis for action at this stage.

We have to review the above particulars in order for us to see whether our (a) findings confirm or debunk the hypotheses already stated in our chapter dealing with the methodological aspects, (b) theory could be modified if our conclusions so dictate (c) research had raised fresh theoretical, conceptual and methodological issues which could precipitate further research.

Like Strunk and White (1959) who dedicated their book The Elements of Style to the importance of clarity, brevity and simplicity in dissertation writing and Campbell (1969) who contributed to the growth of Research Methodology with his Form and Style in Thesis Writing, we have to add yet a fourth trajectory, namely: the necessity of accuracy because we should not expect our project supervisors to waste their time wading through long, serpentine, involved, unclear and pompous sentences couched in very bad English while assessing our thesis.

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