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The notion of cause in science and politics

This article explores some of the features and implications of causality and how the use of this contested concept may be understood and appraised as it applies to the world of politics and, in more detail, the scientific study thereof. In the teaching and learning of politics serious attention is seldom paid to the nature, implications, uses and limitations of causality as a fundamental ontological category in our quest for understanding and explanation. The article explores the conventional as well as some alternative notions of causality, and concludes with an appraisal of the significance of understandng causality.

Die begrip kousaliteit in die wetenskap en die politiek

Hierdie artikel ondersoek sommige van die eienskappe en implikasies van kousaliteit jeens die politiek, en in die besonder die politieke wetenskap, en hoe die gebruik van hierdie betwisde konsep verstaan en beoordeel kan word. In die onderrig en die studie van die politiek word weinig aandag geskenk aan die aard, implikasies, gebruike en tekortkomings van hierdie fundamentele ontologiese konsep en hoe dit ons soeke na verstaan en verklaring raak. Die artikel ondersoek die konvensionele sowel as enkele alternatiewe sienings oor kousaliteit en bied by wsye van 'n gevolgtrekking 'n waardering oor die belangrikheid van kousaliteit.

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Much of our everyday understanding of the world and how we experience it is couched in and premised on notions of causality, the idea of cause and effect. This includes both the natural and the social worlds if human agency is included. In this respect, our understanding of the conventional world of politics is no exception. What we do comprehend about politics can, to a large extent, invariably also be traced back to a conception about cause and effect. We do not, however, have a shared understanding of causality itself, and especially its significance for understanding. The notion of understanding, like causality, is also contested and controversial. For some scholars understanding is predominantly the intellectual challenge of explaining how the world works, how we can account for what has come about, or what may come about. For others again, understanding entails appraisal, interpretation and ascribing meaning to events, processes and experiences with little regard for the logical and mechanistic links that may obtain between these aspects of reality. While some scholars acknowledge the validity and necessity of both these viewpoints, the incompatibility of their respective goals and premises has fuelled much of the nomothetic (explanation) versus the idiographic (interpretation) debate that characterises contemporary social science. In the study of politics there are certainly those who believe that understanding and using causality correctly is indispensable to the discipline, those who argue that being mortgaged to its use has done much harm to the discipline of politics, those who argue that we understand it incorrectly, and those who argue that we should discard it entirely in favour of a mode of understanding that does not use its precepts. Russell's (1913: 1) famous remark nearly a century ago was not directed at politics, but it seems wholly appropriate in this instance when he writes that "The law of causality, I believe, like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm".

This article explores some of the features and implications of causality and how the use of this contested concept may be understood and appraised as it applies to the world of politics, and in more detail, the scientific study thereof. On the one hand, It appears that one learns

and uses the implications of causality with the greatest of ease in an intuitive way, the process already commencing in early childhood. The experiences that certain instances or events in both the natural and social worlds cause certain preferred or undesirable effects are readily learned and used in an attempt to satisfy human interests and goals. This common understanding is, on the other hand, carried over into nearly all spheres of human activity, political action and the systematic study thereof being no exception. In the teaching and learning of politics one seldom pays serious attention to the nature, implications, uses and limitations of causality as a fundamental ontological category in one's quest for understanding and explanation. Knowledge of the functional role of causality is, in general, assumed uncritically. One seldom questions whether causality as an ontological category with its concomitant epistemological implications is optimally suited for one's understanding of political reality, or whether one can indeed do without it. The little reflection devoted to ontological matters results, more often than not, in viewing the problem of understanding as merely a choice between rival epistemologies. On teaching and learning in political science, Bates & Jenkins (2007: 55) recently wrote that:

> a lack of sustained reflection on the contested nature of the directional relationship between ontology and epistemology tend[s] towards a prescriptive 'path dependency' and curtail[s] the possibility of reflexive learning.

The analysis commences by exploring the common nature and some dominant modes of causality. It is in many respects a puzzle that has occupied the minds of some of the best-known intellectuals in history dating back to at least Aristotle whose depiction of its nature is still currently relevant. His outline of various modes of causality represents the basis of distinguishing between so-called finalist and fatalist causal determinism, on the one hand, and so-called indeterminist causality, on the other. Exactly how one conceives of the nature of causality by way of assumption is a crucial aspect for determining the type of intellectual understanding that ensues from this. This analysis is followed by briefly reviewing some common sense ontological points of departure pertaining to causality that characterises contemporary political science. How the foregoing translates into method and epistemology

designed to answer the question "why events occur" will be discussed by briefly outlining how the manipulation of logic in the methods accomplish this. Following this, attention is drawn to three examples in which so-called common assumptions and the use of causality in the understanding of the nature of politics are indeed questioned. In a way, they are deviant cases of the prescriptive path dependency alluded to earlier. The cases differ and raise divergent questions of a controversial nature concerning one's understanding of political reality. The first two cases are only highlighted and not discussed in any detail since space does not permit this. They, however, emphasise different and unconventional ways of understanding causality. The first argues from the premise that if causality and universal determinism are true, one cannot know it to be valid since knowledge of its validity must not be causally determined. What causal determinists in fact claim about causality is denied by the very act of asserting such claims. This case argues that a mechanistic and causal understanding of politics reflects a scientific predicament, which can only be remedied if political reality is understood by means of the use of the speculative sciences. The second case argues that there are different notions of causality in various cultures and that actors may use more than one notion either consciously or unconsciously. It uses the template of comparative politics in studying the use of witchcraft and sorcery as independent variables in explaining behaviour in African soccer as a microcosm of politics. It suggests that there may be useful alternatives to the Western notion of causality. The third case, which is explored in more detail, is one in which the very use of causality itself as well as one's conventional understanding of time are committed to the fire in preference of what has been called a floating cosmology. It represents a mirror image of the conventional understanding of causality, and is a treatise that has been misunderstood by most practitioners in the discipline for the greater part of the past century. Revisiting these unconventional cases not only sensitises one to possible alternative modes of understanding political reality, it also provides some latitude for drawing conclusions on the implications of causality as it affects one's understanding of the world of politics. The relationship between ontology, epistemology and methodology is central to the concluding remarks.

While it is not within the aim and range of this article to explore the nature of causality in any depth but only implications for its use in understanding the conventional world of politics, some general remarks concerning the nature of causality cannot be bypassed.

1.   Causality

One is aware of causality through one's daily experiences. One notices that things happen, and one is inquisitive as to why certain events occur. One can often distinguish between the causes of events and the effects of such causes. Causes have effects and effects have causes one has learned. Sometimes effects are to one's detriment and sometimes to one's advantage. This basic understanding permeates all spheres of human endeavour, ranging from the raising of children, the practice of agriculture to the implementation of public policy. Even though chaos theory speaks of the so-called "butterfly effect", an almost infinite and delicate interrelatedness of all things to one another, one has a sense that the inertial frames of reference in which causality is operative are limited and that they may differ widely from instance to instance. They may range from global warming, electoral campaigns and the use of medicine to the mysterious way in which particles interact in quantum physics (cf Moyal 1949: 310-1). Since one cannot observe causality itself but only its implications, one assumes its existence and the fact that it is operative, somewhere in the background of things. From experience one also knows that time sequences are involved in the working of causality; some effects are caused rapidly while others take a long time to manifest. One's experience has also revealed that certain causes are indispensable or necessary for things to happen, but that by themselves these are not sufficient for an effect to manifest. The former must sometimes combine with one or more other elements for the outcome to occur. One certainly also knows that the latter may have substitutes, but that by themselves they cannot cause an effect without the indispensable cause. One seems to intuitively know that some of the constituents of aspects of reality are interrelated, like cross-linked sets of falling dominoes, but simultaneously, that the nature of this interrelatedness is often mysterious, complex and at best probable and therefore uncertain.

Philosophical inquiry into the nature of causality in the Western tradition dates back to at least Aristotle's *Metaphysics* and his *Posterior analytics*, both written in 350 BC. In his *Metaphysics* he writes:

> That from which a thing can first be known, this also is called the beginning of the thing, e.g. the hypotheses are the beginnings of demonstrations. (Causes are spoken of in an equal number of senses; for all causes are beginnings.) It is common, then, to all beginnings to be the first point from which a thing either is or comes to be or is known; but of these some are immanent in the thing and others are outside. Hence the nature of a thing is a beginning, and so is the element of a thing, and thought and will, and essence, and the final cause-for the good and the beautiful are the beginning both of the knowledge and of the movement of many things.[1]

In his *Posterior analytics* Aristotle expounds on this and identifies four causes, the material (the definable form), the formal (an antecedent which necessitates a consequent), the efficient and the final cause of things. He writes:

> We think we have scientific knowledge when we know the cause, and there are four causes: (1) the definable form, (2) an antecedent which necessitates a consequent, (3) the efficient cause, (4) the final cause. Hence each of these can be the middle term of a proof, for (a) though the inference from antecedent to necessary consequent does not hold if only one premiss is assumed-two is the minimum-still when there are two it holds on condition that they have a single common middle term. So it is from the assumption of this single middle term that the conclusion follows necessarily. […] One demonstration of this efficient cause being "Why did the Athenians become involved in the Persian war?' means 'What cause originated the waging of war against the Athenians?' and the answer is, 'Because they raided Sardis with the Eretrians', since this originated the war. Let A be war, B unprovoked raiding, C the Athenians. Then B, unprovoked raiding, is true of C, the Athenians, and A is true of B, since men make war on the unjust aggressor. So A, having war waged upon them, is true of B, the initial aggressors, and B is true of C, the Athenians, who were the aggressors. Hence here too the cause-in this case the efficient cause-is the middle term.[2]

1   <http://classics.mit.edu/Aristotle/metaphysics.5.v.html>
2   <http://classics.mit.edu/Aristotle/posterior.2.ii.html>

These cryptic excerpts shed some light on Aristotle's treatise on causality and, in particular, what is understood by his notion of efficient cause, a concept that approximates many contemporary definitions and uses of cause and effect. It denotes the answers given to the question "Why did this happen?" It suggests the agents, natural or human, that account for change. While his material and formal causes require no elaboration at this point, it should be noted that for Aristotle all causes served final causes, the inherent design and purpose for all that exists. It denotes the telos of things, that which something is ultimately destined to be. On final cause he writes

> ... that here the order of coming to be is the reverse of what it is in proof through the efficient cause: in the efficient order the middle term must come to be first, whereas in the teleological order the minor, C, must first take place, and the end in view comes last in time.[3]

Like efficient cause, the idea of a final cause also has its earlier and modern counterparts such as God in the writings of Aquinas and explanation in contemporary psychology where behaviour can, for example, be ascribed to end-states such as homeostasis, motives, needs and the ethical commitment of men.

Aristotle's understanding of causation inspired successive generations of scholars from every orientation to further probe the nature of the interrelatedness of the constitutive elements of the natural and social worlds. These include, among others, theologians, philosophers, logicians, historians, and in recent times physicists. The accounts of these scholars span more than two millennia, and, it would be fair to say that they are as varied as they are complex. Stated in an elementary way, causality in its various fields of operation represents a combination of three elements, namely a propensity of interrelated or interconnectedness between things, the necessity of time sequences (cause must precede effect), and the existence of context, also known as contiguity or the inertial framework of operation. In this sense, causality is understood as the recurrence of propensities of interrelatedness

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3   <http://classics.mit.edu/Aristotle/posterior.2.ii.html>

between things under *ceteris paribus* conditions. During the last century, however, the insights resulting from Einstein's theories of relativity and subsequently that of the field of quantum physics seemed to have put the understanding of causality on two different trajectories with regard to the natural and social worlds, respectively and, in particular, the spatio-temporal frameworks in which it is operative. These differences cannot be pursued in this article, except to state that while the existence of time sequences is still regarded as being necessary for events in the social world, applications in fields of particle physics entertain the notion of apparent simultaneity which in itself challenges the conventional understanding of time sequence and contiguity (cf Ushenko 1953: 95-6, Krikorian 1934: 327). It should also be noted that, in general, there has been a recent tendency to shift the analysis of causality to a more descriptive account of interrelatedness in terms of processes, mechanisms, variables, functions and probabilities and to use statistics and mathematics in this endeavour. This tendency seems to be more prevalent in the natural sciences than in the social sciences. Underlying this, however, remains the idea that law as interconnectedness is operative within parameters of space and time and that this forms the heart of the causality problem if it is to be used as an ontological assumption to explain the world, how it has come to be, and what it may become. How these three elements combine, or are understood to combine, has resulted in many modes of causality as noted by Aristotle. In this respect, two modes must be briefly discussed before examining the role of causality in the study of politics. These modes are those of causality as deterministic or indeterministic in nature and the respective implications of these modes for aspects such as free will, fatalism and moral purpose.

Determinist causality has two main variants, finalist and fatalist causality. The degree of determinism that these varieties may postulate is variable but, in general, it is much more encompassing than that of so-called indeterministic causality. Finalist causality uses Aristotle's notion of final cause and exalts some future teleological category to exclude all other features of reality and thus explain the inexorable unfolding of everything, past, present and the future unfolding of the future in terms of the telos, whatever it may have

as its source. By contrast, the fatalist variety uses the notion of efficient cause and locates all its premises in an ever-receding and ever-unknowable past wherein hereditary and environmental forces have already predetermined the present and the future. What one thinks and does has therefore already been determined by what has gone before and this, in fact, eliminates the possibility of exercising free will or pronouncing on what is thought to be the good or the truth. According to Burkill (1941: 191), full-blooded determinism postulates a world wherein inhabitants merely transmit to their successors what they have received from their predecessors and, by way of regress, this becomes an unknowable past and simultaneously a world that does not reflect our daily familiar experiences where causal efficacy is a fundamental characteristic of life. The indeterminist variety of causality does not deny the existence and operation of cause and effect. It does, however, question the extent to which its influence is pervasive such as the all-encompassing omnipresence postulated by the two determinist varieties. It specifically claims that while cause and effect is a fundamental element of reality, its existence does not preclude the possibility and potential of free will as a condition for moral purpose. In terms of both final and efficient causes there are fundamental differences between this mode of causality and the determinist mode. This is captured by Burkil (1941: 191):

> Teleology, in any tenable sense of the terms, does not imply that time's arrow is reversed and that the universe flows back on itself. [...] For clarity of thought it is necessary that a distinction be made between the real future and the future as envisaged. The envisaged future always exists as an integral element in the real present. When the envisaged future is prominent as an element in present individual experience, the real future may on occasion be said to be determined in some measure by the future as envisaged. But this is clearly not a case of determination of the present by the real future. The action of the world on us is bondage. Our action on the world is freedom. The world enters into us and then proceeds from us. The public becomes private and the private becomes public. The confluence of multifarious publicity into the unity of privacy is efficient causality, and the outflow of privacy into publicity is self-determination.

This mode of indeterminism underlies the use of causality in the social sciences, in general, and political science, in particular, and

this aspect will now be discussed. The aim is to demonstrate how a particular form of causality finds expression in linking puzzles, theory and method in an attempt to understand a mode of explanation and, by implication, explain a particular mode of understanding.

2. Causality in political science

The fact that causality itself cannot be observed and that one must assume its existence on the basis of its perceived implications has been alluded to earlier. One can, for example, notice qualitative and/or quantitative changes in the value of two or more variables, given a time sequence, and then postulate a causal link between these variables subject to further testing. Postulating such a causal link is based on an implicit or explicit

> … assumption that no theorist can avoid if he is to pursue the activity of theorizing; that assumption is that there are general patterns within the flux of the universe that can be perceived and identified (Graham 1971: 237).

This assumption may be interpreted as order in nature itself, or order superimposed on the perceptions of nature by the observer. The first implies a claim about the nature of knowledge. The former is, therefore, a metaphysical claim about the bases of epistemology and ontology, while the latter may be either an epistemological or metaphysical claim, or a claim about the psychology of scientists (Graham 1971: 237). Both these interpretations have a common denominator, namely the search for order in science. Accordingly science is concerned with the search for perceptions of a causal order, which may be described by generalisations and theories, which may lead to explanations and predictions that are verifiable (or in principle falsifiable). The assumption regarding order can never be proved; evidence to support such a hypothesis is inductively acquired and can, therefore, never achieve certainty. Irrespective of whether the assumption concerning a causal order is viewed as metaphysical or psychological, it, in fact, represents the ontological premise along with its concomitant epistemology on which conventional science, including contemporary political science, bases its explanations (cf Graham 1971: 237-42).

2.1 Common sense ontological points of departure pertaining to causality

In a recent publication of the *World Political Science Review*, Nørgaard (2008: 1-28) offers a telling analysis and a compelling argument for the indispensability of understanding causality in what makes "good political science" and it is worth noting some of his salient points. For Nørgaard the purpose of political science is to uncover, understand and explain conformist social behaviour, being aware that not all such behaviour is systematically determined by society. The attempt at realising this starts with two questions: what does one know, and what can one learn? The answers to these questions are not to be found in starting or ending with the dichotomous positions of the never-ending *Methodenstreit* but rather in the fact that inquiry is driven by puzzles and theory. Metatheoretical disagreement should not inhibit genuine theoretical and empirical debate of which the central endeavour is the most rigorous testing of hypotheses. This does not preclude methodological pluralism, but it does require what Nørgaard calls craftsmanship in order to be as certain as possible that there is something new to learn (cf Nørgaard 2008: 1-2). This craftsmanship suggests, among others, what could be called common sense ontological points of departure which are, in a way, more fundamental than discourse about methodological strategy and the employment of modes of explanation such as the intentional, functional and causal varieties. In the formal sense, the former precedes the latter, and in summary format some of the salient presuppositions and assumptions that pertain to causality could be stated as follows (cf Nørgaard 2008: 2-7): Causality can be minimally defined as conditions or events that raise the probability of effects occurring or recurring under *ceteris paribus* conditions; one cannot determine *a priori* whether behaviour is decided by acts of free will or contextual and structural incentives. Assuming the opposite will require metaphysical, theological or speculative arguments to unpack the issue; in social science there are no theories for truly unique phenomena, and similarly no theories that explain everything. All patterns of behaviour whether merely described or explained in terms of cause and effect are restricted by boundaries of space and time (contiguity); behavioural patterns are always temporary, conditional

and probabilistic in nature; the doctrine of universal determinism (determinist causality) need not be assumed. Many events can be explained causally, but not all causal explanations are known and new ones may be forthcoming while existing ones may prove to be wrong or inadequate; a causal explanation, whatever its mode, must clearly distinguish between, first, the categories of cause and effect; secondly, which category is cause, and, which category is effect; thirdly, what — counterfactually — would the situation be if the cause was absent, and fourthly, compare the "factual" and the "counterfactual" situation with one another.

The last point holds important implications. A puzzle, an intuitive hunch that objects of reality are somehow causally connected with each other can be expressed in the format of a hypothesis taking the form of "if A under conditions XYZ, then B". Since reality does not reveal the interconnectedness of its constituents by virtue of description only, causal explanation also requires interpretation and appraisal (cf Nørgaard 2008: 7). Causes and effects are abstractions concerning the functional properties of the objects or classes of phenomena that are being studied. The objects or phenomena themselves, whether they are referred to as variables, categories or any other label, need to be described as accurately as possible. Contrary to a widely held view, description entails interpretation and, in many instances, also appraisal. Asserting that a patient is anaemic is a case in point taken from medical science, and asserting that better service delivery leads to political stability is likewise an assertion that cannot be produced by so-called clinical description only. Depicting the features of phenomena may be either qualitative or quantitative, or a combination of these using nominal, ordinal, interval or ratio scales of characterisation. Cause and effect are distinguished by change (or its absence) in the properties of phenomena, given a time sequence, and this could be ascertained by either observation or by postulating hypotheses. Variation is, therefore, a requirement since inferences about cause and effect cannot be drawn from constants, and this is where theory informs the puzzle of a possible link between variables or classes of phenomena. Elementarily stated, such theory takes the formal form of "if A under conditions XYZ, then B" and "if 2A

under XYZ, then 3B" as examples of factual or counterfactual cases. In political reality, the requirement of comparing the factual and the counterfactual situation with one another can never occur under exactly the same conditions, and in some instances hypothetical abstractions will have to be compared with factual situations. The impossibility of recreating exactly similar conditions holds for both diachronic and synchronic comparisons. The former entails that the same phenomena or classes are compared over time, while the latter entails that phenomena or classes are compared in similar cases in approximately the same time slot; in both with due regard for a time sequence for an effect(s) to occur within at least one of the cases. Combining the two modes usually exacerbates the problem of controlling the influence of background variables as possible influences on the dependent variable rather than that of the cause of independent variable(s). These limitations need not inhibit theorising about causal link but it does emphasise that the need to mimic experimentation has its pitfalls and that special attention should be paid to potentially falsifying claims that no link exists and that covariations are presumed to be merely spurious (cf Nørgaard 2008: 7-9).

2.2 From causal ontology to causal methodology and its associated epistemology

Given the abovementioned ontological points of departure the question arises as to how one subjects puzzles, hypotheses and propositions about presumed causal links between aspects of political reality to the strictest tests possible. In this respect, the use of method cannot be bypassed if the challenges of scientific explanation are to be taken seriously. While all the so-called points of departure are important, the requirement alluded to above that the factual and counterfactual situations be compared with one another is of crucial importance in the design and use of method in this respect. This is probably best exemplified by the dominant methods used in comparative politics, a subfield of political science. It is embedded in a logical empiricist epistemology of which the tenets are well known, and its methods indeed represent the strictest tests possible if scientific craftsmanship of this nature is to be taken seriously at all.

These methods are the so-called MSSD and MDSD where cause and effect are respectively substituted by independent and dependent variables to ascertain the existence of possible causal links between aspects of political reality.[4]

2.2.1 The MSSD

The MSSD ("'most similar systems' design") is a method for dealing with differences in similar cases. It is also known as the "comparable-cases strategy" and is the prevailing method, but not the only one, in comparative politics, best expounded in the writings of Lijphart (1971: 682-93, 1975: 158-77). The underlying logic is taken from J S Mill's *System of logic* (1843, 1970) in which various methods of experimentation are discussed. The following two methods of Mill are relevant to the MSSD:

> *Method of difference*. If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance in common save one, that one occurring only in the former, the circumstance in which alone the two instances differ is the effect, or the cause, or an indispensable part of the cause, of the phenomenon (Mills 1970: 256).
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> *Method of concomitant variations*. Whatever phenomenon varies in any manner whenever another phenomenon varies in some particular manner is either a cause or an effect of that phenomenon, or is connected with it through some fact of causation (Mills 1970: 263).

Since Mill (1843, 1970: 573-8) rejected the suitability of his methods for the social sciences and since the advocates of the MSSD distinguish the MSSD from experimental method, the question arises as to how (beside the ethical and practical impediments on experimentation in politics) this method is related to Mill's methods. This is probably best answered by Nagel (1971: 452) when he states that "every branch of inquiry [...] if it is not strictly controlled experimentation, ha[s] the essential logical functions of experiment in inquiry". In addition, the role of logic in inquiry as determined by empirical data remains similar for cases where variations have been produced by the

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4   The features of the MSSD and the MDSD are discussed in more detail in Faure 1979 & 1994.

scientist and for cases where they occur naturally. This is especially so for observed variations in the assumed determining factors with regard to observed changes in the phenomenon being studied. Whether changes are simply found by the scientist or whether changes are produced by the scientist does not affect the role of logic if variations are alike in all relevant respects (Nagel 1971: 453).

Although the logic of the MSSD as a comparative method is similar to the logic of the experimental method, the MSSD does not conform to the physical requirements of ceteris paribus inherent in experimental design (Lijphart 1971: 683-4). The MSSD is but one of the scientific methods, not the scientific method, the other methods being the statistical and case study designs. These three methods all belong to the non-experimental category of method. The statistical method may be regarded as a substitute for experimental design in which all the logical functions of experimentation are nevertheless adhered to, but where the problem of control over variables is much larger. This method cannot manipulate data situationally as in true experimental design. Instead, it manipulates empirically observed data conceptually (mathematically) in order to ascertain that presumed or anticipated controlled relationships among variables indeed obtain. The problem of control is dealt with by means of partial correlations. Since the logic of the MSSD is identical to that of experimentation, it follows that it is also similar to statistical method in all respects except one, the crucial difference being the number of cases included. When the number of cases is too small to allow control by means of partial correlations, the MSSD is appropriate and, if the number of cases is large enough to allow for this, the use of the statistical method becomes possible. There is no clear dividing line between these methods; it depends entirely on the number of cases (Lijphart 1971: 684).

The case study method usually concentrates on one entity as its name implies. Although a number of ideal types of this method may be distinguished, it will suffice in this instance to distinguish it from the others in that it represents intensive, but uncontrolled analyses of single cases. Strictly speaking, a case in this regard is an entity which is thoroughly studied once, without variation in independent

and dependent variables during the period of investigation — which may last for several years (Lijphart 1975: 160). The observation of one case, however, can assume comparative overtones when the operative variables show variance at different points in time. In the practice of science, however, there is also no clear distinction between case design and comparative design simply because single cases are either implicitly or explicitly viewed and interpreted in the theoretical mould of a larger number of cases (Lijphart 1975: 160). Rasmussen (1972: 81) and Scarrow (1969: 7) have stressed the fact that single case investigations can assume comparative overtones.

The MSSD deals with too few cases to allow the use of statistics. There should, however, be at least two cases. Since this method is non-experimental in nature, it can only manipulate the experimental variables indirectly by means of the careful selection and/or sampling of research sites (cases) (Holt & Turner 1970: 6, Smelser 1973: 53). It follows, therefore, that studies using the MSSD are based on the premise that systems as identical as possible with regard to as many constitutive features as possible represent the optimal samples for comparative research (Przeworski & Teune 1970: 32). Intersystemic similarities and differences are the focus of the MSSD. Common systemic characteristics are regarded as "controlled for" while differences of an intersystemic nature are viewed as explanatory variables. The number of common characteristics sought is as few as possible. When differences among such systems are studied, the following theoretical implications are at stake: Common characteristics are irrelevant in relation to the differences to be explained, because they obtain in cases or systems that share these characteristics. Any set of variables that differentiates these cases may be regarded as independent if the said differentiation corresponds with the observed differences (dependent variables). This second implication is of particular importance simply because the differences in similar cases (independent variables) are usually large enough to lead to an over-determination of the dependent variables (Przeworski & Teune 1970: 33-4). The problem associated with the MSSD is that of many variables and a small number of cases. Many variables is a problem of all forms of social inquiry, while the limited number of cases (small

N) is peculiar to the MSSD. Although some remedies have been suggested (Lijphart 1971: 686-91, 1975: 159-63) to minimise the "many variables, small N" problem, these need not be discussed in this instance. What is important is the extent to which the assumptions and logical procedures embodied in the MSSD are capable of testing the conjectures and statements regarding presumed causal links between aspects of political reality.

2.2.2   The MDSD

This is a method for dealing with differences in different cases. Strictly speaking, the "'most different systems' design" (MDSD) belongs to the category of statistical analysis that was touched on in the earlier discussion of the MSSD. This design of Przeworski & Teune (1970), which emphasises an increase in the number of cases rather than the search for a small number of comparable cases, is regarded as a genuine innovation that represents an important proposal to the literature on comparative analysis and the search for causal links (Meckstroth 1975: 136). In a special way, falsification seems to be the goal of the MDSD in that it focuses on eliminating irrelevant systemic factors. In attempting this, "valid" statements are formulated regardless of the systems within which observations were made. The validity of such general statements will naturally depend on the extent to which systemic factors and the social systems from which samples are drawn can be disregarded (Przeworski & Teune 1970: 35, 39).

The elimination of "irrelevant systemic factors" is based on the logic that variations in observed behaviour start at a lower level than that of systems — for example, the values of local leaders. If it now so happens that there is no variation between systems in the rates, frequencies and so forth of the dependent variable scores, then the differences between systems are not important in explaining this variable. One must not, however, deduce from this that differences in such dependent variables are to be ascribed to systemic factors. If it also appears that the relation between an independent and a dependent variable is the same within systems, then systemic factors seem to be irrelevant and need not be taken into consideration. However, given initial differences between systems, the MDSD seeks independent variables within each system which are related in an identical way to

the dependent variable in all systems. If such independent variables are found, "membership" of the social system would not be important in predicting the dependent variable as long as the independent variables remain the same (Meckstroth 1975: 137, Przeworski & Teune 1970: 34-5, 45). If, in the words of Przeworski & Teune (1970: 45),

> ... a set of independent variables, measured within each system, predicts the dependent phenomenon independently of all systematic characteristics, the initial variation of the dependent variable will disappear when the means of the independent variables are adjusted.

Accordingly, systemic factors can only be ignored if the initial variation in the dependent variables disappears when the independent variables within each system are adjusted (Przeworski & Teune 1970: 46).

It has been demonstrated that the MSSD cannot in and by itself discover causal links between variables but that its logic is indeed capable of testing pre-existing conjectures or hypotheses about possible links (cf Faure 1979 & 1994). Whereas the MSSD is regarded as a method of falsification only for previously formulated theories and hypotheses in which specific independent variables are identified and reasoned arguments are provided to justify expected explanatory relations, the MDSD requires only a particular kind of statistical relation between variables "measured within systems" in order to infer that system-level variables can be "completely disregarded". This also implies that no system-level variable can "contribute to the explanation" and that corresponding system-level (ecological) relations are "spurious" (Meckstroth 1975: 138). By implication, then:

> ... the method purports to be able to disprove any possible proposition that might posit an explanatory relationship between system-level attributes and within-system behaviour, but without the need to articulate theories and propositions which relate those variables, or to identify in any other fashion the system-level variables whose influences are being confuted (Meckstroth 1975: 138-9, Teune 1975: 195-9).

The preceding overview of causality in political science as it is conventionally understood is a cryptic account of the DNA that facilitates causal explanation using, among other things, puzzles, theory and method. There is, of course, much more to it than the above such

as the various forms of causal explanation itself as well as the associated epistemological issues invoked by this way of addressing the "why" question. These matters cannot be addressed in this instance. It should, however, be evident that while no aspect of political reality that is accessible within the general requirements of empiricism is excluded from this mode of explanation a priori, the mode of explanation is itself to a large extent determined by way of logical manipulation and time sequencing. Its various uses can range from the highly technical and statistical to a less rigorous use of its methods. Many scholars find these so-called "rules of craftsmanship" the exemplar for practising social and political science, while others find these rules too sterile, too mechanistic, too naturalistic, too difficult and too technical. This invariably begs questions such as: whether the model explained above is indeed correct with regard to its assumption concerning the nature of causal determinism, and if not, what the implications amount to; whether presumed "scientific" (Western) notions of cause necessarily represent the best causal explanations for different cultures, and whether political science can indeed do without the use of the notion of cause whatsoever.

Cases that could serve as candidate responses to these three questions will now be reviewed briefly.

3. Causality in political science

3.1 Causality cannot claim validity since the claim itself is causally determined

As mentioned earlier, only a brief example of this viewpoint can be afforded. Singh (1985: 406) writes:

> If universal determinism is true, it cannot be known to be true, for knowledge of its truth, in order to be valid, must not be causally determined. What the determinist asserts is implicitly denied in the very act of assertion. Hence the doctrine of universal determinism is self-refuting. It destroys the very notions of truth and falsehood.

For Singh (1985: 390) political science has degenerated into "an empirio-logical, causal-statistical, analysis of the psycho-sociological

or neurophysiological processes and functions of a behaving and con-
ditioned social animal". He decries the duality of the fact/value is/
ought distinction, not due to their respective divergent cognitive at-
tributes, but because of the restrictive affiliation of political science
to only the analytic and synthetic categories of knowing. It reduces
man to *homo faber* and animal labour and it signifies the victory of the
former over *homo politicus*. The reconstruction of the human sciences
requires that one

> ... must go back to *philosophia perennis*. *Philosophia perennis* believes
> in the primordial and transcendent unity of Being, relates man to the
> cosmic order, and sees all his actions as the expression of the eternal
> and immutable principles of Reason, *lex aeterna* (Singh 1985: 406).

Singh (1985: 407) summarises his argument against the limi-
tations of a causally based political science by taking Aquinas in hand
claiming that politics is not a practical science only; it is "reason that
creates the city". The latter cannot have

> ... meaning and purpose, cannot attain its full glory and splendor,
> unless it is illumined by *vita contemplativa*, unless the human dis-
> course springs from the depth of Divine Logos, unless the love of
> man is inspired by the love of God, and unless the positive law of
> the land partakes of the immutable law of nature. Action with-
> out contemplation is an empty agitation. 'The whole of political
> life seems to be ordered with a view to attaining the happiness of
> contemplation. For peace, which is established and preserved by
> political activity, places man in a position to devote himself to
> contemplation of the truth'.[5]

Singh clearly entertains an encompassing determinist under-
standing of causality but it is simultaneously also evident that he
would find even the milder conventional variety of indeterminist cau-
sality just as inadequate as the former. For him a political science based
on only understanding mechanistic relations is not merely inadequate
and dehumanising, it is also dangerous and should be supplemented
and informed by the axiological insights of the knowledge and under-
standing that can only be obtained from the speculative sciences.

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5   Reference is to St Thomas, *Commentary on Aristotle's Nicomachean Ethics,* quoted
     by Pieper 1958: 99.

3.2 Witchcraft, sorcery and supernatural forces as causal variables?

A brief reference to this notion of cause is also warranted. That witchcraft, sorcery, the powers of darkness, divine intervention, astrology, the influence of ancestors and supernatural forces can serve as causal agents for political action is seldom entertained by political science practitioners. This is to a large extent due to the almost universal hegemony that the scientific mode of thinking is presumed to have. Scientific practitioners much rather seek so-called objective factors that influence political behaviour than actually concern themselves with what actors themselves understand the causes of behaviour to be, thereby creating a hermeneutic disjunction between second-order understanding of first-order practice and the practice of understanding cause in the first order itself. While the influence of witchcraft and sorcery as well as that of other supernatural forces on the conduct of human behaviour has been widely researched and is in no way restricted to Africa at all, Schatzberg (2002, 2005 & 2006) has eloquently drawn attention to the aforementioned disjunction within the framework of comparative politics as it applies to African sport, in particular soccer, as a microcosm of society and its relevance to African politics. The significance of Schatzberg's research is that it amply demonstrates that actors themselves often, whether consciously or unconsciously, entertain different and sometimes incompatible modes of causality that often intuitively blend into one another, depending on personal and culturally specific situations. Schatzberg's (2002) detailed analysis of a second round of an African Cup of Nations qualifying clash between Uganda and Rwanda in Kampala on 7 June 2003, which Rwanda won, graphically depicts the co-existence of sorcery and science as modes of causal thinking that were associated with this match. Among the many illustrations of such incompatible modes of thinking that Schatzberg offers are also football's association with sorcery and witchcraft in Cameroun, Senegal, the Ivory Coast, Ghana and that of the South African national team, the Bafana Bafana; Hansie Cronjé's admission that his involvement in cricket match-fixing could be ascribed to the influence of Satan; the prevalence of astrology's influence in parts of India,

and theologians arguing that the attack in New York on September 11 could be ascribed to God withdrawing protection to America due to increasing secularisation and associated practices such as paganism, abortion, gay and lesbian lifestyles.

The ontological, methodological and epistemological implications of Schatzberg's research are important for political scientists who subscribe to the so-called scientific mode of causal explanation. It raises the question of how alternative modes of causality as understood by actors in the conventional world of politics can be incorporated into the logic of scientific explanation. Whether sorcery and witchcraft can be utilised in either teleological or genetic modes of causal explanation seems to be the main challenge in this respect.

3.3 Political science without causality: Bentley's floating cosmology

To political science devoted to conventional causal explanation, a science that does not assume the notion of cause whatsoever is to entertain an evil twin, like anti-matter is to matter; it mirror-images inverse attributes denying the very essence of the former. Probably the best case of political science without causality is one that was introduced to the discipline a century ago with the publication of Arthur Bentley's *The process of government* in 1908. The views in this book are supplemented by preceding and subsequent publications of the author that cover many fields of inquiry such as logic, language, psychology, physics, mathematics, epistemology and relativity.It would be fair to state that it was not initially appreciated for the originality and richness of its views, especially those dealing with the philosophy of social science. It is now generally accepted that Bentley's major contribution was at first erroneously appraised to be the introduction of group theory into the field of political science, but that it took several decades before scholars recognised the true value of his original contribution to the field of the philosophy of social science, in particular. When the American pluralists rediscovered Bentley in the 1950s and 1960s it was for the wrong reasons; they seemingly had little understanding of his ideas (cf Gunnell 1996: 256). It is believed that Jacobson's (1964) eloquent interpretation

of Bentley served as inspiration for other scholars who appraised Bentley's philosophy of social science with more clarity. The most notable and authoritative among these are Kress (1970 & 1985) and Ward (1978 & 1984). These scholars succeeded in accounting for Bentley's views against the background of his preceding and subsequent views, thus providing a more complete understanding of the Bentleyan project. The interest which Bentley's views on science has engendered is not merely antiquarian; it deals with the very essence of "what" and "how" social science, in relation to other sciences can understand about reality and what the limitations to this amount to. To the extent that it is possible, the following short overview will briefly outline only Bentley's views concerning causality; that is its absence and its redundancy in science.

The intellectual world of Bentley in the early twentieth century was not only well-acquainted with common sense notions of causality but also with more scientific modes such as Newtonian physics, Darwinian biology, Hegelian dialectics, the use of logic such as JS Mill's methods, and Einstein's theories on relativity. Yet, save for the latter, the foregoing notions could not detract him from being a stalwart opponent of determinism that translates into causality. In *The process of government* he replaced the conventional "why" question of causal explanation with a process question of "how". In this Bentley totally opposes movements such as behaviouralism which he is supposed to have inspired. Jacobson (1964: 15) writes that he sought to release

> ... social science from thralldom to all such views of the social universe, whether conceived in common-sense terms or expressed in the authoritative language of science. He begins by challenging feelings and ideas as causal forces, then touches off a brilliant and joyous auto de fé. Into the fire go ideals, motives, desires, instincts, faculties, impulses, myths, legal fictions, altruism, egoism, intellect, racial qualities, religious sentiments, moral attachments, purposes, theories, and ideologies—these serve as explanations of nothing, but 'stand for ignorance.' In social science there is 'no more room for animistic 'causes' "than in any other science. Before Bentley is through it is not only specific causal agents which are consigned to the flames, but traditional causality itself. All is movement and flux, all is process. Not 'why,' but 'how' is the appropriate question to address to social phenomena; not ultimate explanation but complete description is the goal.

Ward (1978: 599) sheds light on Bentley's rejection of the above categories serving as causes for explaining human behaviour when he writes:

> Bentley claimed that a systematic psychology could have arisen more easily if British empiricism had not imported into psychology the spatial and temporal categories of Newtonian physics [...] Since the mechanistic causal patterns required by classical physics could not be discovered unproblematically in psychological phenomena, psychology had oscillated between reductionist theories that failed to account for the phenomena of mental life and 'mentalistic' theories that were hopelessly arbitrary and inconsistent. In other words, the great consistency of physical theory in no way requires that psychology, in its search for scientific status, adopt the substantive teachings or cognitive styles of physics.

For this reason Bentley regarded it as futile to use self-subsistent entities, which are themselves unexplained, as causal and explanatory factors:

> In the case of political science, he demonstrated that accounts based on the motives of skin-bounded persons were tautologous in that such motives, when listed as causes of social developments, were simply derivations from the very activities to be explained; furthermore these motives were conveniently reformulated to explain contrary developments (Buscemi 1985: 294).

For Bentley the use of ideas and ideals in their everyday sense as causal factors to explain human behaviour is therefore to ascribe causal efficacy to human dispositions making us

> ... all naive metaphysicians whose convictions about the nature of reality are no less dogmatic than they are implicit. These 'realisms' are carried into and become presuppositions for scientific modes of thinking (Ward 1978: 597).

Bentley's science is one that would be sceptical of the statistical modelling that characterises much of contemporary causal explanation in political science. Ward (1978: 604-5) argues that Bentley

> ... would not have been surprised by recent criticisms of conventional statistical techniques in causal modeling — such as zero-order correlations, partial correlations, and multiple regression coefficients — on the grounds that these procedures are actually applicable only to a rather restricted class of causal structures (Lewis-Beck, 1977). On a more fundamental level, Bentley would

have doubted the notion that we can establish temporally asymmetric variable orderings and assume that exogenous variables act upon the variables in a causal system in random and uncorrelated ways. He might well have insisted that any empirically interesting causal model required a nonrecursive formulation. He might have approved of efforts by econometricians to model 'causal circles' and other nonrecursive systems, but would have deplored the conservatism which requires that these be resolved into recursive systems (Strotz & Wold 1960: 179-890).

This scepticism thus questions the utility and validity of causal relations that methods such as the MDSD and the MSSD, for example, are designed to uncover. However, the relations that interested Bentley were of a different kind. They were not correlations of a statistical nature but descriptions of units that transcended the boundaries of person, space and time in order to uncover coherence by using pure mathematics and thus comprehension. Given his interest in Einstein's theories of relativity, he was more interested in the relationships between objects and actors than in the objects and the actors themselves. These descriptions are only one cross-slice of many possible cross-slices of social and political reality which is a series of ongoing processes. In this sense Bentley's science is a part of the cosmos at work, attempting to unravel our understanding of the cosmos itself. In such a science process is more important than narrative and cause which obfuscates the former with baggage such as determinism, contiguity and time. Absolute time, in the Newtonian sense, is no longer important for Bentley science since it cannot discard the notion of determinism. Absolute time itself must be discarded for the purpose of continuity, the process itself:

> The object of analysis is not, as in Plato, to make analogous the principles of soul and of state or to manipulate one as a 'cause' of the other, but to identify them even while retaining the discreteness of the actual materials, in order that one might be in a position to state all relations in a part of them, and a part of them in all of them. It was meaning and comprehensiveness Bentley was after, and not explanation by any particular content. Content itself is at best a single manifestation of the whole. Upon the foundation of such a theory of 'social life stated in terms of activity' scientists would one day be able to erect 'a coherent system of measurements (Jacobson 1964: 19).

For Bentley the scientist is therefore not someone such as a privileged Kantian that can arrange experience in universal and unproblematic ways. The coherence that science seeks to uncover must be earned by studying the process itself; it is not a transdisciplinary criterion that can be superimposed (Buscemi 1985: 295).

4. Conclusion

It is believed that this article demonstrates that the notion of cause, whatever one assumes its nature to be, is a crucial element of what one can know, and how one can know it. There exists a complex and contested relationship between ontology and epistemology as well as the methods that have been devised to accomplish the implied objectives of the former. The directional relationship between ontology and epistemology itself is a controversial one, the controversy centring on the directionality of the relationship itself (cf Bates & Jenkins 2007). While the issue of directionality itself is not specifically analysed in this article, it should nevertheless be clear from the foregoing that ontological discussion invariably invokes epistemological and methodological issues that are indispensible in realising scientific objectives. The same would hold true for a discussion of epistemological issues; such a discussion cannot defensibly bypass or ignore ontology and method. It is widely accepted that many scientific practitioners do not consciously choose and entertain a particular mode of causality best suited for their practice of research, teaching and learning. A mode of causality is often assumed implicitly by way of preference for a particular epistemology or the presumed suitability of methods for certain scientific objectives. What one can know by way of ontology and how one can know it by way of epistemology seem to be inextricably and reciprocally intertwined. More specifically, the notion of cause is not a monogamous set of assumptions that guide the practice of political science. While there is indeed a dominant mode of understanding so-called indeterminist causality and how to deal with it cognitively and methodologically, many alternative notions of causality co-exist with the former, a few of which were touched on earlier. In each of the four examples that were reviewed, the assumption concerning the nature of cause, or its

absence, is associated with a particular mode of knowing and practising science by meansy of methods that are suitable and used for specific purposes.

The dominant mode of indeterminist causality is, as has been shown, a highly formalised set of logical procedures devised to realise the goal of scientific explanation or, stated differently, to account for why certain political aspects of reality are caused by other phenomena. Independent and dependent variables in similar cases are strictly controlled by means of a *ceteris paribus* assumption (the MSSD), and in the case of different systems, the elimination of irrelevant independent variables by means of statistical correlations (the MDSD). While the explicit objective in this mode of explanation is the corroboration or falsification of puzzles or hypotheses of possible links of aspects of reality, there is also a less recognised implicit objective in these practices, namely an ex post and retroactive corroboration of causality itself. In a special way the success or failure of explanations yielded by means of causal explanation reveals the extent to which social and political reality itself is patterned, rule-following and ordered, and how ephemeral or persistent these are in different spatial and historical contexts.

The second notion of causality that was briefly reviewed is that of Singh who understands it to be deterministic and all-encompassing and that its very premises destroy the possibility of truth since pronouncements on the latter are already predetermined by causality itself. This case is a good example where the understanding of causality invariably shifts the intellectual quest towards the interpretation pole of the explanation interpretation dichotomy that was alluded to in the introduction to this article. For Singh meaning and purpose in politics outweighs in importance the predetermined explanations derived from causal understanding and such meaning and purpose is informed not by observed behaviour, but by the cognitive sources that reason in political philosophy and the speculative sciences can presumably unlock.

The third notion of causality of Schatzberg draws attention to witchcraft, sorcery and supernatural causes of events that are entertained by political and other actors in the first order, the conventional

world of politics. Whether these causes can indeed be incorporated into the procedures of indeterminist causal explanation seems to be one of the most important implications of Schatzberg's work. The disjunction between causes of events as understood in the first order and causes of events as understood in second-order explanations of events in the first order is not necessarily unique or problematic, but if the same independent variables are used in both orders asymmetrical explanations would pose interesting epistemological and methodological challenges. It is believed that the first-order causes that Schatzberg has pointed to can be accommodated in either the genetic or teleological modes of indeterminist causal explanation. Schatzberg's observation that some political actors simultaneously and sequentially entertain different and sometimes contradictory notions of causality that seamlessly blend into one another is probably also true for many scientific practitioners. The implications of such a pluralist understanding of social and political reality, centred in particular individuals, suggest interesting avenues of research.

The fourth case that was reviewed is that of Bentley's floating cosmology; a science without causality that seeks understanding in the coherence(s) that political processes will, according to him, ultimately reveal. It is no doubt a truly original scientific notion that Bentley introduced to political science and while it is true that his scientific project has not been realised in the discipline, the work of Diesing (1971), for example, is certainly in line with the type of inquiry that Bentley favoured (cf Ward 1984: 604). It is through the use of pure mathematics devoid of any realist assumptions that Bentley seeks to exhaustively specify the relationships between symbols, thereby uncovering patterns of coherence, and not to resort to procedures that require correspondence to external reality that Bentley hoped to realise his view of science. He does not show one how to proceed from realism to formalism, and he does not allow for ethical considerations in politics since individuals are not truly part of the search for patterns of coherence. All this may prove to be exceedingly difficult to realise, but this does not detract from the possibility thereof (cf Buscemi 1985: 296-?).

Finally, to the extent that the understanding of political reality is sought via scientific explanation rather than the interpretation of such reality, causality represents one of the most important elements of the former. A century ago Bentley discarded it and Russell declared it to be a relic of a bygone age, at least in philosophical circles. As a cornerstone of one of the most widely practised fields of inquiry in political science, understanding causality, its nature, its use and its limitations is for the most a sorely neglected area in the teaching and learning of political science. If rules of craftsmanship in political science are to be taken seriously at all, causality deserves a place in the curriculum. It is after all the understanding of political reality premised on the effects of causality that finds its way into political discourse, public policies and political action, be it a scientific understanding or otherwise.

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