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CAUSALITY AND EXPLANATION IN POLITICAL ANALYSIS

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ABSTRACT
Causality is so useful and important that most people cannot let an event go by without asking why it happened and offering their own “because”. Causality is at the center of explanation and understanding not only of our everyday life, but in all scientific fields. But what exactly is it? This article aims at presenting user-friendly overview of the essence of causality and explanation in political analysis. After a short historical overview of the philosophical grounds of causality, the two types of causality – nomothetic and ideographic are presented. The generalized criteria for establishing causality give a good reference point for researchers. At the end article discuss the main approaches to causality and its explanation.

Key words: types of causality, criteria for causality, approaches to causality

INTRODUCTION
We cannot really escape politics – though we try to ignore it. That is a powerful reason for trying to understand it (1). But politics is an exceptionally complex matter. The danger is that without skill in dealing with its complexities, one will drastically oversimplify politics. It is fair to say, that most people do oversimplify. The major challenge of political analysis is to arrive at scientifically valid explanations for why we see the particular patterns in the political and social world that we actually observe. This effort is fraught with challenges of measurement, analysis and inference. In common the term analysis means “a systematic examination and evaluation of data or information, by breaking it into its component parts to uncover their interrelationships”, or “an examination of data and facts to uncover and understand cause-effect relationships, thus providing basis for problem solving and decision making” (2). There are many distinct approaches and ways of undertaking political analysis. The linking unit between them is the causality and its explanation. Causality is the main instrument of extracting the knowledge through the political analysis. Its intellectual grounds go far back in the history.

PHILOSOPHICAL GRAUNDS OF CAUSALITY
The philosophical treatment on the subject of causality extends over millennia. In the Western philosophical tradition, discussion stretches back at least to Aristotle, and the topic remains a staple in contemporary philosophy. To answer various Why? questions, Aristotle identified four types of causation, the four cases. (1) Material cause, whereby the material composing a thing determines its behaviours, as a rock falls by its heaviness; (2) formal cause, whereby a thing's form determines the thing's nature or role, as a human differs from a statue of a human; (3) efficient cause, which imparts the first notable change, as a human lifts a rock or raises a statue; (4) final cause, the ultimate end for which a thing exists, although the thing, even a human, might not know that end (3). Thus only efficient cause is what would now be called causation. (The others would now call composition, category, and purpose).

Aristotle himself explained, cause means (a) in one sense, that as the result of whose presence something comes into being—e.g., the bronze of
a statue and the silver of a cup, and the classes which contain these [i.e., the material cause]; (b) in another sense, the form or pattern; that is, the essential formula and the classes which contain it—e.g. the ratio 2:1 and number in general is the cause of the octave—and the parts of the formula [i.e., the formal cause]. (c) The source of the first beginning of change or rest; e.g. the man who plans is a cause, and the father is the cause of the child, and in general that which produces is the cause of that which is produced, and that which changes of that which is changed [i.e., the efficient cause]. (d) The same as "end"; i.e. the final cause; e.g., as the "end" of walking is health. For why does a man walk? "To be healthy," we say, and by saying this we consider that we have supplied the cause [the final cause]. (e) All those means towards the end which arise at the instigation of something else, as, e.g., fat-reducing, purging, drugs and instruments are causes of health; for they all have the end as their object, although they differ from each other as being some instruments, others actions [i.e., necessary conditions] (4).

Aristotle further discerned two modes of causation: proper (prior) causation and accidental (chance) causation. All causes, proper and accidental, can be spoken as potential or as actual, particular or generic. The same language refers to the effects of causes, so that generic effects are assigned to generic causes, particular effects to particular causes, and actual effects to operating causes.

In line with Aristotelian cosmology, Thomas Aquinas posed a hierarchy prioritizing Aristotle's four causes: "final > efficient > material > formal" (5). Aquinas sought to identify the first efficient cause—now simply first cause—as everyone would agree, said Aquinas, to call it God. Later in the Middle Ages, many scholars conceded that the first cause was God, but explained that many earthly events occur within God's design or plan, and thereby scholars sought freedom to investigate the numerous secondary causes.

With the end of the Middle Ages however, Aristotle's approach, especially concerning formal and final causes, was criticized by authors such as Niccolo Machiavelli, in the field of political thinking, and Francis Bacon, concerning science more generally. A widely used modern definition of causality was originally given by David Hume (5). He denied that we can ever perceive cause and effect, except by developing a habit or custom of mind where we come to associate two types of object or event, always contiguous and occurring one after the other (6). Hume expanded this to a list of eight ways of judging whether two things might be cause and effect.

1. "The cause and effect must be contiguous in space and time."
2. "The cause must be prior to the effect."
3. "There must be a constant union betwixt the cause and effect is chiefly this quality, that constitutes the relation."
4. "The same cause always produces the same effect, and the same effect never arises but from the same cause. This principle we derive from experience, and is the source of most of our philosophical reasonings."
5. "Hanging upon the above, Hume says that "where several different objects produce the same effect, it must be by means of some quality, which we discover to be common amongst them.""
6. And "founded on the same reason": "The difference in the effects of two resembling objects must proceed from that particular, in which they differ."
7. "When any object increases or diminishes with the increase or diminution of its cause, 'tis to be regarded as a compounded effect, derived from the union of the several different effects, which arise from the several different parts of the cause."
8. An "object, which exists for any time in its full perfection without any effect, is not the sole cause of that effect, but requires to be assisted by some other principle, which may forward its influence and operation."

However, according to Sowa (2000), citing Max Born in 1949, "relativity and quantum mechanics have forced physicists to abandon these assumptions as exact statements of what happens at the most fundamental levels, but they remain valid at the level of human experience." (7)

The deterministic world-view is one in which the universe is no more than a chain of events following one after another according to the law of cause and effect. To hold this worldview as an incompatibility, there is no such thing as "free will". However, compatibilist argue that determinism is compatible with, or even necessary for, free will. Existentialists argue that while no intrinsic meaning has been designed in a deterministic universe, we each can provide a meaning for ourselves (8).
In logic causes are often distinguished into two types: necessary and sufficient. Necessary causes: If $x$ is a necessary cause of $y$, then the presence of $y$ necessarily implies the presence of $x$. Sufficient causes: If $x$ is a sufficient cause of $y$, then the presence of $x$ necessarily implies the presence of $y$. However, another cause $z$ may alternatively cause $y$. Thus the presence of $y$ does not imply the presence of $x$. The presence of $x$, however, does not imply that $y$ will occur. A third type of causation, which requires neither necessity nor sufficiency in and of itself, but which contributes to the effect, is called a "contributory cause." A cause may be classified as a "contributory cause," if the presumed cause precedes the effect, and altering the cause alters the effect. It does not require that all those subjects which possess the contributory cause experience the effect. It does not require that all those subjects which are free of the contributory cause be free of the effect. In other words, a contributory cause may be neither necessary nor sufficient but it must be contributory. J. L. Mackie argues that usual talk of "cause," in fact refers to INUS conditions (insufficient but non-redundant parts of a condition which is itself unnecessary but sufficient for the occurrence of the effect) (9). For example, a short circuit as a cause for a house burning down. Consider the collection of events: the short circuit, the proximity of flammable material, and the absence of firefighters. Together these are unnecessary but sufficient to the house's burning down (since many other collections of events certainly could have led to the house burning down, for example shooting the house with a flamethrower in the presence of oxygen etc. etc.). Within this collection, the short circuit is an insufficient (since the short circuit by itself would not have caused the fire, but the fire would not have happened without it, everything else being equal) but non-redundant part of a condition which is itself unnecessary (since something else could have also caused the house to burn down) but sufficient for the occurrence of the effect. So, the short circuit is an INUS condition for the occurrence of the house burning down.

**TYPES OF CAUSALITY AND EXPLANATION IN POLITICAL ANALYSIS**

Commonly speaking, political analysis can serve a variety of purposes. Three of the most influential and common purposes of research are exploration, description and explanation (Figure 1).

**Exploration** involves familiarizing a researcher with a topic and satisfies the researcher's curiosity and desire for improved understanding. Exploration tests the feasibility of undertaking a more extensive study. It helps develop the methods that will be used in a study.

**Description** involves describing situations and events through scientific observation. Scientific descriptions are typically more accurate and precise than causal ones. For example, the Bulgarian Census uses descriptive social research in its examination of characteristics of the Bulgarian population.

**Explanation** involves answering the questions of what, where, when, and how. Explanatory studies answer questions of why. For example, an explanatory analysis of the 2002 General Social Survey (GSS) data indicates that 38 percent of men and 30 percent of women said marijuana should be legalized, while 55 percent of liberals and 27 percent of conservatives said the same. Given these statistics, you could start to develop an explanation for attitudes toward marijuana legalization. In addition, further study of gender and political orientation could lead to a deeper explanation of this issue.

![Figure 1. Purposes of Political Analysis](image.png)
Causality is at the center of explanation and understanding, but what, exactly, is it? Causality (also referred to as causation) is the relationship between an event (the cause) and a second event (the effect), where the second event is understood as a consequence of the first (10). In common usage, causality is also the relationship between a set of factors (causes) and a phenomenon (the effect). Anything that affects an effect is a factor of that effect. A direct factor is a factor that affects an effect directly, that is, without any intervening factors. (Intervening factors are sometimes called "intermediate factors"). The connection between a cause(s) and an effect in this way can also be referred to as a causal nexus. Though the causes and effects are typically related to changes or events, they include also objects, processes, properties, variables, facts, and states of affairs. Characterizing the causal relationship can be the subject of much debate.

Humans depend upon causation all the time what has happened to them, to make realistic predictions about what will happen, and to affect what happens in the future. Not surprisingly we are inveterate searchers after causes. Almost no one goes through a day without uttering sentences of the form X cased Y or Y occurred because of X. Causal statements explain events, allow predictions about the future, and make it possible to take actions to affect the future.

There are two major types of Causal explanations: nomothetic and idiographic. Nomothetic explanation is a generalized understanding of a given case, with the goal of finding new factors that can account for many of the variations in a given phenomenon. This kind of explanation is applicable to many subjects. For example a nomothetic explanation may simply suggest that political orientation is the main driving force behind people's differing opinions on a given issue. Hypotheses are not required in nomothetic research.

A nomothetic causal explanation exists when there is a correlation between an independent variable and a dependent variable. That is to say the value of the dependent variable would be different from what it would be if the independent variable occurs or acts upon it. Political analysts use the nomothetic method when they have an interest that involves political and social regularities or things that apply to people in general. The data involved in nomothetic causal explanation is quantitative data, derived from numbers. Political analysts applying the nomothetic-deductive method may run into several problems. For instance this type of research cannot rely on information on any one individual. It needs information that describes general trends, patterns, or relationships of many cases. Another problem is that this type of research would work best if information on all people, events, and places, could be known. Since this is impossible political analysts are forced to rely on inferential statistics, logical tools mixed with information about a population which is then determined from information on a portion of the given population.

Idiographic explanation is a “full”, detailed, in-depth understanding of a case. For practical reasons, only a few subjects are studied in this way. An idiographic explanation in political analysis would involve a more conclusive list of factors that could influence a person's viewpoints on a given issue. Therefore, an idiographic explanation would need to consider several factors, such as information from parents; previous experiences etc., not just political orientation.

An idiographic causal explanation is a scientific explanation that includes a sequence of events that lead to a particular outcome for a specific individual. Stated ideographically, a causal explanation would include initial conditions and then would relate a series of events at different times that led to the outcome. Political analysts using the Idiographic method are concerned with how a specific result occurs as part of a larger whole or larger set of circumstances that are related. This type of causal explanation is concerned with an understanding of human behaviour. This explanation is also more concerned with individual people, places, and events rather than the general population. This concern is also somewhat of a problem. The social researcher can make general conclusions but only based on an individual, a single place, or a single event. This means that the idiographic method cannot be used to explain any general ideas, places, events, or populations. The information gained is limited to the context of just that specific person, place, and event.
CRITERIA FOR CAUSAL EXPLANATIONS

When designing research techniques, social scientists use five criteria to help decide the accuracy of the results. When research is finished, the researchers need to go back over the data and use the five criteria to help better understand the results. If one of the criteria is not met while conducting research, we find it difficult to believe the validity of the research. The five criteria are: (1) correlation, (2) time order, (3) nonspuriousness, (4) causal mechanism, and (5) context.

(1) Correlation. Correlation is an empirical relationship between two variables such that changes in one are associated with changes in the other, or particular attributes in one are associated with particular attributes in the other. Correlation basically establishes that if variation in one variable occurs, then variation in the second variable should follow suit. If values in the independent variable differ in the same terms as the dependent variable, then correlation exists. This test is the same for experimental and non-experimental research. The only difference is that in non-experimental research, the independent variable is not the treatment. To establish a correlation the measurements of the data must be valid, meaning measuring what is supposed to be measured. Validity refers to finding results that correctly show the concept being measured. If a social researcher can ensure a valid measure then the data retrieved is reliable and a correlation is established. If the data found is covering more information than what is necessary it may not show a correlation.

(2) Time order. Time order is also an important criterion for causal explanation. Time order tells us that the variation in the dependent variable did, in fact, occur after variation in the independent variable. Basically, time order says whatever causes the outcome actually has to happen before the outcome. A causes B, but we have to make sure that A actually happened before B. Establishing time order is essential because this will determine the research design and help create causal explanations. Two basic research designs are longitudinal and cross-sectional. The problem that occurs is that a longitudinal research design is the only proper way to establish time order. Longitudinal design occurs at more than one point in time which allows the researcher to ensure that A did indeed occur before B. Due to the fact that cross-sectional design involves gaining data at one point in time it becomes impossible to establish which occurred first, A or B, and therefore making it impossible to establish time order.

(3) Nonspuriousness. The concept of nonspuriousness draws from the idea of time order. While time order tells us that A absolutely caused B, nonspuriousness tells us something a bit different. In some cases it may be true that A caused B, but maybe a third variable was involved, C, that caused both A and B. In this case A would not have caused B at all. The phrase "correlation does not prove causation" helps us with this concept. This criterion for causation is especially important. It would be easy for an entire set of research to become invalid simply because a third variable was overlooked. A way to deal with nonspuriousness is to consider sampling frame. Sampling frame sets up the boundaries for what will be included in the research. When conducting research, we are able to consider what should be included in our study if it fits into the boundaries that we have set. By setting the boundaries of the sampling frame, a researcher is able to control which causes are studied. Therefore, the researcher can easily check for a nonspurious relationship.

(4) Causal Mechanism. A Causal Mechanism is a connection between the variations in the independent and dependent variables that is created by social mechanisms. In a nutshell, a causal mechanism is what causes the relationship between the independent and dependent variables. If there is no connection between the variables, then there is no causal mechanism. Intervening variables help explain the connection between the independent and dependent variables. The intervening variables truly explain the variance between the independent and dependent variables. The only drawback in the intervening variable is that finding it does not guarantee any help in finding the causal mechanism. For any experiment, there can be numerous amounts of causal mechanisms. There is no set number of causal mechanisms in an experiment.

(5) Context. Context from a sociological view is basically what the data is about. The context of the data in an experiment needs to deal directly with what the experiment is supposed to be finding. Stemming from context is the contextual effect, which is the reason why something happens differently in different sociological and geographical settings. Identifying the contextual effect can clarify the relationships between the
independent and dependent variables. Different types of contextual effect are: race, age, financial status, geography, gender and others. The list continues on to many other types of contextual effects.

Correlation, time order, and non-spuriousness are the most important of the criteria; however, causal mechanism and context can also strengthen causal explanations.

Some scholars develop of so called “false criteria for causality” (11) Spirtes and Glymour, 1991). These are: complete causation - proper nomothetic explanation is probabilistic and does not explain every single case; exceptional cases - exceptions do not disprove nomothetic explanation; majority of cases - nomothetic explanation may be applicable to only a minority of cases in a given situation.

There are also necessary and sufficient causes. A necessary cause represents a condition that must be present for the effect to follow. For example: It is necessary to enter a given political party in order to compete for parliamentary seat. A sufficient cause represents a condition that guarantees the effect if it is present. For example: Non-participating in an election would be a sufficient cause for failing it (even though there are other ways to fail it).

PHILOSOPHICAL DISCUSSION OF CAUSALITY

Three types of intellectual questions typically arise in philosophical discussions of causality:

1. What do we mean by causality when we use the concept? (Philosophical and linguistic);
2. What is causality? (Metaphysical or ontological);
3. How do we discover when causality is operative? (Epistemological)

A fourth question is pragmatic: How we convince others to accept our explanation or causal argument? (Pragmatic). A leading proponent of this approach is Bas van Fraasen (12).

All this approaches capture some aspects of causality. Therefore, practical researchers can profit from drawing lessons from each one of them even though their proponents sometimes treat them as competing or even contradictory. Our standard has been whether or not we could think of concrete examples of research that utilized a perspective to some advantage. If we could think of such examples, then we think it is worth drawing lessons from that approach.

A really good causal inference should satisfy the requirements of all four approaches (Table 1). Causal inferences will be stronger to the extents that are based upon finding all the following:

1. Constant conjunction of causes and effects required by the neo-Humean approach;
2. No effects when the cause is absent in the most similar world to where the cause is present as required by the counterfactual approach.
3. An effect after a cause is manipulated.
4. Activities and process linking causes and effects required by the mechanism approach.

THEORETICAL APPROACHES TO CAUSALITY

Brady presents an overview of causal thinking by characterizing four approaches to causal inference (12): (1) Humean regularity approach; (2) counterfactual approach; (3) manipulation approach, and (4) mechanism approach.

(1) Humean regularity approach focuses on “lawlike” constant conjunction and temporal antecedence, and many statistical methods – pre-eminently regression analysis – are designed to provide just the kind of information to satisfy the requirements of the Humean model. Regression analysis can be used to determine whether a dependent variable is still correlated (“constantly conjoined”) with an independent variable when other plausible causes of the dependent variable are held constant by being included in the regressing a dependent variable on lagged independent variables. This can be illustrated with the following example: If the invention of the method of regression analysis actually led to the emphasis upon causality in political science, then we would expect to find two things. First in a regression of “causal thinking” (that is, mention of “causal or causality”) on mentions of “regression”, mentions of “correlation,” and mentions of “behavioralism”, we expect to find a significant regression coefficient on the “regression” variable. Second, we would expect that the invention of the method of regression and its introduction into political science would pre-date the onset of “causal thinking” in political science. In addition in a time-series regression of mentions of “causal thinking” on lagged variables of mentions of “regression,” “correlation,” and “behavioralism” we would expect a significant coefficient on lagged “regression” (12).
### Table 1. Approaches to causality

<table>
<thead>
<tr>
<th></th>
<th>Neo-Humean regularity</th>
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<th>Manipulation</th>
<th>Mechanisms and capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach to the systematic aspects of causality</td>
<td>Observation of constant conjunction and correlation</td>
<td>Truth in otherwise similar worlds of “if the cause occurs then so does the effect” and “if the cause does not occur then the effect does not occur”</td>
<td>Recipe that regularly produces the effect from the cause</td>
<td>Consideration of whether there is a mechanism or capacity that leads from the cause to the effect</td>
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<td>Approach to the asymmetric aspects of causality</td>
<td>Temporal precedence</td>
<td>Consideration of the truth of: “if the effect does not occur, then the cause may still occur”</td>
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<tr>
<td>Major problems solved</td>
<td>Necessary connection</td>
<td>Singular causation; nature of necessity</td>
<td>Common cause and causal direction</td>
<td>Pre-emption</td>
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<tr>
<td>Emphasis on causes of effects or effects of causes?</td>
<td>Causes of effects (e.g. focus on dependant variable in regressions)</td>
<td>Effects of causes (e.g. focus on treatment’s effects in experiments)</td>
<td>Effects of causes (e.g. focus on treatment’s effects in experiments)</td>
<td>Causes of effects (e.g. focus on mechanism that creates effects)</td>
</tr>
<tr>
<td>Studies with comparative advantage using this definition</td>
<td>Observational and causal modeling</td>
<td>Experiments: case study comparison; counterfactual thought experiments</td>
<td>Experiments: natural experiments; quasi-experiments</td>
<td>Analytic models; case studies</td>
</tr>
<tr>
<td>Major authors associated with the approach</td>
<td>Hume (1739); Mill (1888); Beaushamp and Rosenberg (1981)</td>
<td>Weber (1906); Lewis (1973d; 1973b; 1986)</td>
<td>Gasking (1955); Menzies and Price (1993); Von Wrigth (1971)</td>
<td>Harre and Madden (1975); Cartwright (1989); Glennan (1996)</td>
</tr>
</tbody>
</table>


(2) **Counterfactual approach** to causation asks what would have happened had a putative cause not occurred in the most similar possible world without the cause. It requires either finding a similar situation in which the cause is not present or imagining what such situation would be like. In our the given example about the regression analysis, if we want to determine whether or not the introduction of regression analysis led the efflorescence of causal thinking in political science, we must imagine what would have happened if regression analysis had not been invented by Pearson and Yule. In this imagined world, we would not expect causal thinking to
develop to such a great extent as in our present world. Or alternatively, we must find a “similar” world (such as the study of politics in some European country such as France) where regression was not introduced until much later than in the United States. In this most similar world, we would not expect to see mentions of “causal thinking” in political science literature until much later as well (12).

(3) Manipulation approach asks what happens when we actively manipulate the cause: Does it lead to the putative effect? In our running example, we might consider what happened when the teaching of regression was introduced into some scholarly venue. When graduate programs introduced regression analysis, do we find that their new Ph.D.s. focused on causal issues in their dissertations? Does the manipulation of the curriculum by teaching regression analysis lead to “causal thinking”? (12).

These manipulation approaches have been criticized on two primary grounds. First, theorists complain that these accounts are circular. Attempting to reduce causal claims to manipulation requires that manipulation is more basic than causal interaction. But describing manipulations in non-causal terms has provided a substantial difficulty. The second criticism centres on concerns of anthropocentrism. It seems to many people that causality is some existing relationship in the world that we can harness for our desires. If causality is identified with our manipulation, then this intuition is lost. In this sense, it makes humans overly central to interactions in the world. Some attempts to defend manipulability theories are recent accounts that don't claim to reduce causality to manipulation. These accounts use manipulation as a sign or feature in causation without claiming that manipulation is more fundamental than causation (13).

(4) Mechanism approach asks what detailed steps lead from the cause to the effect. In our running example, it asks about the exact steps that could lead from the introduction of regression analysis in a discipline to a concern with causality (12).

Hedström suggests that explanation requires understanding mechanisms which are the underlying “cogs and wheels” which connect the cause and the effect. The mechanism, for example, which explains how vaccinations work to provide immunity from an illness is the interaction between a weakened form of a virus and the body's immune system which confers long-term immunity. In social science, the rise in a candidate’s popularity after an advertisement might be explained by a psychological process that works on a cognitive or emotional level to process massages in the advertisement. Hedstrom inventories various definitions of “mechanism.” He provides examples of how they might work, and he presents a framework for thinking about the mechanisms underlying individual actions.

Brady also discusses the INUS model which considers the complexity of causal factors. This model gets beyond simple necessary or sufficient conditions for an effect by arguing that often there are different sufficient pathway (but no pathway is strictly necessary) to causation – each pathway consisting of an insufficient but nonredundant part of an unnecessary but sufficient (INUS) condition for the effect (12).

Other theoretical approaches dealing with causality are the derivation theories approach and the process theory approach.

The derivation theories approach is developed by the Nobel Prize holder Herbert Simon and philosopher Nicholas Rescher. They claim that the asymmetry of the causal relation is unrelated to the asymmetry of any mode of implication that contra poses. Rather, a causal relation is not a relation between values of variables, but a function of one variable (the cause) on to another (the effect). So, given a system of equations, and a set of variables appearing in these equations, we can introduce an asymmetric relation among individual equations and variables that corresponds perfectly to our common-sense notion of a causal ordering. The system of equations must have certain properties, most importantly, if some values are chosen arbitrarily, the remaining values will be determined uniquely through a path of serial discovery that is perfectly causal. They postulate the inherent serialization of such a system of equations may correctly capture causation in all empirical fields, including physics and economics.

The Process theories approach distinguishes between causal processes and non-causal processes. As an example, a ball moving through the air (a process) is contrasted with the motion of a shadow (a pseudo-process). The former is causal in nature while the latter is not. Salmon claims that causal processes can be identified by their ability to transmit an alteration over space and time (14). An alteration of the ball (a mark
by a pen, perhaps) is carried with it as the ball goes through the air. On the other hand an alteration of the shadow (insofar as it is possible) will not be transmitted by the shadow as it moves along. These theorists claim that the important concept for understanding causality is not causal relationships or causal interactions, but rather identifying causal processes. The former notions can then be defined in terms of causal processes.

CLOSING WORDS
Causality has two fundamental features. One is the symmetric association between causes and effects. The other is the asymmetric fact that causes produce effects, but not the reverse. Regularity and counterfactual approaches of causation do better at capturing the asymmetric aspects of causation than its asymmetric aspects. The regularity approach relies upon the constant conjunction of events and temporal precedence to identify causes and effects. The counterfactual approach relies upon elaborations of “method of difference” to find causes by comparing instances where the phenomenon occurs and instances where it does not occur to see in what circumstances the situation differ. The counterfactual approach suggests searching for surrogates for the closest possible world where the putative cause does not occur to see how they differ from the situation where the cause did occur. This strategy leads naturally to experimental methods where the likelihood of assignment and outcomes, which ensure one kind of closeness, can be increased by rigid control of conditions or by randomly assign treatments to cases. None of this methods is fool proof because none solves the pairing problem or gets at the connections between events, but experimental methods typically offer the best chance of achieving closest possible worlds for comparisons.

Causal approaches that emphasize mechanisms and capacities provide guidance on how to solve the pairing problem and how to get at the connection between events.

The other major feature of causality, the asymmetry of causes and effects, is captured by temporal priority, manipulated events, and the independence of causes. Each notion takes a somewhat different approach to distinguishing causes from effects once the unconditional association of two events (or set of events) has been established. Temporal priority simply identifies causes with the events that came first. If growth in the money supply reliably precedes economic growth, then the growth in the money supply is responsible for growth. The manipulation approach identifies the manipulated event as the causal prior one.

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