

A Question of Faith? Stengers and Whitehead on Causation and Conformation

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Introduction

Generalized solutions with apparently limitless applications are anathema to Isabelle Stengers, who demands that we recognize the specificity of the remit of the abstractions that we are constructing. One hallmark of her work is the distrust of any response which appears to be able to mollify a wide range of positions, problems or questions. Stengers is also wary of denouncing the positions held by opponents by claiming to trap them in a logical vice or pinning them in an absurdity. This is why, in this article, I do not set out to solve either the problem of cause or the problem of faith. Instead, I want to eavesdrop on the ongoing conversation between Stengers and Whitehead and to provide some comments on how their remarks could help us reorient how we approach some of the unexpected interrelations between faith and cause in science, philosophy, and social science. Stengers' stance does not imply that we should not be ambitious in the questions or problems that we address; though there is a need to pay attention to that which has been isolated as being of concern. In the discussions that follow, I will ask some apparently general questions, but these are motivated by a central problem, namely, that the very status of cause and causation.

When we take a strict theoretical approach to science, or adopt a purely philosophical position, we might find it easy to say that there is no such thing as cause in the abstract. There is no hidden ultimate cause which sits behind the world, governing, regulating and explaining every single moment, item and process of existence. Yet, we also believe that smoking causes cancer; we tell children that matches can cause fires; we inform our insurance company that it was the other car which caused the accident. However, such mentions of causation lack the strength of a full concept of cause. It is not that smoking inevitably and always leads to cancer; or that all matches are determined to produce fires; or that the other driver was compelled to crash into us. The effect is not present in the cause: the same cause does not always produce the same effect. This leaves us in the tricky position where we may dismiss cause on theoretical grounds, but we find it harder to do without some notion of causation in our everyday lives.

It is this problematic status of causation, as something which we may deny in some aspects of our lives and yet require in others, that I want to address in this article. For reasons which I hope will become clear, I will also link this to the notion of faith in science and in social science. I will use Stengers' ideas to argue that we need some clarity with regard to the distinctions between cause as an abstract concept, individual causes, and the very notion of causation. Too often these are mixed, the boundaries blurred, and this can lead to unnecessary confusion and a premature rejection of "cause" as a genuine factor in the world and our experience of it. This lack of clarity certainly constitutes a problem for many a sociologist who have all been carefully schooled to talk only of correlations and to avoid, like the plague, any mention of direct causes; so that they unthinkingly cite the modern sociologist's mantra –"Correlation is not causation"– a mantra which only makes sense if the very concept of cause is seen as problematic, as something to be shunned.

In the analyses which follow, there are three elements that I want to draw out, in place of a solution. These are, first - the particular, and slightly peculiar, stance of modern science with regard to cause. Second, the idea that the *problem of the problem* of cause is one that we have inherited in a very specific way. A recognition of this legacy could allow for us to rethink the scope of this problem. Third, a reconsideration of the role of faith in both science and social science. Perhaps social science has lost faith in cause, when there was no need. What social science does require is a reappraisal of its faith in itself and in the world.

Whitehead and Stengers on "the birth of modern science"

Both Stengers and Whitehead maintain that if we are to understand contemporary science we must understand its origin. The aim is not to indulge in a simple history of ideas but to "dramatize" the problem (Stengers, *Speculative*; see also *Cosmopolitics* 182-88) to see what was at stake in the arguments which surrounded its genesis. For Whitehead, the story of modern science starts as a revolt against the overly rationalist conditions of medieval thought. 'Science was through and through an anti-intellectualist movement. It was the return to the contemplation of brute fact; and it was based on a recoil from the inflexible rationality of medieval thought' (Whitehead, *Science* 10). This inflexible rationality, in turn, has its own specific characteristics. Importantly, they are to do with metaphysics. 'By this

rationalism I mean the belief that the avenue to truth was predominantly through a metaphysical analysis of the nature of things, which would thereby determine how things acted and functioned' (Whitehead, *Science* 49). It is against this metaphysical inflexibility that Whitehead sets the rise of modern science.

Whitehead does not, however, dismiss all that the medieval era has to offer. To do so would be to reinforce the mistaken idea that modern science represents the dawn of a completely new era. It heralds a break from a past mired in religion and superstition, and can be seen, retrospectively, as both the origin and the apotheosis of the Enlightenment's claims to be an ahistorical, secular and universal mode of thought. In Whitehead's version of the story, the key idea that modern science inherited from the medieval era was 'the inexpugnable belief that every detailed occurrence can be correlated with its antecedents in a perfectly definite manner, exemplifying general principles' (Whitehead, *Science* 15). What medievalism and modern science share is the need for an attention to detail. Where they differ is with regard to the status of "general principles". The medieval mind will try to fit details into an already existing logical or metaphysical scheme of "general principles" such as cause, effect, existence, individuation. However, these details are not self-sufficient and so are not of interest for their own sake; they are located within a wider theological scheme. As such, these general principles are governed and guaranteed by a specific kind of God, one who inherits the rationality espoused by medieval readings of Greek philosophy. According to this outlook, an investigation of the details of the world will ultimately reveal the 'rationality of God, conceived as with the personal energy of Jehovah and with the rationality of a Greek philosopher. Every detail was supervised and ordered: the search into nature could only result in the vindication of the faith in rationality' (Whitehead, *Science* 15).

Here lies the difference with modern science, and the motivation for the latter's revolt. The medieval metaphysical survey of nature did not find anything more, it only vindicated what was already known. Modern science announces a new approach. It may well, like the medievals, use reason to search for general principles, but it does not want to rely upon a rational explanation which comes prior to the details of its investigations. The principles of science will be subordinate to the more basic and compelling idea – that an investigation of the details of the world 'for their own sake' will yield *more* (Whitehead, *Science* 16). As will be seen later, modern science's commitment to the importance of details for their own sake and the

resulting “more”, constitutes a crucial element of the “faith” of science. For the moment, the main consequence of this outlook is that the metaphysical concept of cause as a guiding principle which is discoverable before or without recourse to the things of the world becomes alien to science, as it runs counter to, or hindered, the investigation of the details of what actually happens. By committing itself to a study of details which may provide *more*, science may indeed outline localized regularities where localized causes seem to operate.¹ But these localized causes can neither be ascertained prior to an investigation of the details. This is why ‘Galileo keeps harping on how things happen, whereas his adversaries had a complete theory as to why things happen’ (Whitehead, *Science* 10). Whitehead does not say much more about the detail of Galileo’s harping, whereas Stengers has provided innovative analyses of his status in the development of modern science (for example, *Invention* and *Cosmopolitics*). The following discussion is offered not as a simple exemplification of Whitehead’s analysis but as a development of it, one which takes us in new directions. The most important, in terms of this article, are those of faith and cause.

Stengers would not want to dismiss the notion of cause out of hand, but she would ask us to be specific in terms of the problem that we are addressing. It may well turn out that it is possible to invoke efficient causation but this must involve a recognition of the specific situations in which it can be conceived, the demands that it places upon us, and the limits of its application. One clear example of this can be found in her reading of Galileo and his “discovery” of the laws of motion which govern falling bodies. Here, Stengers (*Invention* 77-9) makes the key point that Galileo’s argument does not “come out of nowhere”. As with Whitehead’s account, there is a need to understand that the specific milieu in which this problem is situated, namely, the kind of skepticism which was to be found in the late Middle Ages and which Galileo felt compelled to overcome. To understand Galileo, we need to understand this form of skepticism. Stengers characterizes it as follows: ‘the Middle Ages created a new figure of skepticism [...] condemning as erroneous, from the viewpoint of faith, any use of reason that would limit God’s absolute freedom’ (Stengers, *Invention* 79). Again, as with Whitehead, there is a need to situate the reaction of “science” to the theological.

¹ Although, as Stengers points out, science has not always been faithful to its discovery of more. For, when science wants ‘to convince us that electromagnetic radiation constitutes the sole type of entity which belongs to nature...it has found “more” in nature, but it proposes to reduce it to “less”’ (Stengers, *Penser* 52).

Moreover, “faith” is not some abstract notion, it is particular. The medieval mind’s conception of faith was mired in a sense of God’s freedom beyond the limits of human thought, intellect or reason. Within Christian theology of the time, it was maintained that anything that an individual human might imagine, speculate or state could in no way limit the power or abilities of an omnipotent God. Galileo, or any other, may announce the idea that all bodies fall in a regular way, for example, but no individual human can claim that this surpasses God’s power. God could have willed it, or still could will it, that some bodies remain still or rise, or appear and disappear. ‘What appears absurd to us is perhaps not so for God’ (Stengers, *Invention 77*).

Galileo recognized this difficulty and this is why, in 1638, he set out his discussion of falling bodies in the form of a discourse between three speakers. One of these speakers, Sagredo, is given the role of countering Galileo with the theological skepticism of the day. In this vein, Sagredo states: ‘I [Sagredo] may nevertheless without offense be allowed to doubt whether such a definition [...] established in the abstract manner, corresponds to and describes that kind of accelerated motion which we meet in in nature in the case of freely falling bodies’ (cited in Stengers, *Invention 76*). Here, Sagredo is simply reiterating a prevalent position of the day, that the abstract definition offered by one human cannot claim, on its own, to surpass the power or will of God for things to be otherwise. This represents, in a slightly different manner, the challenge that Whitehead envisaged for modern science to counter definitions “established in the abstract manner”.

Galileo needs to show that his principles are not merely abstract and therefore arbitrary. To accomplish this, he constructed an apparatus which involved an inclined plane on a flat table. This enabled him to elaborate the relations between the motion of a ball down an inclined plane, its horizontal motion across the table-top, its free-fall from the table to the ground. The key point is that Galileo “constructed” an apparatus which, once produced, enables “the motion to testify” on its own. There is no longer any need for Galileo. He can withdraw and let the motion speak for itself, and make its own argument. In an important sense, this procedure marks the birth of modern science and modern physics, but this birth also relies upon what Stengers’ calls the “power of fiction” (Stengers, *Invention 79-80*). It is only recognizing the “power of the fiction” of Sagredo’s objection, the power that such skepticism had at that time, that Galileo is able to circumvent it. Only through a direct recognition of this

fiction can a different kind of fabrication and fiction, a specifically “scientific fiction” (Galileo’s apparatus) be constructed, in order to contest the arbitrary, abstract fiction of skepticism or relativism. But what does all this have to do with cause and effect? Is this to suggest that cause and effects are merely “fictions”?

Galileo’s apparatus is designed to focus on how bodies fall, how quickly balls roll down inclined planes, how they move across a table, how they fall to the floor. He does not ask “why” they do so, as this would return him to the metaphysical and theological problems that bewitch Sagredo and his ilk, especially in terms of a prior, abstract cause explaining “why” all bodies fell in predictable ways. ‘The scientific “how” thus has no other a priori limits than those of the questions that, rightly or wrongly, are recognized as scientific. The “why,” in this staging, has no autonomous formulation [...] it must first learn from the “how” what it is authorized to ask’ (Stengers, *Invention* 82). Questions about “why” lead us to the metaphysical-theological concept of cause which is to be sharply differentiated from the more limited scientific interest in what happens and *how* it happens. This is not to suggest that questions of cause and effect have simply disappeared, but they have been transformed within Galileo’s apparatus.

The instantaneous velocity of a falling body is defined as the “effect” of its past, judged from a determinate point of view: tell me what height you have fallen from. And it is also the “cause” of a future, judged from an equally determinate point of view: I’ll tell you how high you will be able to climb.’ (Stengers, *Cosmopolitics* 104)

In the case of a pendulum, the height it will achieve after its first swing is “caused” by its initial height. So, its second height is an “effect” of its past. Cause and effect, in this instance, are reciprocal. As a result, ‘not only does cause provide the true measure of effect, but the measurement is reversible’ (Stengers, *Cosmopolitics* 106). The use of scare quotes by Stengers should alert us to the fact that this is not the discovery of the “true” or metaphysical definition of “cause” and “effect”— it is a very specific case. What is remarkable is the success of Galileo’s apparatus in accounting for such causes and effects. His procedure has become the model of “good” science, in that it requires no more than itself to express its point. Even though it is a construction, a fabrication, a fiction even, it is not mere speculation, imagining or idle theorizing of an individual mind.

The reading of Stengers' account provided so far does not constitute a general theory of cause or causation. It is very specifically related to the velocity of falling bodies to what we now call mechanics (or dynamics) - a subset of physics. Within this field, there is a reciprocity of cause and effect but there is no notion of compulsion or determinism in this relation. That particular body did not have to fall at that particular moment, and certainly not from any specific height. But once it does, its effect is guaranteed.

A Question of Faith

As has been seen, according to Whitehead, what science inherited from medievalism was 'the inexpugnable belief that every detailed occurrence can be correlated with its antecedents in a perfectly definite manner' (Whitehead, *Science* 15). In the medieval era, this belief was guaranteed by the rationality of a specific kind of God who supervised these occurrences and their regularities. Modern sciences laid emphasis on the regularities, the ability to correlate occurrences with antecedents in a rational manner. For this to be possible, there must be genuine regularity in the world. It is this regularity which would become called "the order of nature". Nature is not capricious, it displays the same characteristics, under the same conditions, repeatedly, endlessly. 'This remorseless inevitableness is what pervades scientific thought. The laws of physics are the decrees of fate' (Whitehead, *Science* 13). The next step is to move from fate to faith.

Whitehead takes his notion of fate from certain aspects of Greek thought which the West inherited. It is a 'vision of fate, remorseless and indifferent, urging a tragic incident to its inevitable issue, is the vision possessed by science. Fate in Greek Tragedy becomes the order of nature in modern thought' (Whitehead, *Science* 10); remembering that 'the essence of tragedy is not unhappiness. It resides in the solemnity of the remorseless working of things' (Whitehead, *Science* 13). Whitehead is careful not to overstate his case. He does not assert that individual scientists directly inherited this concept of fate (Whitehead, *Science* 14) and he is clear that he is 'not talking of the explicit beliefs of a few individuals' (Whitehead, *Science* 16). Instead, he is outlining a certain 'tone of thought and not a mere creed of words' (Whitehead, *Science* 16).

This tone of thought, as just stated, did not come directly from the knowledge of Greek literature but passed through the specific theology of the medieval epoch. It

is here that theological element arose, or took on a new shape. The faith of modern science is that the world will remain the same, that there is an order to nature. This specific concept of an order of nature relies on the Greek conception of fate. In this sense: modern science has a faith in fate. 'My explanation is that the faith in the possibility of science, generated antecedently to the development of modern scientific theory, is an unconscious derivative from medieval theology' (Whitehead, *Science* 16). This faith in fate 'is the motive power of research:- that there is a secret, a secret which can be unveiled' (Whitehead, *Science* 15).

Whitehead's account is a general one, it aims to sweep us up in its argument, to lead us to reconsider our understanding of science, to approach the problem in a new way. He asks us to consider the role of fate and faith in its origin and in its legacy, without giving up on its capacity to tell us more about the world. Stengers would not disagree with such an approach but she would, perhaps, add that we need to pay attention to the details, to what actually happened. Her reading of Galileo presents not only the details of Galileo's construction, but a description of the construction of his faith; a faith that the world will do what is required of it, it will provide the consistent falling and acceleration of bodies. Without this faith he would not have been drawn to construct, redesign, refine his apparatus. One upshot of his faith is a re-placement of cause and effect. These are now distributed; they act as counter-balances. Moreover, cause and effect become located in a specifically constructed arena in the world and are divorced from questions of "why?". Galileo's concern is not why the bodies fall at regular rates; it is Leibniz and Newton who will take up this question.

What Galileo and Stengers give us is an utter refusal of the metaphysical concept of cause which predominated in the "inflexible rationality" of medievalism. Science and scientists may well be interested in causes, but not in "cause" as an abstract, metaphysical concept, which can be elaborated prior to a detailed investigation of the world. This may seem like a small point but it is an important one which is often overlooked by both science and philosophy.

As a result, cause has a somewhat confused status. Stengers cites Russell to clarify one element of this argument: 'All philosophers, of every school imagine that causality is one of the fundamental axioms or postulates of science, yet, oddly enough, in advanced sciences such as gravitational astronomy, the word "cause" never occurs' (Russell cited in Stengers, *Cosmopolitics* 122). This is because,

following Galileo, science became interested in mapping the details of interrelations, such as those between gas molecules in a pressurized container, between planets orbiting a distant sun. Such investigations preclude (or should preclude) any conception of a cause beyond the instances which can be found in these interrelations. Likewise, social science has moved beyond direct causes and has placed its faith in correlations between variables which, apparently like those of science, can be treated as independents (age, gender, ethnicity, class, etc.). I will return to a discussion of social science in terms of cause, correlation and faith toward the end of this piece.

Nevertheless, the problems of philosophy are different to those of science or social science. Just because science has, for good reason, rejected metaphysical conceptions of cause this does not mean that a metaphysical conception of cause is not required within philosophy. We live in a world in which we experience causes (matches causing fires, cars causing crashes). What are we to make of these? Are they only illusions, human fabrications designed to make sense of the otherwise remorseless, meaningless, unfolding regularities in which scientists have placed their faith? To respond to such questions, the following section will address Whitehead's philosophical rendering of cause. The discussion should not be taken simply as *the* solution to the problem of cause. My aim is, rather, to recast the problem. A crucial element of Whitehead's account is that much of the muddle over the concept of cause comes from a misrecognition of its very status. Although he makes his point in an understated, almost quiet manner, Whitehead is asking us to radically rethink how we have inherited a one-sided, incomplete concept of cause.

From Causation to Conformation: On Causal Efficacy

Some of our experiences of the world involve experiences of things happening, and of some these happenings produce change. Whitehead maintains that philosophers have all too readily subsumed all such experiences under a specific and pre-formed concept of cause. It is this specific concept that Whitehead wants to challenge, not the concept of causation itself. For Whitehead, causation is not mysterious: 'The notion of causation arose because mankind [sic] lives amid experiences in the mode of causal efficacy' (Whitehead, *Process* 175). "Causal efficacy" signals one aspect of Whitehead's reformed approach to cause. The use of

the term “efficacy” shows that he wants to retain what the concept of “efficient causation” was hinting at, without being constrained by it.

Whitehead balances this notion of “causal efficacy” by introducing another term, that of “presentational immediacy” which, as its name suggests, is concerned with what is immediately present. Other philosophers might refer to this in terms of the sense-data of our immediate experience: the colours, sounds, lights, smells, roughness which make the world, and our experience of it, so vivid. ‘We open our eyes and our other sense-organs; we then survey the contemporary world decorated with sights, and sounds’ (Whitehead, *Process* 174). The nub of Whitehead’s argument is that, when thinking about cause, philosophers have focused on presentational immediacy and have ignored the importance of causal efficacy. In his understated way, Whitehead is making the bold claim that philosophy has missed the point with regard to causation by considering only half the problem. ‘Philosophers have disdained the information about the universe obtained through their visceral feelings, and have concentrated on visual feelings’ (Whitehead, *Process* 121). As Meyer puts it, ‘philosophy has only considered the “visual” at the expense of the “visceral”’ (Meyer, “Introduction” 19). The problem arises when the visual, when presentational immediacy, is taken as the only mode by which we gain information about the world as it reduces the problem of cause to the realm of sense-perception.

This has both exaggerated and misrepresented the issue. According to Whitehead, philosophers and scientists who have followed Hume and engaged in debates over whether we “see” causes in the world have missed the point. We will never solve the problem of cause by trying to impute or infer causes which supposedly lie behind what we can see or observe, be it in everyday life, beyond the regularities we observe, or lying behind the data that we have generated. Whitehead’s response to Hume’s claim that causes are not disclosed in sense-perception, that they are “unknown”, borders on the jocular:

If Hume had stopped to investigate the alternative causes for the occurrence of visual sensations - for example, eye-sight, or excessive consumption of alcohol - he might have hesitated in his profession of ignorance. If the causes be indeed unknown, it is absurd to bother about eye-sight and intoxication. The reason for the existence of oculists and prohibitionists is that various causes *are* known. (Whitehead, *Process* 171).

Causes are known. We live in a world in which cars crash into each other, and we attribute blame (and financial reparation) by establishing who or what caused the accident. Human activity is causing global warming. Drinking alcohol makes you drunk (it causes changes in the nervous system, etc.). It is the abstract, prior, metaphysical concept of cause that is problematic. This is why science rejected it. However, modern science has found it difficult to “replace” this concept of cause, as to do so with any *a priori* concept of cause would be to return to the metaphysics, the “inflexible rationality” whose rejection was a cornerstone of the birth of modern science (as has been seen in Whitehead’s general account and Stengers’ specific analysis of Galileo). Whitehead invokes “causal efficacy” as one way of developing a philosophical account of cause which is not tainted by the inflexible rationality of medieval metaphysics. But, what exactly is “causal efficacy”?

Causal efficacy provides information about location, and the relation of a body to the rest of the world. Our body is a specific locale which endures and relates to other items in the world. Causal efficacy involves the sense of the move from the past to the present. This is why it is tied up with causation. If causation really were situated only within the realm of presentational immediacy, then we might see apparent superficial changes of colour, shape, sound or taste. But this information, and our experience of the world, would be very limited. We would know little about where these and would lack any sense of continuity, location, the past, present and future. We would be stuck in an ever-shifting present with no clue as to why things were changing. It is only because there is the heavy, slower, enduring realm of transmission of feeling which constitutes causal efficacy that we can ever experience or talk of one event following, producing or causing another. For example, we may see a bright patch of red moving quickly and getting louder. We only know to jump out of the way of the approaching red car because our body residing in the realm of causal efficacy, provides a context for this data, and the ability to get out of the way.

The concept of causal efficacy enables Whitehead to state that: ‘We are in the world and the world is in us’ (Modes 227); and to talk ‘of our general sense of existence, as one item among others, in an efficacious actual world’ (Whitehead, *Process* 178)’. Importantly: ‘Causal efficacy is the hand of the settled past in the formation of the present’ (Whitehead, *Symbolism* 50). This mention of the past and its relation to the present is important. For, when Whitehead is talking of causation, he is also talking of how it is possible to move from one state of affairs to another. If

there were a disjunction or separation between these, there would be no possibility of a spatial or temporal passage from the past to the present. Thus, for Whitehead, causation must always be considered in terms of what he terms “conformation”.

When something occurs it arises from something which precedes it. Whitehead takes this a step further and states that it must also recognize that which comes before. This is one role of “causal efficacy”: ‘Thus the causal efficacy *from* the past is at least one factor giving our presentational immediacy *in* the present. The *how* of our present experience must conform to the *what* of the past in us’ (Whitehead, *Symbolism* 58). One fact, event or occasion does not simply follow from or produce another. “Facts” are not neutral, even though they constitute *what* has happened, as they always occur in a certain way, they always contain a “how” – they happen quickly or slowly, for example. Such a “how” is not purely abstract, it is integral to the happening and to what can follow. This “how” does not constitute a metaphysical “why”. The relation of the “how” of the past to the present is what Whitehead calls “conformation”. The present must form itself *with* what has happened. Hence to *con*-form, to “form with”. ‘The past consists of the community of settled acts which, through their objectification in the present act, establish the conditions to which that act must conform’ (Whitehead, *Symbolism* 36).²

As Stengers makes clear, in both her close reading of Whitehead (*Thinking*) and throughout her work, we need to pay more attention, to be more specific with what problem we are dealing with. ‘Whatever our many ways to access what we call reality, they are all passionate as they all imply learning how to pay due attention, and accessing metaphysical reality is no different’ (Stengers, *Speculative* 210).

Metaphysics requires a metaphysical response. This applies to the concept of cause, and especially to that of final cause, to what draws us on, to that which is invoked by the very word “faith”. I have not, however, offered a purely metaphysical account or response. In one sense, it would have been “easy” for me to have offered Whitehead’s more metaphysical account of final causation in terms of the “subjective aim” which accompanies, indeed helps define, the specific coming to be of any actual entity (see, for example, *Process* 19). Such an argument might have been

² It should be noted that conformation and causal efficacy are only not concerned with the passage from the past to the present. They also involve the future. ‘The future is immanent in the present by reason of the fact that the present bears in its own essence the relationships which it will have to the future. It thereby includes in its own essence the necessities to which it must conform’ (Whitehead, *Adventures* 250).

technically “correct”, in that it would, hopefully, be an accurate rendition of what Whitehead “says”. It would not, however, have satisfied the requirements of the argument that I am trying to set out here, namely, that of the question of faith. Metaphysical questions are not sufficient in themselves to account for the role and status of cause in science, social science or the everyday world. A metaphysical concept, on its own, does not necessarily draw us on.

Conclusion - Some thoughts on the Faith of the Social Sciences

Stengers does not often engage with social science and its concerns. It is not a problem which interests her as much as other problems do. Her occasional comments are, however, insightful. For example, in her comparison of physics, social science (in this case, economics) and the problem of cause, Stengers comments on the apparent “disappearance” of cause and effect, as seemingly enabled by Lagrangian equations:

This gave birth to the idea, so often advanced, that physics, the model of science, promulgates laws that ignore causality. The theoreticians of the social sciences, and economics in particular, who must constantly remind us that the correlations they establish cannot be compared to “causes” often use the example of rational mechanics to deny that, in doing so, they are giving up anything at all. (Stengers, *Cosmopolitics* 121-2).

The concerns of science and philosophy have been addressed throughout this piece. For the remainder, I will focus on social science. This is a notoriously difficult field to define, to analyse or speak for as a whole. However, I will use the phrase “social science” in the manner suggested by Savransky where he describes their commonality in terms of ‘a historically situated *attitude*’ (*Relevance* 15). This bears some similarities to Foucault’s argument (*Order*) that the social sciences are constituted by those specific techniques, ways of seeing, thinking and reading, that developed in the 18th and 19th century and which formed “man” as both the subject and object of possible knowledges.

As discussed previously, science has a specific relationship to the concept of cause, which arises from its direct rejection of elements of a specific medieval theological context from which it was born. In practice, many scientists may refer to

causes or causal mechanisms in an ad hoc way, but this arises from their faith in regularity, not their advocacy of an abstract, prior metaphysical concept of cause. The same cannot be said of social science which has its own tortuous history. Although some social scientists, such as those interested in “regression analysis” would want to invoke some notion of causation,³ they would recoil from the charge of advocating direct causation with its associated taint of determinism and teleology.

The notion of direct causation, where one cause can be isolated and used both to explain and predict the present and future of society, has been abandoned (except by some diehards). This would be to resort to calling upon crude mechanisms beyond the wit of humans, which nevertheless explain the behaviour of such humans. This is, in fact, the heart of Latour’s critique of much sociology; that it indulges in a double-think, relying upon direct causal objects (such as class and gender) to shore up its explanations while both denying that it believes in such objects and disallowing others from so doing (see, for example, Latour, *Matters*). My point is not the same as that of Latour. The question which interests me is whether social scientists in rejecting cause have nevertheless, and like their natural science counterparts, retained a concept of faith. Science has faith in the order of nature. This faith was partly constituted by its rejection of a metaphysical concept of cause. Social science also rejected a metaphysical conception of cause, but in what did it place its faith?

It might appear that social science has faith that things will change. As a creature of modernity, the specific *attitude* of social science is premised not on the remorseless unfolding of events, as is the case with the order of nature. Its attitude is predicated on the changing character of human groups, societies, institutions. Often this changeability is rendered in terms of the “historical” and this is, perhaps, one reason for the endurance of the triumvirate of Marx, Durkheim and Weber (in terms of, for example, “historical materialism”, the “historical development of ever more complex forms of the division of labour”, or the “historical spread of instrumental rationality”). It is, however, important not to reduce what might be termed “changeability” to some simplistic notion of the historical, historiography or historicism. It is more a matter of the very possibility of change, an attitude which can

³ See, for example, (Morgan and Winship, *Counterfactuals*; Best and Wolf, *Handbook*; Rubin and Imbens, *Inference*) and even a paper titled “Do UN Interventions Cause Peace? Using Matching to Improve Causal Inference” (Gilligan and Sergenti “Interventions”).

be found at the heart of feminism and queer theory, and more. Is it possible to argue that changeability constitutes, or should constitute the faith of social science? Stengers would probably warn us that such a simple solution is both unlikely and dangerous. To put it bluntly, just because science has a faith in the order of nature does not mean that social science should seek to outline a faith which mirrors, yet differs from, the faith of science. This would be to repeat the labyrinthine arguments about the extent to which the natural sciences share an epistemology (or not), or have discrete ontological bases.

As Stengers makes clear throughout her work, the misrecognition of the origin of an abstraction is not only liable to vitiate its originality, it leads to an abuse of its power (*Cosmopolitics* 126-8). In the case of physics, this means that it claims more than it should for its field of inquiry. The ways that social science has traditionally treated the theories and models which it has developed to account for the changes supposedly witnessed in modernity have tended to become divorced from their original locations, and been redeployed across the “social field” without sufficient attention being paid to their specificity.⁴ In the case of social science it is liable to render its abstractions if not irrelevant, then less able to convince. For example, the following abstractions are famous, to social scientists are least: alienation, anomie, hegemony, strain theory, standpoint epistemology. All of these were hard won abstractions, developed in specific milieux to respond to different problems. Marx carved out alienation from the remnants of Hegel to outline the condition of workers in early capitalism; Durkheim sought to account for the ways in which solidarity could both be produced and fail in newly developed industrialized cities and societies; Merton described the “alternative” means chosen by “deviants” to fulfil the cultural goals of the novel phenomenon of a consumer society; feminists expanded traditional notions of epistemology by insisting on a recognition of the societal location of knowledge and the knower. However, it is the concept of hegemony which is the most telling for the argument that I am trying to make.

Gramsci conjured the concept of hegemony to portray the manner in which capitalism made concession to localized cultural and historical elements in order to consolidate and extend its reach throughout the cultural, societal, economic, political, religious aspects of society. Yet, this concept is itself, inherently “local”; a response

⁴ I am grateful to Martin Savransky for pointing this out to me and his other helpful comments on the first draft of this article.

by Gramsci to the specificity of the economic, cultural and political field of early 20th century Italy. There is a danger that the terms “hegemony” and “hegemonic” become dislocated from their immediate locale, without due care and attention, and are applied, at will, to any situation without the requisite work being done. This flies in the face (and faith!) of the very radicality of the concept that Gramsci worked so hard to construct. Social science has put its faith in its abstractions without recognizing or admitting the details of their construction. It has been assumed that they are equally applicable, wherever “the social” can be found.

Stengers and Whitehead are clear that metaphysics has an important role, but the occasions on when its arguments are relevant must be recognized. Metaphysics involves adopting a specific standpoint,⁵ one which forgets the ‘peculiar problems of modern science’ so that we ‘put ourselves at the standpoint of a dispassionate consideration of the nature of things, antecedently to any special investigation into their details’ (Whitehead, *Science* 195). Taken in this sense, social science’s misplaced faith in its unchanging concepts which, paradoxically, are supposed to be able to render the very changeability of the world, have led it to become metaphysical. It has prioritized its concepts over the details of the world.

The position I have just sketched out is somewhat pessimistic – social science has again failed; it has misplaced its faith, and has misrecognized the status of its abstractions. Pessimism may well be a hallmark of much social science, with its tireless critique, but it is certainly not an accurate description of the work and approach of Stengers and Whitehead, whose work is laced with generosity and humour. With this in mind, I will finish with, if not an optimistic stance, then at least an openness to the future.

If social science is concerned with the changeable, it should be able to indicate something about such changes (without presupposing that it will uncover either the reason or *the* cause of such changes). It is here, perhaps, that Whitehead can change our approach. His challenge to traditional philosophical conceptions of causation argues that these have focused on presentational immediacy alone, and have missed out on “causal efficacy”. This leads to the question of how to approach questions of causal efficacy, and Whitehead’s response involves what he calls

⁵ Melanie Seghal has discussed this more fully in her chapter ‘A Situated Metaphysics: Things, History, and Pragmatic Speculation in A.N. Whitehead’.

“conformation”. Could it be that social science has over-emphasized changeability at the expense of a recognition not of conformity but “conformation”?

It might be possible to retain and cultivate the sense that social science believes that things will change, that both us and the world will be different. Could we somehow use this tentative belief to cultivate faith? Not “a” faith in the singular, as if there were one identifiable “thing” which could draw us all forward. Rather, just the idea of “faith” as something that is possible. As Stengers puts it: ‘faith is what is required against the “all is vanity” opium of scepticism, but it should be underlined that it does not offer any of the assurances that would silence the sceptic’ (Stengers, *William* 16). Rather than reject a metaphysical concept of cause (rightly) simply to replace it with a horror of any direct cause, but a tepid faith in the power of correlation or even the quasi relativism induced by seemingly ever-present sceptics, could social scientists not take something from Whitehead’s ideas of causation in terms of causal efficacy and conformation?

By paying attention to modes of conformation, social science could admit an interrelation of how something changes with what actually changes. Causation will be involved, but not in the limited and limiting terms of “efficient causation”. By paying more attention, social science might come to realise that sometimes causes matter and sometimes they do not. Moreover, a recognition that the future imbues the present, in that the present articulates what is possible and it itself articulated by the possibilities that it sketches out, would enable a realization that we are all being drawn forward without falling back into an over-arching teleology, where we already know where we are going. By ignoring “conformation”, social science has developed a peculiarly unhistorical history; by recognizing the interrelations of conformation and causation, it might be possible develop a sense of faith in the future, balanced by a recognition of the role of causation in the present.

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