

ARGUING FOR THE PHILOSOPHY OF POLITICAL SCIENCE

by

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DEDICATION

I would like to dedicate this work to my mother because without her support I would never have been able to get this far.

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I would like to acknowledge the various people who have helped to shape this project and turn it into what it is now. First, I want to thank my Supervisory Committee, Steward Gardner, Stephen Crowley, and Charles Hunt. Next, I would like to thank a couple of other professors who helped me throughout the different versions of this project, they are Michael Robinson and Rob Harbaugh.

ABSTRACT

While there are many working scientists who engage in things like theory building and empirical testing, there has also been a group of scientists who sought to better understand the philosophy behind science. This philosophical study of science as a project is referred to as the philosophy of science and there are different sub-fields for each of the natural and social sciences, except for political science. This lack of an explicit sub-field dedicated to reflecting on our philosophy of science, i.e., our beliefs, values, methods, etc., has caused this knowledge to become tacit within our community. Because the knowledge of our philosophy of science is now tacit, we as a community are hindered in our capacity to engage in critical self-reflection which is an important part of any scientific endeavor. However, what has been is not what need be moving forward, we can still turn this tacit knowledge into formal knowledge which will then allow us to grow as a community. This thesis will demonstrate a few of the ways in which our knowledge of the philosophy of our science has become tacit, and why this is indeed a bad thing. The specific topic areas addressed are the misunderstandings of the natural sciences in our community, the process of categorization, and our goals as a scientific tradition. This is in service of the true goal of this thesis project, which is to give a proper augment for the creation of the philosophy of political science as an explicit sub-field.

Keywords: Social Science, Political Science, Methodology

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LIST OF ABBREVIATIONS

EVL Exit, voice, and loyalty theory

CHAPTER ONE: INTRODUCTION

Science, as an enterprise, is highly chaotic because it covers such a wide range of materials, from black holes to amoebas. Though this doesn't mean that the individual sciences are any less hectic, as any practicing scientist, in any field will tell you, each field is comprised of sub-fields that have their own approaches, beliefs, etc. While this atmosphere of chaos is pretty much baked into every science, there may be times when it can become a bit much for the scientists, and this is where the philosophy of science comes in. In general, the philosophies of science and social science seek to examine broad concepts of science such as, what is a science or social science, is the knowledge produced by science better than other types of knowledge, etc. However, there are also various sub-fields of philosophy of science, each existing to examine what I refer to as the foundational paradigm of a specific science. Foundational paradigms are similar in some respects to the notion of a paradigm as it is used in our contemporary society. The contemporary view of a paradigm is that it is specific methods, beliefs, and standards of a science. A foundational paradigm on the other hand examines some of the deeper parts of a scientific enterprise by examining things like value beliefs, metaphysical presuppositions, and so on. However, a foundation paradigm is also a term that can encompass the contemporary view of what a paradigm is, as such moving forward, I will utilize my term of foundational paradigm.

There are explicit sub-fields of philosophy of science for every major branch of the natural and the social sciences except for political science. Now, this doesn't mean

that there isn't work being done in political science that might be classified as being a contribution to the philosophy of political science, nor does it mean that there isn't some kind of informal field of philosophy of political science. However, what it does mean is that there is no explicit field of study, there are no journals, no symposiums, no conferences, in short, there is no institutional acceptance of this field. Why does this matter? While an informal philosophy of political science is good, as something is better than nothing, without it having formal recognition it means that current work is often mislabeled and incorrectly assessed. Also, the lack of institutional recognition of the importance of this type of research can stop us as a scientific community from engaging in an important level of self-reflection as well as stop us from engaging in important debates. This lack of critical self-reflection has caused many in our scientific community to simply engage in practices without fully understanding why they do what they do, how these practices work, and why they are supposed to work.

It is because of this that I argue that what political studies needs right now is a new sub-field that can be simply called the philosophy of political science. The philosophy of political science could be described as simply the philosophical study of what practicing political scientists do, why they do it, and how. This sub-field would help us gain a much more thorough understanding of the foundational paradigm behind political science as well as open a space for us to engage in discussions and debates that we are unable to as of now. In the following sections, I will examine three specific topic areas, the first of which is the misunderstandings of the natural sciences held by political science. In this section, I will demonstrate that our current foundational paradigm was built around a view of the natural sciences and their foundational paradigms that is

incorrect in many ways and that we ought to engage more critically with what we take from the natural sciences. The second topic I will discuss are practices of categorization and classification. Here I will discuss what these practices are and why we utilize them, before offering an alternative approach. The final topic is the goals of our scientific tradition, and it is here that I will show our current foundational paradigm is one of problem and puzzle-solving. From here I will establish some of the issues with these traditions before offering a potential alternative option. I believe that these topics and the discussions had about each of them will be able to demonstrate that our current foundational paradigm is not inherently perfect and that there are problems with it. But more importantly, I believe that each discussion will show that a new sub-field will have a lot of work to do and that there are plenty of debates to be had about our foundational paradigm. The three topics picked are just some of the many potential avenues for exploration. However, first I will start by looking at what little work has been done in the discussion of whether we ought to establish the explicit sub-field of philosophy of political science.

CHAPTER TWO: LITERATURE REVIEW

Putting together a literature review on the idea of establishing the explicit sub-field of philosophy of political science is a bit difficult. This is due to there being currently being no explicit sub-field, thus, the term philosophy of political science is never really used. Now, this isn't to say that there has been no work on discussions that could be classified as being philosophy of political science, but that the work is done in an informal manner because there is no institutional recognition. Though it is worth noting that any work done which might be seen as being a part of the philosophy of political science, often gets lost in a sea of political philosophy and political theory. The reason being is that these sub-fields are where we have relegated nearly all philosophical discussions about our domain and science. However, political theory and political philosophy end up covering a much wider range of topics than the philosophy of political science would as a discipline. An example of how these three are different can be seen by looking at the general topic of democracy. While political philosophy may ask questions about what a democracy is and political theory might ask about the institutions comprising a democracy, a philosophy of political science might ask about why we classify states as democracies the way we do. Without having a separate field of research any work done is forced to find a home in a place that it doesn't fit into very well which can degrade the content and make it hard to find, which is one of the major reasons we need an explicit sub-field. That being said there is actually some research that can be

brought up, these works are Bruno Verbeek and Lee McIntyre (2017), and Pozzani (2021).

The work from Bruno Verbeek and Lee McIntyre that we will be examining is their contribution to the *Routledge Companion to the philosophy of Social Science* (2017). This work of Verbeek and McIntyre seeks to understand not only why the sub-field of the philosophy of political science is currently non-existent, but also why it is important to establish it. At the start of their contribution, Verbeek and McIntyre examine the question of why the philosophy of political science doesn't exist. Though in their discussion they quickly realize that this isn't the right question to be asking because, as I mentioned in the introduction, there is indeed work being done that we can classify as being philosophy of political science, it just isn't explicitly called that. Verbeek and McIntyre claim that most of this work is currently done under the labels of political theory or political philosophy and as such it can get be a bit hard to find. This leads them to argue the same thing that I do in the previous paragraph, that there is a big difference between political theory, political philosophy, and the philosophy of political science. From here they then go on to examine a couple of areas that they feel can offer a bit of evidence for their claims.

One of the biggest pieces of connective tissue that exists between this article and my own ideas comes down to our agreement that an explicit sub-field is necessary. Verbeek and McIntyre, argue we ought to build this explicit sub-field to help bring the current work together under a proper banner. This will also help to bring more interest to the topic and help the field grow. Their argument ends up pulling from the history of the philosophy of chemistry in which they are able to demonstrate that the situation faced by

contemporary political science is similar to the situation faced by chemistry in the 90s. For a very long-time chemistry didn't have its own explicit sub-field to study its foundational paradigm and thus there was only a very small group of chemists who were engaged in the enterprise. However, in 1997 this changed drastically as not only did the field explode onto the scene, but it also brought with it a huge wave of interest in the topic. This resulted in the creation of journals, conferences, symposiums, and much more which then gave further rise to new opportunities for researchers. Thus, just as there were very clear institutional benefits gained from the establishment of the philosophy of chemistry, these same benefits could very likely be seen if we were to establish a philosophy of political science.

The final piece of literature that I will be examining here is an article by Gianluca Pozzoni which is in many ways a response to Verbeek and McIntyre (2017). In this article Pozzoni (2021) sets out to offer their own account for why there is no philosophy of political science. While Verbeek and McIntyre argue that a philosophy of political science exists, Pozzoni believes that we don't really have a cohesive philosophy of political science because there is no clear line of demarcation between what is and isn't political science. By looking at the history of political science Pozzoni is able to show that our discipline has changed quite a bit over the years which makes it nigh impossible to create a temporally stable definition of political science. Since there can't be a stable definition of political science, Pozzoni argues there also can't be a proper and stable definition of the philosophy of political science. They end their article by advocating against the establishment of an explicit sub-field of philosophy of political science and argue that we ought to just unify the philosophy of the social sciences.

The main part of Pozzoni's work that I think is important for my project is his conclusion section. Specifically, I want to address his final argument that we ought to create a unified philosophy of social science instead of a bunch of sub-fields. This means we shouldn't establish the explicit sub-field of philosophy of political science. There are two main areas of disagreement here between Pozzoni and me, the first is that he argues for a unified view of social science while I do not. Pozzoni's argument is rooted in his belief that a non-unified science serves mostly a pragmatic purpose, which they argue is not a good enough reason for its usage, though I would argue the opposite, it is Pozzoni's view that is the more pragmatic one. This is because it is a lot easier to simply talk about an abstract term like 'social science' that doesn't have a direct reference for its definition, that is to say, we can't define social science without referring to the social sciences. Pozzoni's view of science ignores the complex reality of what working scientists do and thus I would argue that his view is unable to philosophically interrogate the individual sciences the way he thinks it can. While the social sciences may study similar things, the way each one goes about examining their domain is different and thus deserves its own attention.

This then leads us to the second area of disagreement between Pozzoni and me, which is in our epistemological beliefs. Pozzoni holds a view that social knowledge, and knowledge in general, ought to be representative of the 'real world', which is why he thinks we ought to establish a unified philosophy of social science because the social world is chaotic and unable to be compartmentalized. However, this view is quite different from my own, which can be referred to as an absurdist view. Absurdism is a metaphysical belief system that recognizes that any system of beliefs falls victim to one

of two paradoxes. We can state that all models are invalid, which then logically causes problems because even this model becomes invalid. The other claim we can make is that only our model is correct, which then causes us to have to agree or disagree with a whole host of potentials. Thus, any attempt to build a system of beliefs that won't fall victim to these paradoxes is an exercise in futility. This is something that absurdism recognizes, there is no one answer to the question of metaphysics, and this can be extrapolated outwards to the realm of ontology. My specific ontological view is that true knowledge, knowledge that is irrefutable to the individual, can only come from one's own immediate experience. I know that trees exist because I touch them, I know my cat is real because I pet him, I do not know if purgatory exists though because I have never been nor even know what a purgatory would look like. Because of this, any kind of knowledge that is forced to move beyond my own experience ends up as constructed knowledge. I would argue that the concept of whether science can be viewed in a unitary fashion or not is one such piece of constructed knowledge. I know through experience that the entire world is highly complex, and this complexity means that any attempt to understand it either by looking only at its individual parts or the whole, is pointless. The world is a continuous mixture of individual parts which comprise the whole, however, one cannot view the whole without looking at the parts. This is as true for the world as it is for science. It is because of this that I would argue that if Pozzoni wishes for the social sciences to build knowledge that is reflective of 'the world', as in the physical world devoid of human experience, they ought to be calling from the roofs for each social science to have its own philosophy of science.

Overall, I find there to be a lot of agreement between myself and Verbeek and McIntyre, especially their points about the benefits that can come from the creation of a new sub-field, though the same isn't true for myself and Pozzoni. I also found the specific topic areas that they each investigated to be interesting. I would argue that the topics covered by Verbeek and McIntyre, while not discussed here, are important for they demonstrate some more of the potential for this new sub-field. Not only could this new sub-field be able to examine the topics covered in this project, which are more foundational topics, but also very specific ones such as the topics brought up by Verbeek and McIntyre. However, I do not believe that the topics discussed by Pozzoni are as relevant to this project due to their being mostly historical discussions about our science, which are still relevant for a philosophy of political science sub-field, but not this project. The biggest thing that Verbeek and McIntyre and Pozzoni are able to demonstrate is that there is a debate going on, though it is a quiet one.

CHAPTER THREE: THE NEED FOR AN EXPLICIT SUB-FIELD

To start this section off I want to offer my own input to a question posed in the literature review, is there a philosophy of political science? I would argue that the answer is yes, just like Verbeek and McIntyre, political science does have an informal field that has done some work on examining the paradigms of political science. However, the work that has been done has yet to properly examine our overarching foundational paradigm. I argue that our foundational paradigm was built upon a model of the natural sciences which existed during a time when its foundational paradigm was taken for granted due to the continuous success it achieved.¹ This resulted in the political science community adopting a model of the foundational paradigms of the natural sciences that saw self-reflection as being unnecessary due to the level of success achieved. This continues today as political science doesn't truly engage in a critical discussion of its own foundational paradigm. The reason for this is that the knowledge of our foundational paradigm is tacit and not formal.

Tacit knowledge is a type of knowledge that was first named by Michael Polanyi, and it is defined as a type of knowledge people have but that cannot necessarily be codified or expressed (Polanyi 1966). A good example of this kind of knowledge is the knowledge one obtains from cooking, one cannot explain the exact reason for why they

¹ See the sub-section, misunderstanding the natural sciences and the philosophy of science, for more information.

do what they do in the kitchen, they simply act on their own insights. The opposite of tacit knowledge for Polanyi is formal knowledge which is knowledge that can be written, expressed, and easily transmitted. An example of formal knowledge is knowing the Capital of Italy is Rome. While this view is good, I would also like to make a bit of a change to Polanyi's definition of tacit knowledge. The reason I want to make this change is that I would argue that practicing political scientists know the foundational paradigm which drives their work, but this knowledge is tacit, just not in Polanyi's sense. Many political scientists can explain what the foundational paradigm requires them to do, but not why it requires this. This means that the knowledge held by the practitioners of political science is neither truly tacit nor formal but instead a mixture of both. This is also the case with the person who knows the Earth is not flat but not why. This shows that creating a clear line of demarcation between tacit and formal knowledge, such as the ability for the knowledge to be codified, isn't enough because people must also know *why* they know it.

Due to the knowledge of our foundational paradigm being mostly tacit in nature, we often end up missing, either passively or actively, a lot of the issues with our ideas. Yet this does not mean that issues do not exist, nor that there are no benefits to be derived from pointing them out, for it is only once we recognize that a problem exists that we can begin to work towards a solution. As such this paper will look at three different topics that I feel show some of the foundational work that can be done by an explicit philosophy of political science sub-field. This is not to say that this sub-field must examine issues such as these, as the discussions brought up by Verbeek and McIntyre are just as valid and important, but it is to say that there is a wide range of potential topics to be covered.

These discussions will also show that our current views and perspectives are not perfect, they must be examined critically, which is something that is best done by an explicit sub-field.

Each of the topic areas that have been picked serves an important purpose in this paper. The first topic examines some of the potential issues with our current understanding of the natural sciences and the philosophy of science, the second examines the way we view and engage in classification and categorization, and the final topic looks at the goals of our science. I have chosen these three because each one is present in our current foundational paradigm. There are no students majoring in political science today that will be able to get a degree without at least hearing these ideas in one or more of their classes. Beyond that, each of these topics is directly impacted by our current tacit foundational paradigm and the challenges I will raise will show why we need to create a space for these critical discussions where different views can be raised, and norms challenged. This is a space that can only be created by an explicit sub-field of philosophy of political science.

Misunderstanding the Natural Sciences and Their Foundational Paradigms

We as a scientific community hold various misunderstandings about the natural sciences and foundational paradigms of natural science. Now, this isn't any one person's fault, it is a larger societal issue that also impacts all of the social sciences. However, since our foundational paradigm is based on a view of the natural sciences and the philosophy of the natural sciences, we must be sure that we understand them. To help demonstrate the claim that we have based much of our foundational paradigm on the natural sciences, let us quickly examine our history as a science. The history of political

science shares a lot with the history of the other social sciences, especially in the main thinkers who helped to establish the basis of our contemporary foundational paradigm. These thinkers include people like Auguste Comte, Emile Durkheim, and Max Weber. One important aspect that ties these thinkers together is their view of positivism. Positivism is a philosophy of science that stresses the importance of empiricism and argues for the removal of metaphysics within science. Positivism, in the social sciences, was built around the goal of trying to make the social sciences more 'scientific' by mirroring the natural sciences. However, positivism wasn't simply accepted by the entire scientific community and there were debates over things like its epistemological beliefs. One of the groups that took the side of positivism ended up branching out and starting a new philosophy of science called logical positivism. Logical positivism was simply the logical evolution of positivism that sought to, in a sense, upgrade the doctrine to account for the newest discoveries in science. However, while this school of thought has essentially died out in the philosophy of science, it has continued to have major influences in our field.

While our foundational paradigm is indeed based on a view of the foundational paradigms of the natural sciences, what is rather odd is the way we have failed to understand the natural sciences and the philosophy of the natural sciences. Not only that but there has also been a lack of critical reflection on these ideas within political science. A good example of these mistakes can be seen in Francis Fukuyama's book *The End of History and the Last Man* (1992). This book has been widely discussed and criticized within our community, yet there has not been a single review that looked at his views of the natural sciences. This is odd because these views play a large part in his work and as

such help guide his overall argument. I would argue that the reason these views were not discussed is because they were very similar to the ones held by the rest of the community and because Fukuyama hit the right buzzwords, his views went largely ignored. This section will offer a quick and unique review of Fukuyama's work and demonstrate many of these misunderstandings. From there I will then go on to show that some of the views held by Fukuyama can be seen in our community now. These discussions will serve the larger goal of demonstrating that there are many more things that we ought to investigate within our foundational paradigm which we took from the natural sciences and that an explicit sub-field is the path I believe will serve us best.

Reviewing Fukuyama's, *The End of History*

There are many different criticisms and reviews that exist for Fukuyama's book, yet there are none that examine the claims he makes about science. While there are reviews of his usage of Hegel and history there are none that examined this key component to his line of thinking.² I would argue that the reason that little to no work has been done on discussing Fukuyama's misunderstandings is that for the political scientists reading his book, these ideas of science were also ones they held. This ties back into the notion that the current philosophy of political science is tacitly accepted by the members of the community. If this is indeed the case, then it is extremely important that we properly analyze Fukuyama's work.

If I were to summarize Fukuyama's view of science I would do so with one word, scientific. Scientism is a world view that holds that the methods, beliefs, and knowledge

² The only real piece of criticism one can find about this is done by Fukuyama himself in another one of his books, *Our Posthuman Future* (2002). In this second book, Fukuyama retracts the claim that history has ended because for this to happen modern science and technology would also have to come to an end.

of the natural sciences are inherently superior to other systems of knowledge that are outside natural science. It also argues that the methods used in the natural sciences are the best ones for use in other areas of science, thus other sciences must engage in quantitative and inductive reasoning. There are many different areas of his work that we could point to give evidence for this claim, though one of the best examples comes from the introduction of his book in which he states,

Modern natural science is a useful starting point because it is the only important social activity that by common consensus is both cumulative and directional, even if its ultimate impact on human happiness is ambiguous. The progressive conquest of nature made possible with the development of the scientific method in the sixteenth and seventeenth centuries has proceeded according to certain definite rules laid down not by man, but by nature and nature's laws. (Fukuyama 1992)

This quote shows that Fukuyama has a clear belief that the natural sciences stand in a unique position when compared to other human activities such as astrology. We can also see from this statement that Fukuyama harbors a reductive materialist view as well. Reductive materialism is a view of the world in which everything is reducible to physical processes. An example of this is the idea that human actions can be understood only if we reduce the phenomena down to things like biochemistry. An example of Fukuyama's materialist view is his ontological beliefs, that being, his views of knowledge, specifically scientific knowledge. Fukuyama argues that the results of science are not impacted by the individual scientists, they are perfect reflections of 'the word', which is the notion of a world devoid of human perception.³ Yet I would ask, is there actually support for his

³ Further on in this section I discuss his views in more detail and offer up evidence for this claim.

scientific view or is it more akin to any other metaphysical belief?⁴ While we could simply restate many of the post-modernist claims here to show the issues with his views, I believe that there is a different path available to us. As such, in order to answer this question, we will need to dissect Fukuyama's views in a bit more detail and go over them one by one. I have chosen to discuss three topics regarding his scientific attitude. They are scientific progress, scientific method, and scientific knowledge. I have chosen each of these topics because they are fundamental to his overall view, and thus, if they falter, so does the rest.

Let us begin this assessment of Fukuyama's scientific attitude by examining the arguments and discussions he has regarding scientific progress. Upon examination, we see that his ideas are a bit of a mishmash of views, most of which are highly uncritical. A good example is his view of historical determinism and its tying to science. Historical determinism is the notion that there is a predetermined set of historical outcomes and that they will play out in a rigid and mechanical way. This can be seen when he argues that science didn't progress by chance, nor could it have come from anywhere other than Europeans in the time it did. This argument is simply not good for a few reasons, one, it asserts a truth that is forever unknowable. One cannot know for sure if science had to progress the way it did, for I would argue that Buddhist cultures would have been as likely as Europeans to discover relativity had Einstein not done so, due to their beliefs about time which differ greatly from western European views. Another reason why this argument is not good can be seen through the work of Thomas Kuhn and his most famous

⁴ This question is not designed to demonize metaphysics but to show that his views are but one more metaphysical view in a sea of alternatives. This is because if we can find no real empirical evidence for his claim then it must resort to using metaphysical claims to justify itself.

work, *The Structure of Scientific Revolutions* (2012). Kuhn argues that science progresses in a revolutionary manner, this happens when the current normal science is, in a sense, overthrown. Normal science, for Kuhn, is the work done by most working scientists who are working around a shared paradigm. Over time a revolution can occur which will upend the entire paradigm and force the scientific community to undergo a sort of revolution in which a new science is produced. This process is not completely cumulative, because while the normal science is able to produce cumulative progress, the revolution ends up destroying this progress and forces a change to something new.

Now that we have gone over the issues with his historical, determinist views let us examine his specific claim in more detail, that scientific progress is a cumulative and directional affair. Fukuyama argues that science advances through an accumulation of scientific knowledge, all of it is useful for science and thus is thrown into a pile of knowledge to be used by various scientists. However, when we add the idea of there being a directional aspect to this progress, we see that, while all scientific knowledge is useful, it is really only the more current information that is most pertinent. This is due to the fact that a directional science doesn't need to go backward at all, thus older information can be helpful, but we shouldn't utilize it too much or else we might end up going backward. There are a couple of different issues with this view, one of which is this view doesn't work well when we look at the history of science. Einstein's revelation about physics was not made possible because he was forced to work within Newtonian physics, it was the opposite. Einstein was forced into utilizing a model of physics that was pre-Newton.

Having now gone over Fukuyama's views about scientific progress, let us now turn our heads towards examining his view of the scientific method. Fukuyama argues that in the sixteenth and seventeenth centuries philosophers such as Descartes and Bacon had discovered the scientific method, which then gives rise to modern natural science. It should be noted here that Fukuyama's language shows a clear connection between his view of historical determinism and the idea of the scientific method. For Fukuyama, this method is how science operates now and it is how science and rationality shall progress going forward. Yet even if we push aside the already stated metaphysical issues that come from his deterministic beliefs, we still run into other issues. The claim that a scientific method exists and that it came about in the sixteenth and seventeenth centuries is one that ignores the continuing evolution of the concept itself from the sixteenth and seventeenth centuries to today. While individuals like Descartes and Bacon had started the discussion of this method, its current form doesn't just come from them, it was a culmination of work done by individuals such as Karl Popper, philosophies of science such as logical positivism, and scientific institutions such as the Vienna circle who took these original ideas, modified them, and added to them. Another issue is that the very notion of there being a scientific method is non-empirical, for it asserts things like a view of science as a unified body, claims that are once again metaphysical because there is no way to prove this claim objectively correct or false. The final issue with this idea is that for a scientific method to exist it must assert very subjective claims that make the method nothing more than a representation of what the individual providing said method believes is most important in science. I say this is because the contemporary scientific method is a reduction of the methods of the various sciences. This method was built through a

process of finding what few similarities existed in the various fields and sub-fields of the natural sciences. These similarities are what supposedly connect all of the sciences together. However, there are many problems with this, one being that the line of demarcation built between what is and is not a science will have a big impact on the similarities established. Another issue is that the attributes which are removed from the comparison are highly subjective and thus any method arrived at is equally subjective.⁵

Now that we have gone over the first two topics let us move on to the third and final one, that being scientific knowledge. It is clear throughout his book that Fukuyama holds the results of science in extremely high regard. Once again, we can equate a lot of his views in this regard to his larger deterministic views. That being said I do want to examine his materialist views and how they impact his view of scientific knowledge. Fukuyama believes that scientific knowledge is objective and that it directly refers to ‘the world’ we reside in, this is the general materialist view. As Fukuyama states, “The scientific understanding of nature is neither cyclical nor random; mankind does not return periodically to the same state of ignorance, nor are the results of modern science subject to human caprice (Fukuyama 1992).” To state this another way, scientific knowledge is objective because it tells us about ‘the world’, which is just the idea of a world devoid of human experience and sense. Here I want to note that the notion that scientific knowledge is capable of referring to ‘the world’ is an ongoing debate that has no objectively right or wrong answer because both sides end up making metaphysical claims, i.e. claims which

⁵ It should be noted that the argument that the scientific method doesn’t exist isn’t a new one, it is one advocated by many philosophers of science and scientists, which I bring up not to show the validity of the overall argument, but to demonstrate that there is indeed a debate within the community, one that has largely ignored (Feyerabend 2010)(Kuhn 2012)(Bridgman 1955).

cannot be proven.⁶ The reason for this is because if we claim that our knowledge is reflective of something out in ‘the world’ we are required to get past issues like that of perception. As phenomenologists have pointed out, perception is a very tricky thing to properly understand because there is a lot that happens in this process. The mind is forced to interpret signals, and this process isn’t a cut and dry one, issues can and do arise in perception (Merleau-Ponty 2010). A good example of this can be seen in gestalt psychology, more specifically the rabbit and duck illusion. This illusion arises from a picture that can be seen as containing either a rabbit or a duck, what determines what the individual sees is how they perceive the picture. Some will only see a rabbit and others will only see a duck yet neither view is right nor wrong. For philosophers like Kant, this process of interpretation and its potential to go haywire makes it very difficult to make objective claims about the ‘real world’, i.e., the world devoid of human experience and sense. Instead, the claims that science makes are a mixture of what happens in our brains, all the interpretations and so on, and ‘the world’ (Kant 2016).

The three topics I have discussed are far from the only issues with Fukuyama’s work and his view of science. However, these topics do represent the point that Fukuyama’s views are, at minimum, problematic. One reason being is that there are some fundamental flaws with his understanding of the natural sciences and their foundational paradigms. These views shaped a large part of his book. Yet, this begs the question, why has there been no review of them before now? I would argue that no one spotted these

⁶ I would note that I do accept the metaphysical nature of the claim made. The statement is not made in the hopes of appearing metaphysically neutral but to show that there is no non-metaphysical answer to the question of whether scientific knowledge is objective or not.

issues because political scientists, then and now, hold very similar views, and equally problematic, views.

Reviewing the Beliefs of Contemporary Political Science

While pulling out parts of the foundational paradigm that Fukuyama uses was easy, the same can't be said for the rest of political science. This is due to our tacitly held foundational paradigm which results in our entire scientific community having a foundational paradigm but being unsure of what it is comprised of. This leads to there being an odd combination of beliefs and ideas that are spread throughout various textbooks. For example, while some political science textbooks go into some detail about things like the history behind empiricism and positivism, as is done in McNabb (2004), others do not go beyond the very idea of a scientific method, which is the case in Nau (2017) and Clark, Golder, and Golder (2019). Despite this issue, there are certain foundational beliefs that our community has established through a sort of common consensus which we can look at. The specific beliefs I will be talking about touch on the same topics that we examined within Fukuyama's work, the progress of science, the scientific method, and scientific knowledge.

Finding out what the contemporary field of political science holds as being the 'correct' answer to the question of 'how does science progress' is a bit hard because while the idea is talked about quite a bit, it isn't given the necessary attention. Often, we get passing references to philosophers of science like Thomas Kuhn and Karl Popper and maybe, if we are lucky, a glimpse at their views as well as their contributions. Our view is that science advances in a cumulative fashion, not in a cumulative and directional manner as argued by Fukuyama. To put it another way, science advances by putting all

its results in a sort of treasure chest. Over time we will fill the chest with more and more bits of knowledge, all of which are useful, so long as the knowledge in the chest is established through empirical methods. This treasure chest view is one that is espoused by McNabb (2004). In this work, McNabb argues that political scientists ultimately take the results of their research and throw them into what McNabb calls a “storehouse of knowledge” (McNabb 2004). This view makes a lot of sense if you believe that science ought to engage in empirical analysis. Thus, it makes sense that this view of science progressing in a cumulative fashion is held by most political scientists because our current paradigm is that of empiricism.

The claim that our paradigm is one of empiricism deserves a bit more attention and discussion. Empiricism, in this instance, refers to a philosophical concept which holds that things are truly only knowable or even justifiable if they are able to be experienced. We can see this all throughout our field, the biggest examples being the dominant view of quantitative methods having a superior position to other methods, and our usage of operationalization. When we examine our field, we see that regardless of the methods used in a piece of research nearly every piece of institutionally accepted work must always come back to one specific thing, empiricism. This is due to our current foundational paradigm holding explanation as being the major goal for our theories, thus they must resort to using empirical language and methods to make this happen (Verbeek & McIntyre 2016). Explanation is good at telling us how something happens, how is it that planes don't fall to the ground, how is it that evolution works, etc. But explanations can't necessarily tell us why things occur, why did this plane crash, why did this animal evolve the way it did, etc. To better understand why things happen we would have to shift

over towards trying to understand phenomena and not explain it. An example of trying to understand something and not just explain it can be seen in critical theory and post-modernism which seek to better understand why the world operates the way it does as well as explain how it occurred.

Now that we have gone over the dominant view of scientific progress within our community, let us now discuss the scientific method and its prevalence in contemporary political science. This is a very easy concept to pick out of the literature for nearly every introductory textbook has a section devoted to the scientific method (Clark, Golder, and Golder 2019) (Nau 2017) (McNabb 2004). Though it should be noted that while both Fukuyama and our community hold the scientific method in high regard, their views of the method differ. One major difference is the recognition within our current foundational paradigm that the method didn't just come from sixteenth and seventeenth-century philosophers. Our contemporary view recognizes the very important work done by groups like the logical positivists and individuals such as Karl Popper who introduced the notion of falsification into modern science. These groups took the work done by sixteenth and seventeenth-century philosophers and expanded their arguments and ideas. However, while we do accept that things like falsification are important to the method, we still end up teaching a multistep approach that fits well with Fukuyama's view. An example of this can be seen in Clark, Golder, and Golder (2019) in which they state that argue that the basic features of the scientific method can be summed up in five steps, question, theory, hypothesis, testing, evaluation. This basic method means absolutely nothing without the necessary background information which is not truly present. Because of this,

our view of the scientific method is able to be attacked in the same way as Fukuyama's belief.

Now that we have gone over the first two topics, let us move on to the final point of discussion, our contemporary view of scientific knowledge. Just as Fukuyama had a strong belief in the superiority of scientific knowledge over other forms of knowledge, we hold that there is a superior element to the knowledge produced in science. Though this is not just an issue in political science and is indicative of the fact that scientific knowledge has become a sort of cultural hegemon. Cultural hegemony is a concept derived from the Italian Marxist philosopher Antonio Gramsci who argues that the societal ruling class manipulates the culture of a society to ensure that their worldview becomes the default cultural norm (Bullock, Trombley, and Lawrie 2000). Thus, the privileged position of scientific knowledge is established within our culture because it has helped to support systems of power. We could also argue that our holding of scientific knowledge as being superior is also because of imperialism, as western powers sought to utilize science to get rid of other cultural beliefs. Yet while most textbooks espouse this view of scientific knowledge, others like Clark, Golder, and Golder (2019) show that we can still have nuanced discussions of what 'knowledge' is. This demonstrates that we also can't just blame cultural hegemony or imperialism for this view of scientific knowledge. There is a major disconnect in our community over these discussions, and it is due to our tacit knowledge of our foundational paradigm. Since we don't have a unified view, or even multiple views, of the importance of 'scientific knowledge' in our community we get a very fragmented discussion that misses important things. If we had an explicit sub-

field, we could have a space available that would allow for these important discussions and debates to occur in a way that is impossible now.

I would argue that scientific knowledge is a tricky concept because it is a moving target just as the term science is also constantly changing over time. This is something discussed by Foucault in many of his works in which he is able to demonstrate the historical changes that have occurred for both of these ideas (Foucault 1994) (Foucault 2010). A good example of how both science and scientific knowledge changes, as well as how things that were considered scientific knowledge one day can be regarded as nonscientific the next, is phlogiston theory. Phlogiston theory is an old chemical theory that sought to explain things like combustion, and while this theory was popular for a time, its ideas were shown to be inaccurate, and as such the theory died and so did the concept of phlogiston. Thus, this branch of science and scientific knowledge were taken out of their respective categories, showing how the knowledge we hold today may not be what we hold tomorrow.

Despite the widespread criticism of Fukuyama's work, which was well-founded, there was never really any discussion of his views of science. As I have shown in this section there is a good chance that this was because these views or some variation of them were shared by the political science community. This made it so that reviewers ended up skimming his discussion of science. Yet this resulted in a large part of his work going uncriticized for nearly 30 years. The tacit understanding we have of our foundational paradigm stops us from truly examining our own beliefs and can also stop us from recognizing the mistakes of other scientists. The overall goal of this discussion was to show not only some of the current views of our philosophy but also to demonstrate

that we need to critically examine our views about the natural sciences and its foundational paradigms. If we are going to constantly praise natural science and fashion large parts of our science after them, then we must be sure that we are correct in our views about how the natural sciences actually work.

The Problems with Categorization and Classification

The processes of categorization and classification are important aspects of not only modern science but also modern life. Taking the varied and complex world around us and building a set of generalized categories for different phenomena is one of the necessary components that allow science to establish things like laws. This process also isn't limited to science, many people will engage in it at different times throughout their life. If one sees a bunch of cats together, they are more likely to describe the scene as just a group of cats sitting together and not describe the unique characteristics of each cat. In this example, we clump all the individual cats together under the category of cat. Thus, the process of categorization feels almost normal to us since we utilize it in many different parts of our lives. However, it is because this process feels so natural that we must be on guard. I argue that the act of categorization and classification in political science is done tacitly because of both its usage in the natural sciences and how natural it feels. This means that many political scientists will utilize categories and different classifications without fully examining the technical and philosophical reasoning behind why they do it. This is not meant to be an insult to our community, it is simply another byproduct of tacit knowledge. Just because a race car driver can't tell you the exact reasoning behind why they do all of the things they do, that doesn't mean that they aren't good. The same is true for practicing political scientists, just because we can't always

state the exact reasoning behind why we do what we do, doesn't mean that our work is invalid or not useful. But even race car drivers still interrogate their own tacit knowledge by watching their own races and learning where their tacit knowledge has failed them. This is something that we do not have in common with race car drivers, we don't critically evaluate our tacit knowledge, we are much too comfortable with knowing how to do something and not why. We must critically examine the practices of categorization and classification because it is one that feels so natural to us and thus often gets ignored. As such this section will start by discussing what categorization and classification are, from there we can then examine how we utilize them in political science. Once we have this base knowledge down, we can then offer a critique that can help show the problems with our current approach.

The most important thing that we must acknowledge about the act of categorizing and classifying things is that they are human acts. The world is not like a video game in which everything is meticulously documented and written down before the players even exist within the world, it is only once people exist that the world can begin to be taken apart and classified.⁷ I say this because individuals like Foucault have shown that categories and classifications are contingent on the place and time that they are established and as such, they change a lot (Foucault 1994). The example that Foucault uses is the category of science, which he demonstrates has changed in many ways. Not only did the category of science change, but so to did the things put into this category change as well. Another example we could use for this argument is the category of

⁷ While it is not relevant to the discussion here, I would note that it is most likely the case that all living things create categories and classifications. However, humans do it in a very conscious, and some might say compulsive, manner.

democracy in political science. The category of democracy has changed drastically over just the past 200 years, which can be seen in the fact that any modern categorical definition of democracy would exclude every country before the 21st century. This is because our modern definition is riddled with value concepts that are important to our contemporary community but that weren't to previous political scientists. Thus, there isn't a single category of democracy because it isn't inherent to the world, but is imposed onto it by us.

Now that we have touched on what categorization and classification are, let us dive into discussing why we utilize these strategies in science. Both in our everyday life and in science the act of classifying and categorizing things is used to help build some semblance of meaning from the pieces of a chaotic world.⁸ Without categorizing the various phenomena and objects in the world, all we are left with is a bunch of random and individual noise. Imagine attempting to learn more about tigers as an animal by going out and finding and examining every single tiger, it would be simply unfeasible. However, if we gather a sufficiently large group of tigers and examine them, we can then pull-out features that are shared by this group which we can then extrapolate as being true for the rest of the tiger population. Thus, we can see that one purpose served by the act of classification and categorization is one of practicality and efficiency. Another important purpose served by these acts is that they are the only way in which science can make causal claims. Classification and categorization are ultimately acts of generalizing an

⁸ I would argue that regardless of one's personal view about whether the world and meaning come first or if humans come first and then build the world and meaning, this point still stands. If the world and meaning come first then humans are simply discovering the world as is and thus our categories and classifications are still a way to make sense of, what appears at first, as a chaotic world. If humans come first then our categories and classifications are built by us to help us understand the world.

object and/or phenomenon which allows one to examine a great many cases. By expanding the available data, one is able to utilize these generalities to understand if changes within the group are the effect of something that is common in all of them across space and time (Rosenburg 2018). These are the two main purposes served by classification and categorization within science.

When it comes to political science and its usage of categorization and classification, we can see that our community has tacitly accepted a methodological approach that is used by the natural sciences. This approach has us trying to generalize the specific phenomena in question into a set of categories or classifications by boiling away all unnecessary characteristics. Returning to our tiger example we could begin to look at what features are unique to each tiger and then take those traits out of our assessment because they don't matter for the classification due to the fact that they are unique to specific tigers and not the general group of tigers. The specific pattern of each individual piece of fur on a tiger doesn't matter but their overall color does. This process has worked well within the natural sciences and as such political science opted to bring it into its tacit foundational paradigm. However, the way in which we establish different categories and then attempt to force our domain into fitting into the generalizations often doesn't give us the same type of success it does in the natural sciences. Nation-states are not like tigers, they are fundamentally different and thus, this difference ought to be recognized. This now leads us to the main point of criticism of this practice and its current usage.

Ian Hacking: Interactive and Indifferent Classifications

This section is going to discuss the work of philosopher of science Ian Hacking, more specifically his book *The Social Construction of What?* (2001) In this book Hacking discusses the then-current trend in academic writing to debate the social construction of pretty much anything. In his discussion, he ends up making some very interesting arguments and comes to conclusions that can show the political science community that there are other ways of categorizing and classifying our domain than the current method espoused by our foundational paradigm. However, before we can discuss Hacking's ideas, we have to do a bit of background discussion on some important topics that serve as the foundation of his work. These topics include discussing things like social constructs and the differences between social constructs. Once this groundwork has been laid we can then move on to the parts of Hacking's work that can help us most in political science.

The first thing we need to discuss is the very idea of what a social construction is. Now this discussion may make a few readers roll their eyes, as many have most likely come across these discussions before, however, it is always helpful to build a bit of support to ensure that everyone is on the same page. When one discusses the social construction of something it is usually in this logical form as outlined by Hacking, "X need not have existed, or need not be at all as it is. X, or X as it is at present, is not determined by the nature of things; it is not inevitable (Hacking 2001)." In this argument, we can replace X with nearly anything such as science, superheroes, and so on. When we do this an issue may seem to come up, if we plug in a physical concept like people for X, how does it work in this argument? This is where an important separation needs to be

made between the physical thing and the *idea* or concept of the thing. For example, while states are real, in that there are physical components to states such as leaders and institutions, the *idea* of a 'state' is an intangible concept. Thus, when we discuss the social construction of something, what is most usually being referred to is not the physical object, if there is one, but the *idea* of the thing.

Now that we have gone over the basic idea of social construction, let us move on to making a distinction between the things that are usually said to be social constructs. This may seem like an odd thing to do, why would we want to distinguish between the things we would classify as social constructs? The answer is that there is a big difference between statements concerning, say, the social construction of people over the social construction of science. These distinctions can help remind us of the differences between the claims that are made. Hacking argues that we can split the things usually classified as social constructs into one of three categories, "objects", which refer to things 'in this world', "ideas", which are things like concepts and beliefs, and "elevator words". Elevator words, for Hacking, are words that operate in a different way than objects and ideas. These words are not like objects, in that they don't represent things that are 'in' the world, but simply talk about them. Hacking argues that elevator words are used to try to raise discussions to a sort of higher level. Some examples of these words are, truth, fact, objective, and real. There are two issues with these elevator words, the first is that they are circularly defined and the second is that they are not trans temporally stable concepts. Because these words don't refer to things in the world but instead talk about the world, they fundamentally suffer from an inability to be tied to the world in any stable way.

Hacking argues that it is one thing to say that a 'fact' is socially constructed, but it is another to say that people or beliefs are socially constructed.

The final piece of the foundation that must be laid out concerns the way in which ideas, and not objects or elevators words, exist within a 'matrix.' A matrix, for Hacking, refers to the complex set of social and material contexts that impact ideas such as institutions and norms. Ideas don't exist apart from other ideas or objects, they are given meaning by people, institutions, etc. which means that ideas can be impacted by objects and other ideas as well. A good example of an idea 'existing' within this matrix is the concept of a citizen. In this context, we will utilize the concept of 'citizen' in a very basic manner to simply illustrate the point made by Hacking. Citizen as an idea exists in a complex world that interacts with governmental and non-governmental institutions and bureaucracies, the people who are classified as either a citizen or non-citizen, newspapers that discuss citizens, and every other part of the world that interacts with the idea of a citizen. Thus, as we can see, ideas exist within a very large matrix of factors that themselves exist within their own large matrix. As ideas change, they lead to interactions within this matrix that then can inspire changes in other parts of the matrix, which then ripple further out. This concept of how ideas interact within their matrix through a sort of ripple effect is a major point made by Hacking.

Now that we have laid the foundational points needed, let us discuss some of the big arguments made by Hacking that will be useful for political science. The first argument we will examine is that there exists a fundamental difference between the way in which objects and ideas interact within the social and natural sciences. Hacking argues that the underlying difference between the domains of the natural and social sciences lies

in the way our ideas or classifications, which is just a specific type of idea, interact with the object being studied. In the natural sciences, our ideas or classifications don't have an impact on the object being studied, gravity, plants, and chemical bonds don't care about how we understand them because they don't know nor can they. Because of this Hacking argues that the natural sciences are comprised of indifferent kinds of objects, in that these objects don't have an explicit interaction with the idea or classification they are given. However, the ideas and classifications of the social sciences do interact with our object of study, a person, a group of people, and the leaders of nation-states are capable of learning about our ideas and classifications of them and thus interact with our ideas and classifications. Hacking states that the social sciences are comprised of interactive kinds of objects because they are capable of understanding and interacting with the idea or classification of themselves. For example, if a nation-state is labeled a democracy by the political science community the leaders of the nation-state and the people in it can know this, and this may impact their behavior.

This distinction between interactive and indifferent kinds is extremely important because not only is the domain of the social sciences unique in the way their ideas or classifications and objects interact, but also what happens after this interaction. If a political party knows that they are labeled in a specific way by political scientists, think tanks, etc. this may have an impact on their behavior, this is in the initial interaction. But after the party changes their behavior, they may now need to be reclassified as a different political ideology, party, etc., this is where the object now forces a change in its classification, in a sense it creates a sort of feedback loop. This feedback loop is unique to the social sciences, as Hacking himself states, "The fundamental idea is almost too

simple-minded. People are self-conscious. They are capable of self-knowledge. They are potential moral agents for whom autonomy has been, since the days of Rousseau and Kant, a central Western value. Quarks and tripeptides are not moral agents and there is no looping effect for quarks (Hacking 2001).” This looping effect is present everywhere we look within the social sciences, and there are plenty of examples we can pull from political science as well.

To demonstrate an example of how this feedback loop can occur in the realm of political science let us build out a thought experiment. Let us position ourselves as a world leader of a democratic state who is coming off of a not-so-good year. This has caused the different political scientists, think tanks, organizations, etc. to list our country as currently being at a lower level of democracy than we were last year which might be an indication of democratic backsliding. Now let us stop here and ask a few questions. When these data sets are released who has access to them? Nearly everyone, the leaders of the state have access to them, researchers in and out of the state have access to them, and civilians inside and outside the state have access to them. Now not everyone will care nor even necessarily understand what this means, however, this data could also be presented to them through news media in a way that then makes them care. All of this is to say that when these different groups put out their report it sends out a massive ripple throughout the matrix of not only the state we are in but also the international system. This could cause the state to lose legitimacy within the eyes of the public and cause civil unrest which could lead to more democratic backsliding. Perhaps this slip in the rankings causes the international system to engage in sanctions against the state further causing internal issues. Or even let us assume a more optimistic outcome and the state recognizes

its failures and works to fix them so as to go up in the rankings again. But they could also try to game the system due to their knowledge of what is specifically being looked at. Would it be fair to say that any one of these outcomes, plus the many more we could conceive, come about due to the reclassification of the state? One would be hard-pressed to say that the reclassification didn't have at least some degree of impact on the events that take place, thus we must accept the looping effect in our thought experiment at least to some degree.

While the existence of the looping effect in the thought experiment doesn't prove that it happens in every part of political science, it should at least give even the most cynical readers slight pause. If this effect only takes place in a few areas throughout political science, it is still something we have not accounted for in those areas because we are still utilizing methods and beliefs that are based on an entirely different kind of classification. Beyond that, this would be assuming we could even know which areas are in fact undergoing this kind of feedback loop because without a proper mindset change the loop may not be visible at first glance and require a thorough analysis to see. This serves to give more credence to the main point of this paper which is that while there has been much work done in the philosophy of science and social science there is no space within our community to properly examine and engage with them because we don't have our own sub-field. There is no institutional importance in these affairs, yet it is only political scientists who can engage in discussions of our foundational paradigm, thus we must open a space for them to happen.

The Goals of Political Science

The final critique that I will levy against the current tacit philosophy of political science comes down to the overall goal of political science as a scientific tradition. While, yes, there is the very basic goal of expanding our understanding of the world around us, this is not a very useful goal to work off for even astrologers hope to achieve the same goal. When I speak of the goal of political science as a scientific tradition what I mean is something more specific that asks what is it that we as a community of scientists seek to do? To answer this question, we must take a look back again at the literature that was drawn on earlier in this chapter, and when we do we will notice there does in fact seem to be some sort of consensus on this topic, though it is not usually explicitly stated. In various political science textbooks, we can see that there are two main traditions, puzzle and problem-solving, which I will discuss in more detail later in this section. As such I would argue that our current foundational paradigm holds the goals of our scientific tradition to be either to solve puzzles or problems. Yet, just as there were misunderstandings and alternative views within the tacit understanding of our foundational paradigm of things like the natural sciences and categorization, there are just as many problems and potential perspectives here that we must examine. These discussions are done to show the importance of critically evaluating our goals because they shape the things we care about and investigate as political scientists. These discussions are needed, but they will only happen if we create a space where they can exist and be seen, as such we need institutional recognition of these investigations. This section will start by offering some evidence to the initial claim, then I will demonstrate

the issues that come with the puzzle and problem-solving traditions. Finally, I will examine work done in the field of education to bring forward an alternative path.

When it comes to offering up evidence for the claim that I presented, we must remember that this task is going to be a hard one because of our tacit beliefs. While this may be the case, there are some clear examples in various textbooks. In McNabb (2004), Nau (2017), O'Neil, Fields, and Share (2015), and Clark, Golder, and Golder (2019) we can see a clear view that our goal is that of either puzzle or problem-solving. However, not many of these textbooks will outright claim that our goal is either to solve puzzles or problems. While not all of them use the terms puzzle or problem-solving the way they position the research conducted by political scientists makes a very clear implication that this is the goal. Beyond that, the desire to generate causal claims that exist in our tacit philosophy is also very useful for solving problems because understanding why something happened is often essential in fixing it. Thus, I would also argue that there are many different parts of our tacit belief system that also reinforce this view of what the goals of our scientific tradition ought to be.

Now that I have given some evidence to the claim that political science is a problem and or puzzle-solving tradition, let us examine what this means and what the problems are when political science uses one or the other. Fundamentally puzzles and problems are different, though they are not mutually exclusive for a puzzle can be a problem, but it doesn't have to be, the same is true vis versa. Because of this fundamental difference, we should split them in two and approach them separately. Let us start by looking at the puzzle-solving tradition, and to start let us ask ourselves, what is a puzzle? While we know that they are different from problems, this doesn't tell us what they are.

Puzzles are situations or games that have clear rules which govern how they are played and outline how winning and losing operate. Winning in a puzzle ultimately means that the person has come to a correct answer while losing means coming across an incorrect answer. A good way to explain it is through a metaphor and let us go ahead and use the game of sudoku. In sudoku, there are a clear set of parameters that one must follow in order to arrive at the correct solution to any sudoku puzzle. These parameters are that the numbers 1-9 must appear in each row, column, and square, but no number is allowed to be repeated in any row, column, or square. These rules are quite explicit, and it also means that we not only know when a solution has been arrived at, but it also clearly tells us when we are wrong as well. Yet, political science doesn't have a set of codified rules that are strict in this way, this means that we aren't able to tell when a puzzle is solved or if we have simply found a wrong answer. This inability to declare when one fails also makes it harder for us to know what to keep when we decide a failure has occurred, do we throw out the arguments, methods, beliefs, etc. of the individual researcher or the theory being tested (Kuhn 1979)?

All of these issues now raise a new and interesting question, does political science actually have the capacity to properly solve a puzzle? I have two different answers to this question, one is cut and dry, while the other is more ambiguous. The cut and dry answer to the question is simply no, political science doesn't have a framework it can utilize to solve a puzzle, nor are there even puzzles to be solved in political science. This is, once again, a consequence of our tacit understanding of our foundational paradigm, without having any codified rules in place one cannot go about solving a puzzle. Returning to our sudoku metaphor, imagine playing a new game of sudoku where there is still only one

answer but now the rules are gone, what do we do? Well, we could brute force our way to try to find an answer, except no, we can't do that because our lack of rules also means we don't know when we are wrong. Thus, our tacit philosophy ends up being the greatest hindrance to our ability to act as a puzzle-solving tradition. The other answer to this question moves away from black and white distinctions between what is and isn't a puzzle and allows for more non-traditional puzzles to exist. We could say that while political science can't solve formal and traditional puzzles, it can solve things like practical puzzles, which may not have as clear-cut rules as formal puzzles. This idea positions our answer in a shade of grey, sure they aren't the same puzzles we are used to, but it's still a puzzle. Regardless of which argument one chooses the overall point is still the same, we can't say our goals are to solve puzzles in the traditional sense, and thus, it would be better to reclassify this goal.

Now having gone over the idea of what a puzzle-solving tradition is let us examine the other tradition, problem-solving. First let us address the question of what, in a very general sense, is a problem-solving tradition? A problem-solving tradition focuses on understanding the causes of a problem and then finding a solution to said problem. However, just like a puzzle, there must be some semblance of a rule set in place to state things like how we can tell when a problem is solved. But before one could even begin to solve a problem one must first outline what exactly a problem is. A simple answer is that a problem exists when a gap is opened between the way the world ought to work and the way it works. Thus, while puzzle and problem-solving traditions are similar in some ways, they differ in other aspects such as their criterion of evaluation and so on.

The biggest issue with the idea of political science being a problem-solving science can be seen when we reexamine the definition of a problem that was just given. A problem is simply a situation in which our explanations of how the world ought to work run into conflict with how the world does work, but why does this become an issue for us? One major reason is that a problem only exists when one has a view of how the world ought to work. This may be fine for engineers but is it ok for political science to even say how the world ought to operate? For example, there is a consistent discussion in political science about why states don't simply become democracies because that is simply the goal they ought to strive towards. Yet this problem only exists if someone thinks that states ought to move towards being democracies. Fundamentally the problems that we pose in political science are not the same as the problems in the natural sciences. The problems posed in political science are value-laden and are in no way objective, they reflect the beliefs and views of the community and the individual scientists of how the world ought to operate. The second issue with a problem-solving tradition is that it is more useful for engineering and not science. Engineers attempt to fix the problems that exist within the world by bridging the gap between expectations and reality. But we are not engineers, we are scientists, we don't fix the gaps between our ideas of how the world ought to work and how it actually does, we are supposed to uncover how the world works. Because of this, I would argue that we ought to stop saying, in any way, that our science is one that attempts to solve, what are ultimately, subjective problems because that would make us not scientists but engineers.

With both of the main traditions now having been examined and critiqued, let us now examine what an alternative could be to these traditions, the idea of problem-posing.

This idea is one that I am sure might be foreign to some political scientists for the idea doesn't come from any science or even formal philosophy, but educational studies.

Because of this, I want to take some time and examine the original concept. The original idea comes from the Brazilian educator Paulo Freire's book *Pedagogy of the Oppressed* (1970). In this book, Freire outlines what a problem-posing education looks like, why it is useful, and what the unique benefits are. Freire originally wrote *Pedagogy* because of his experiences working as an educator in Brazil and being involved in literacy programs aimed at the 'peasant' laborers. Through these experiences, he began to notice that the current form of education, what he refers to as the banking model of education, was highly insufficient at lifting people up and was more useful in maintaining systems of power and domination. This is because this model tells students that they virtually know nothing, they are in class to be given information. Students are not encouraged to critically evaluate the information being presented to them because they are seen as being unable to. The banking model tells both students and teachers that students are not ready to think for themselves, they are helpless and must be taken care of. As such, students go through school and are met with dehumanization and domination as their views are disregarded and their experiences are devalued.

After recognizing these issues Freire sought to devise a pedagogy, or an educational method, that would allow oppressed peoples to recognize the causes of their own oppression, recognize how the society around them supports this oppression, and how they might be able to find a solution. With this goal in mind, he ended up crafting the problem-posing pedagogy to fight back against the issues he found in the banking model. Problem-posing education focuses on building a level of critical consciousness in

oppressed peoples. Critical consciousness, for Freire, is a form of consciousness that allows oppressed peoples to recognize the different causes of said oppression. This model does this by building a different type of relationship between teachers, students, and the world around them. This pedagogy approaches students as though they are not simply dumb, but that they have their own experiences and ideas which should be valued, listened to, and examined. Teachers are also repositioned in this pedagogy as not being monolithic figures of knowledge that are there to regurgitate this knowledge, but as fellow learners and partners with students. Thus, in this pedagogy teachers accept that they can learn from their students and grow just as students can. This, in turn, empowers both the teacher and the students allowing them to critically evaluate the topics they are discussing and helping to show both parties that the world is not static but changing.

While the contemporary form of problem-posing traditions is situated mostly within education, I would like to expand this tradition outward and demonstrate how it can be applied to political science. Now adopting this model is hard because education and political science are quite different, yet I think this endeavor is worth engaging in. I argue that there are two main reasons why adopting this model can be helpful for political science, the first looks at the history of natural science, specifically physics. For a long time, Newtonian physics reigned supreme, until Einstein came along and completely changed how physics saw the cosmos. But how did this transition from Newtonian physics to relativity occur? This is a big question, and there is no *one* answer, but the one that I think many would agree with is that before relativity became a theory, scientists were hard at work poking holes in Newtonian physics. For years scientists constantly pushed Newtonian physics as far as it could go, this is similar to the idea put forward by

Popper, which states that scientists ought to push theories to their breaking points. This meant that eventually, cracks began to form within the approach that called for changes and thus helped give rise to relativity. By cracks, I mean issues, little things that start to not make sense as we learn more. In Newtonian physics, it was certain planetary motions that the model was unable to account for. But it wasn't a series of issues, or cracks, that led to its abolition, it took massive holes in the model that forced individuals like Einstein to have to completely reconceptualize the world around us and move away from it. A problem-posing tradition of science does not seek to answer questions, problems, or puzzles, instead, it seeks to examine the world as is, or our current understanding of the world, and home in on a part of it and ask questions about it. This is also different than simply pushing a theory as far as one can because this idea is useful for sciences that engage in lab testing where one can push a theory. But in political science we can't truly test our ideas, we are more forced into either finding historical evidence for our theories, looking for contemporary evidence or simply waiting and seeing if the theory is right. The questions that would be asked by a problem-posing tradition are more in-depth than the ones asked and answered by a problem or puzzle-solving tradition because the goal of having an answer is never present.

The second reason why we ought to adopt Freire's approach, in some way, is that this method is one of the only potential solutions we have to the problem of feedback loops. Not only is our current western educational style still modeled on the banking model, but this in turn causes us to see people as inherently dumb unless proven otherwise. When we ask questions such as, 'why don't people do things that will benefit their own self-interest' we engage in a form of mockery. This idea insinuates that people

don't know their own self-interest and that it is only us, the scientists, who truly understand what it is that will make their lives better. Yet this just means that we end up ignoring people and thinking less of them, either actively or passively. However, in a problem-posing tradition we wouldn't approach people as being, misguided, dumb, etc. we approach them as individuals with valid views, beliefs, experiences, etc. This approach allows us to recognize that individuals have an impact on the society around them and that they are autonomous individuals who will have varied beliefs and ideas. We wouldn't clump people together under things like the statistical 'norm' because this idea means nothing for us, people are people.

To say that political science ought to engage in one specific tradition or another is to make a bold claim. It is to say that the person asserting the claim knows that the path forward is one that can only be taken by those who utilize the specific tradition and that all others will falter. Yet how can anyone person be sure about the path that any science takes? It is important that we expand our view of what we are as a scientific tradition because our current limited view stifles our ability. If we only see certain things as being important, such as puzzles or problems, then we miss examining the rest of the world. We end up blinding ourselves to other ways of viewing and interacting with the world around us. If we wish to say we are a science then we must work with the world and try to understand it, not plant our feet and tell the world to move in accordance with our views.

CHAPTER FOUR: CONCLUSION

To conclude this project, I want to offer some final thoughts about the potential benefits that can be derived within our field from the creation of the philosophy of political science. The main benefit I want to address is the potential for growth within our field by better understanding our foundational paradigm. I have shown throughout this thesis that political scientists often don't fully understand the foundational paradigm of our science. This stems from how we teach our science and the various sub-fields that currently comprise it. A philosophy of political science can help us find a better way to educate newer students to help them have a better grasp of our foundational paradigm. This will also help working political scientists now as well. To help demonstrate the point, I want to offer a bit of speculation about what the changes to our field might look like should the philosophy of political science come into existence. I have chosen to speculate about these changes by examining a contemporary textbook and then discussing a few modifications to its overall structure. The textbook I have chosen to discuss is Clark, Golder, and Golder (2019). I have chosen this textbook because of both how new it is, and the content within it. While this textbook mostly covers comparative political science, it spends its first section discussing science and politics in general and it is here where I will focus. This section is also where the authors lay out their foundational paradigm of political science and science in general. I will start by going over their first section in more detail before offering my changes.

The first section of Clark, Golder, and Golder (2019) is titled simply, “What is Comparative Politics?” and it is broken down into three chapters. The first chapter is a very basic introductory discussion that starts by giving an overview of the rest of the textbook. After this is done the authors then give their reasons for why they discuss the topic of comparative political science in the way they do and outline the benefits they believe are gained through their approach. The next chapter is aptly titled “What is Science?”, and it is here that the authors examine the concept of science. More specifically they start by asking the same question as the chapter title. They argue that science is but one answer to the question of epistemology and is ultimately a pursuit for a particular form of knowledge. They then go on to discuss logic and concepts such as valid and invalid arguments. Next, the authors discuss what they see as being myths about science. The first myth is that science can reach objective truths, the second is that scientific knowledge is only possible when experimentation is possible, third is that scientists are value-neutral, and the final myth is that politics can’t be scientifically examined.⁹ The third chapter is titled “What is Politics” and simply offers the authors’ perspective about what politics is. This chapter is odd because it offers only one singular view of politics, that being a theory based on the work of Albert Hirschman which they refer to as the exit, voice, and loyalty (EVL) theory of politics (Hirschman 1970). The discussion in this chapter is entirely around this one theory and what insights it can provide.

⁹ These myths are very interesting for the simple fact that it simply clouds my own understanding of what the authors foundational paradigm truly is. While it seems initially simple, they cloud this simplicity by arguing that scientists aren’t value neutral. Ultimately, I think that the cloudiness created by their views is more reflective of the greater issue this thesis brings up, that being that the understanding of the own foundational paradigm of political science is tacit.

Having gone over what the layout of Clark, Golder, and Golder (2019) is, let us now examine the changes to this layout that I argue are reflective of some of the meaningful changes that might occur within our field. The first chapter is an introductory chapter and I think that the layout utilized by Clark, Golder, and Golder works well. I do want to point out one thing about this chapter I do like, the section devoted to explaining why they are taking a different approach to teach the sub-field the way they do. In this section, they also offer some very good arguments as to why they take this approach, and it is a demonstration of self-reflection as the authors recognize the existence of the other ways to teach this sub-field. As such I don't think any changes are needed at all.

While I wouldn't change much about the first chapter, the same cannot be said for the second one. To start, I would make some big changes to the section, "what is science?". I argue that this section would be better if it started this topic off by engaging in a quick historical discussion of science and its roots to help show the long history of science that we often forget. This historical discussion can be followed by an examination of both the philosophy of science and different views about how science advances. This three-part discussion would be better suited to showing the changes in science over time, the different approaches we have currently to explaining why these changes occur and introduce students to the field of study that asks questions like the one asked by the section heading. The next change to this chapter would be in the section about the scientific method. In this section I would discuss the very concept of a unified method of science, why we use it, and what some of the potential downsides might be. This idea seems silly at first, but in reality, it is a fair thing to discuss. Why should we care more about the similarities between the methods of the physicist and the economist, than their

differences? This discussion will allow students to better understand the concepts that are contained within the idea of a unified method better than simply going over a cookie-cutter outline. Another benefit to this discussion is that it would help formalize a bit of the tacit understanding we have of the scientific method in our community. The next section I would change in this chapter is the final part where the author talks about some supposed ‘myths’ of science. While I do agree with some of the larger points presented in this section, I don’t think it is helpful to refer to these views as simply myths. I would change this section to offer some counterpoints of view about science and the topics discussed in the chapter that were not brought up. This section could discuss different views of epistemology that were held by scientists in the past but that were abandoned later after a new discovery. This would help to show that science is an ever-changing concept, the views held today are not guaranteed to be the ones science holds tomorrow.

Having gone over the chapter about science, let us now examine the changes I think should be done for the next chapter, “What is Politics?” Overall, I think this section can be improved by first condensing the discussion the authors have about their theory. This isn’t to say that their theory is bad, nor that it is good, but that it is only one view and thus must be treated as such. After the authors present their theory and give a case for it, then we can add a section devoted to examining other views about politics. This would help to show the wide array of different views about what politics is as a concept. The reason that this is important is that politics is our domain, and while it is helpful for individuals to have their own views about what this domain is, we shouldn’t only present one view to students. Students ought to understand the other views in our field as this

helps with increasing their capacity for critical thinking as they are forced to examine different views and the benefits and disadvantages each holds.

Now that I have gone over the main chapters I want to now present the biggest change I would make to the layout of this textbook, which is to add a whole new chapter, titled, What is Political Science? I believe this chapter is needed to help bridge the gap between the two previous chapters. Not only that but there ought to be more of a discussion about what our science is, as currently the authors just describe it as the scientific study of politics. I would start this new chapter off with a brief history of our science. This could mean covering individuals such as Aristotle, Plato, Machiavelli, and other political philosophers who would give rise to our field. It could also examine some of the main thinkers who were vital to the establishment of our field, such as Comte, Durkheim, and Weber. From here I would then add a section discussing the philosophy of political science. Since the philosophy of political science would be the philosophical investigation of political science, I would argue that this section would simply aim to show the importance of these investigations and what can come from them. Some examples of the things this section could cover are, examining the role of values in political science, discussing the different methods used in political science as well as the specific sub-field being approached in the textbook, and the ties between the methods of the natural sciences and ours. By adding this section, we can help students see why they should interrogate their understanding of what science is and how to do it. The final section I would add to this new chapter would be all about what our foundational paradigm is. This section would cover what the underlying foundational paradigm is for political science, as well as the specific foundational paradigm(s) for the sub-field being

discussed. I believe that this final discussion helps to also bring the various things discussed in the chapter together as students would be better able to understand what they are doing, a bit of the history about what they are doing, and most importantly, why they are doing what they are.

While these changes are just speculation about how the philosophy of political science could impact our field, I believe that they demonstrate the point that there is a lot of work to be done and that there is potential. We must be more willing to critically self-reflect and examine our own ideas, beliefs, values, etc. because that is how we can grow as a science. It is also important that we impart this necessity onto students as well. The philosophy of political science would allow for new ideas to come into existence, old ones to try to potentially reclaim their former glory, and current ideas to stand their ground against these assaults. In short, I believe that this sub-field's creation will have a massive impact on the community, and it would help propel our science to a whole new height.

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APPENDIX

Footnotes

¹ See the sub-section, misunderstanding the natural sciences and the philosophy of science, for more information.

² The only real piece of criticism one can find about this is done by Fukuyama himself in another one of his books, *Our Posthuman Future (2002)*. In this second book, Fukuyama retracts the claim that history has ended because for this to happen modern science and technology would also have to come to an end.

³ Further on in this section I discuss his views in more detail and offer up evidence for this claim.

⁴ This question is not designed to demonize metaphysics but to show that his views are but one more metaphysical view in a sea of alternatives. This is because if we can find no real empirical evidence for his claim then it must resort to using metaphysical claims to justify itself.

⁵ It should be noted that the argument that the scientific method doesn't exist isn't a new one, it is one advocated by many philosophers of science and scientists, which I bring up not to show the validity of the overall argument, but to demonstrate that there is indeed a debate within the community, one that has largely ignored (Feyerabend 2010)(Kuhn 2012)(Bridgman 1955).

⁶ I would note that I do accept the metaphysical nature of the claim made. The statement is not made in the hopes of appearing metaphysically neutral but to show that there is no non-metaphysical answer to the question of whether scientific knowledge is objective or not.

⁷ While it is not relevant to the discussion here, I would note that it is most likely the case that all living things create categories and classifications. However, humans do it in a very conscious, and some might say compulsive, manner.

⁸ I would argue that regardless of one's personal view about whether the world and meaning come first or if humans come first and then build the world and meaning, this point still stands. If the world and meaning come first then humans are simply discovering the world as is and thus our categories and classifications are still a way to make sense of, what appears at first, as a chaotic world. If humans come first then our categories and classifications are built by us to help us understand the world.

⁹ These myths are very interesting for the simple fact that it simply clouds my own understanding of what the authors foundational paradigm truly is. While it seems initially simple, they cloud this simplicity by arguing that scientists aren't value neutral. Ultimately, I think that the cloudiness created by their views is more reflective of the greater issue this thesis brings up, that being that the understanding of the own foundational paradigm of political science is tacit.