Wm0391 Philosophy of Science
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Institutional Economics: Kuhn versus Lakatos

Abstract

In institutional economics, two main schools (Old and New Institutional Economics) are distinguishable. Despite the fact that they are sometimes considered to be incommensurable, they have co-existed for decades. On the other hand, scholars often reflect on both schools and are sometimes combining them. This interesting tension is a perfect application field of theories on scientific development. Kuhn and Lakatos hold views that partially overlap, but are also different in some respects. This paper looks at the strengths and weaknesses of both theories in the institutional economics application domain. Its main conclusion is that a combination of elements from both views provides the most accurate description, but that a tendency towards Lakatos may be visible due to a further integration of both schools.

1. Introduction

The legacy of Thomas Kuhn is very prominent in today's thinking about the role and structure of science. His key concepts of paradigms, the theory-ladenness of data and revolutions (Kuhn, 1971) have attained many supporters. Kuhn's thinking about science could actually be seen as a paradigm itself, because it has its own 'heroic' examples and set of interrelated theoretical concepts. Nevertheless, his thinking has been refined by various other authors, amongst which is Imre Lakatos. His concept of research programmes that compete in their ex ante explanatory power, may well be a better fitting historiographic description of how scientific schools evolve.

To test which of the two views on the development of science is most accurate in a certain case, I will look into a branch of economics that studies social patterns in society: institutional economics. Broadly, two schools can be distinguished: Original or Old Institutional Economics (OIE) and New Institutional Economics (NIE). These schools co-existed over almost a century. In the twenties of the last century, OIE was the dominant school. After the Second World War, the dominant position was taken over by NIE. There is general consensus that this was part of the marginal revolution in science, in which clear, rigorous mathematics became popular because of their great power to explain and even more important, predict empirical findings. Only in the seventies, the limitations of NIE gave rise to a rediscovery of OIE, which has less rigour and tries to incorporate more explanations from the social sciences into account.

It is interesting to apply the views of both Kuhn and Lakatos to the two of these schools. It is believed that OIE and NIE are different ways of thinking, but could one say that they could be stated in Kuhn's use of the word paradigm? The co-existence, but fluctuating popularity, of both schools suggests that the competitive element of Lakatos' perspective may also be present. In this essay, I will look at which of the two views is most appropriate, and possibly, whether they are complementary to each other.

First of all, the scope, methods and aims of OIE and NIE will be laid out in the following section. Thereafter, a basic reference will be made to the key concepts of Kuhn and Lakatos, to show how the test of the hypothesis is operationalised. Section four will deal with the application of the ideas of both philosophers to the distinguishing schools. Finally, in the conclusion I will formulate an answer to the accuracy of Kuhn's and Lakatos' views in the case of institutional economics.

2. Scope and methods

The two schools of institutional economic thought can best be compared on the dimensions of scope and methods. Scope is about the object of research, methods are about the ways to expand knowledge, in other words: to validate hypotheses.

2.1. Original Institutional Economics

According to Rutherford, *"(…) OIE does not represent a single well-defined or unified body of thought, methodology, or program of research."* (Rutherford, 1996, p. 1) He distinguishes two main research programs, one inspired by Veblen and focusing on the interrelation of technology and institutions, the other by Commons, more concerned with law, property rights and organisations. Moreover, OIE is often criticised for not being built on a theoretical basis (Coase, 1984). Both of these statements are attacked by Stanfield, the one about the absence of coherency implicitly, the one about the lack of theoretical ground explicitly. Stanfield clearly describes that OIE scholars make use of theories, although they may be underdeveloped and are more pulled towards the social science than the more quantitative ones. The OIE school primarily is about powers and habits. *"To the extent of their power, individuals, teleological by nature, acting alone or collectively, pursue ends that refer to their habitual inclinations by use of means that are given by these same inclinations."* (Stanfield, 1999, p. 6) The main focus is on institutional adjustment, a process triggered by habits being frustrated. OIE tries to explain this process, without regarding wants and resources as a given. In contrast to the neoclassical schools of thought, these are variables to be explained.

Regarding the method, OIE relies on a method also used by anthropologists, who conduct field studies focusing on human activities (Stanfield, 1999). Generalisation and the discovery of trends are done through pattern modelling, which is about qualitatively exploring potential relationships between variables. Once generalisations have been discovered, these should explicitly be included in a way that it can be used to program institutional change. This clearly shows OIE's drive towards social utility of their theories. Scholars admit that OIE is not value-free, but that economics remains a moral science (Cochran, 1974 cited by Stanfield, 1999). In this respect, it is not only a descriptive way of conducting science, but also clearly positivist and allegedly subjective.

2.2. New Institutional Economics

The scope of NIE is about explaining institutions that coordinate transactions (Groenewegen, 2001, p. 6). In sharp contrast to OIE, New Institutional Economics embraces a set of theories that is quite clear from the outset. Three main theoretical bodies can be distinguished: game theory, transaction cost economics and agency theory (property rights and principal-agent relationships). Game theory describes situations as if they were games, played by actors who each have a set of strategies. Agency theory is about rent-seeking behaviour of actors and possibilities to use this rational optimisation of expected pay-off for steering and monitoring. Game and agency theory work belongs to the neoclassical school, if looked at the deductivist and methodological individualist or reductionist approach (Groenewegen, 2001, p. 6). Transaction cost economics is about explaining governance structures, matching specific types of transactions. Its methods only provide for a comparative static analysis, in which different states can be described, but the process regarding the change remains a black box. Notice the key difference with OIE in this respect: the latter's focus is on change; change is a variable to explained, instead of a variable that is taken for granted.

The difference in scope is also clearly laid out by Zafirovski: *"(…) old institutional economics recognizes that various social institutions 'impose different constraints on what constitutes acceptable (economic) behavior' (…). According to such institutionalism, economic phenomena like markets, including the labor market (…), represent social institutions (…). By contrast, orthodox institutionalism found in the new institutional economics tends to neglect such institutional properties of and influence on economic phenomena, and to treat social institutions as aggregate effects of rational individual actions, particularly optimizing behavior."* (Zafirovski, 2003, pp. 817-818)

3. Key philosophical concepts

Before we apply Kuhn' and Lakatos' views on the history of science, we will briefly mention the main ideas we will use from them, and illustrate how we will operationalise them.

3.1. Kuhn

Kuhn's main assertion is that scientists think and work in incommensurable paradigms (Kuhn, 1971), where a paradigm could be defined as a consistent set of exemplary cases and theories that influence the way of thinking, the gathering of data as well as the testing of hypotheses. The influence a paradigm has on the way scientists behave (you could almost say: believe) goes that far, that it is impossible to render two paradigms together. In Kuhn's words, paradigms are incommensurable. That follows from his thesis that *"concepts derive their meaning from the theory in which they play a role"* (Okasha, 2002, p. 85). A single scientific statement cannot be understood without the set of embodying theories: the paradigm.

Paradigms can change. As a paradigm is deeply engraved within a scientific community, it will only do so in case of too many anomalies, that cannot be explained satisfactory any longer within the paradigm. Kuhn states: *"(…) normal (non-revolutionary, TM) science ultimately leads only to the recognition of anomalies and to crises. And these are terminated, not by deliberation and interpretation, but by a relatively sudden and unstructured event like the gestalt switch."* (Kuhn, 1971, p. 122)

To test whether OIE and NIE are incommensurable, further on I will first discuss whether they are a paradigm in Kuhn's meaning of the word. Secondly, I will look at if they are mere substitutions or complements to each other. Complements that can be understood by either side can signal compatibility, substitutions may be a sign of incommensurability.

3.2. Lakatos

Lakatos is not talking about paradigms as such, but defines the concept of research programmes (Lakatos & Musgrave, 1978, pp. 110-117). A research programme consists of a hard core – a base theory that uniquely defines the identity of the programme – that must be protected at all times by the protective belt. In this sense, anomalies are anticipated. The protective belt can be constructed through new research, which tries to fit the anomalies with the hard core by postulating new assertions. In a research programme, conscious guidelines for this new research are called positive heuristics. Negative heuristics, on the contrary, do not define what should be researched, but what should not: the hard core. Different research programmes, with different theories in the hard core, can co-exist at the same time. However, in Lakatos' normative statement they are competing with each other, success being measured by the degree to which the programmes can predict novelties ex ante. A programme that is capable of being 'ahead of empiry' is progressive, a programme that is not is called degenerating. It is interesting to note that Kuhn states that anomalies piling up finally lead to a revolutionary paradigm change, and that this is quite a passive view. Lakatos deals with anomalies in a more pro-active way, through his concept of positive heuristics.

Lakatos can be applied to the institutional economic schools by defining a hard core and a protective belt, and looking if the popularity of OIE and NIE was dependent upon their progressiveness. The validity of Lakatos' theory will also be checked against whether evidence can be found that positive heuristics are proposed.

4. Philosophy applied

Now that we have sketched the schools and the philosophers' perspectives, we could start analysing the former through the latter. We will focus on the main operationalisations indicated in the previous section.

4.1. Co-existence

Both OIE and NIE have co-existed for decades. However, their popularity fluctuated over time. As stated in the introduction, OIE as school of thought already started in the beginning of the 20^{th} century, whereas NIE developed only after Second World War. The initial popularity of NIE was due to the fact that it was less messy and its theories were more quantitative. In the seventies, however, the limitations of NIE became more recognised. As a general rule, rigour and realism are both ends of the same scale: there exists a trade-off between them. The mathematical rigour of NIE had its drawback in its relatively low realism. In this respect, OIE mirrors NIE. It could hardly be called rigorous, but its fit with the empirical findings and hence its possibilities to propose changes to that 'reality' are better because it takes into account more variables and is less reductionistic in determining relationships. New attention was being given to OIE for this reason, but in NIE a development towards more realism is visible too. A clear-cut example of this is Williamson's framework. As one of the spiritual fathers of NIE, mainly on transaction cost economics, he developed a model that tried to explain which governance structures at the firm level are chosen. This model had its limitations, and Williamson gradually added levels of complexity (Groenewegen, ?). In literature, several exercises have been carried out to build a bridge between NIE and OIE. It seems fair to conclude that both schools can co-exist at the same time and that it is possible to incorporate at least some elements from the 'paradigm at the other side of the river'. However, parallel existence does not yet mean that the paradigms are commensurable. To answer the question about commensurability, first we have to discuss whether OIE and NIE are paradigms as such.

4.2. Paradigms and incommensurability

If OIE or NIE are talking about institutions, many different definitions are used. Zafivorski goes that far that he observes a fundamental distinction in their conceptions: *"In essence, the conception of institutions as found in the new institutional economics (and rational choice theory overall) displays a sharp contrast with its old version as proposed by the early institutional and historical economists."* (Zafirovski, 2003, p. 815) However, a common denominator on which both sides probably would agree is that institutions are patterns that shape behaviour. The trade-off between rigour and realism, mentioned before, could shed some light on the commensurability issue. NIE is quite rigid; it works with a few variables to be explained, but can construct a straightforward model from them. OIE has more variables to be explained, and hence is less able to maintain rigour. The rigorousness directly relates to the method of testing. Now that the tension between rigour and realism can be viewed as a scale, its logical consequence is that NIE and OIE (components) can be placed somewhere on that scale. Rutherford, too, argues for a somehow softening of the sharp dichotomies that are used to characterise NIE and OIE: *"(…) virtually all of these standard dichotomies are false and misleading. (…) the extreme positions are untenable, any adequate social theory cannot be strictly on one side or the other, and many social theorists do, in fact, adopt more moderate and modest positions."* (Rutherford, 1996, p. 5)

As the phenomena to be explained are the same, but merely the scope and methods differ, it seems reasonable to conclude that NIE and OIE are not incommensurable. In practice, scientists may favour one of both schools, but that does not mean that they cannot work with theories from the other one. The attempts to build theoretical bridges, although still struggling sometimes (see for example Vandenberg, 2002), illustrates this. A side observation in this is that here, too, innovations in the sense of new theories arise when disciplines come together. A clear example is (Koppenjan & Groenewegen, 2005), where institutional economics and public management perspectives have lead to a proposed model for the explanation of institutional changes that is built upon Williamson, but clearly adds dynamic, OIE-like, dimensions.

It is good to notice that a certain bias exists in analysing incommensurability in the scientific world. Famous scientists that have given a school a theoretical basis, like Williamson did for transaction cost economics, are stricter in defending their position and attacking the other end of the continuum than scientists that apply or extend these theories. Therefore, the debate can be troubled by these hardliners. Another peculiarity is that the term incommensurability may be used too quickly. Stanfield, cited earlier as part of the OIE school, states that, regarding the differences between OIE and NIE, *"(…) in Thomas Kuhn's apt turn of phase, there is a large measure of paradigm incommensurability."* (Stanfield, 1999, p. 232) Later on, however, he refers to (Rutherford, 1996) when saying that *"(…) those who do OIE should undertake the development of a more systematic and unified analytical framework. This effort may well lead toward an integration with NIE (…)."* It is clear that there is no unanimity among scientists about the incommensurability problem. I interpret Stanfield's contradictory statements as a clear sign of the situation in which OIE and NIE are not incommensurable theoretically, but that in practice the two schools are that different that scholars use to see it as incommensurable.

4.3. Research programmes

If we are to apply Lakatos, first we have to try to describe OIE and NIE in terms of research programmes. That is, it should be possible to distinguish a hard core and a protective belt. Thereafter, I will look at whether the protective belt is constructed consciously by means of the existence of positive heuristics. It is very hard to define the hard core of OIE. Earlier in this paper it was already mentioned that OIE lacks a clear theoretical framework, and as such is more of a collective of theses and theories that study the same phenomenon (social institutions) by means of comparable methods (pattern modelling). Combined with the fact that OIE is far from rigorous, it can be stated that it is impossible to discern between a hard core and a protective belt. If we leave the question whether this excludes OIE from falling under Lakatos' definition of a research programme aside, we can look at the degree of progression. Here, it can logically be concluded that OIE will hardly ever be capable of making predictions before the fact. Because of the lack of rigour, multiple realisations may be possible with the same parameter values and a great deal of uncertainty resides. In contrast, it may outperform on giving post hoc explanations, as it can include many variables in the analysis. So, OIE cannot be characterised as a progressive research programme. Lakatos' would conclude that it is degenerating then, and loses scientific support. Looked at the history of NIE and OIE popularity, the failure of OIE to be progressive may be an explanation of its unpopularity in the first decades after the Second World War.

In comparison, NIE was more progressive. With its clear mathematical methods, it was able to make predictions based on a small number of input parameters. The fact that the predictions lack some realism, as stated earlier, is its main limitation, but nevertheless it *was* able to predict, in contrast with OIE. In NIE, we can identify a hard core and a protective belt. The core is being formed by theories around game theory, transaction cost economics (Williamson) or principal-agent theory. A clear example of the construction of a protective belt, over time, can be found in Williamson's work. Groenewegen describes how Williamson expanded his initial model on the matching of governance structures with the characteristics of transactions. The institutional environment was introduced as a 'shift parameter', and placed outside the model. In other words: the NIE model of transaction cost economics can suggest the most efficient governance structure given a certain institutional environment (Groenewegen, ?, p. 12), hence this environment is exogenous. Another criticism on Williamson's model was that it did not account for dynamics, a criticism that holds true for NIE in general. Thus, he introduced a few concepts of which remediableness is most interesting. Remediableness is about the possibility to learn and continuously adjust governance structures, so that – ex post – the actor will choose the most efficient governance structure. His model then predicts the model chosen in the end. The process of constantly improving the model has not been worked out, but clearly, a bridge can be built towards OIE, because here it is about the process of institutional change. My assertion is that the protective belt of NIE has tendencies to move in the direction of OIE. This is another sign that OIE and NIE do not belong to completely different paradigms, but maybe, that differences are exaggerated in the infant stages of the development of both schools.

The final test to validate Lakatos is the existence of positive heuristics. This is the easiest one, as there are examples from respected authors in literature who suggest research programmes, and label them as such. Williamson (2000) makes up the NIE's mind, Stanfield (1999) has done so for OIE. In both cases, the programme builds upon the existing hard core; in the case of OIE, it is actually focused on constructed a hard core.

5. Conclusion

After having examined the application of Kuhn's and Lakatos' ideas on the (historical) development of science, no clear picture has arisen. The many comparisons between OIE and NIE, the experiments in building theoretical bridges and the mere fact that for a great part the same phenomenon is being studied do disable the possibility to characterise both schools as pure paradigms. Hence, incommensurability in Kuhn's terms is not fully present. However, it could not be stated that OIE and NIE belong to the same paradigm, as they have clear differences in their scope and method. Incommensurability exists on certain parts of the way of thinking and testing at both sides, but the commensurable elements may breed the ground for a partial integration in the future.

The term paradigm is not the most accurate description of the differences, but the definition of research programmes neither can describe the distinction completely. Whereas OIE scholars have embraced a common scope and methods, their theoretical basis is too weak and incoherent to speak of a hard core, and consequently a protective belt cannot be discerned, too. In NIE this is better possible. In terms of progressiveness, NIE scores better, which may be a good explanation of its success. The drawback, however, is that mathematical rigour and realism are contradictory qualities, so that practical relevance of these explanations may be disappointing. The conscious strive for the pursuance of positive heuristics is a feature of both schools.

Concluding, both philosophers’ views are helpful in studying the development of institutional economics. I suggest the use of the term schools, which is more neutral, given that the ideas of neither paradigm nor research programme are fully applicable here. A somewhat softened use of the idea of incommensurability (Kuhn), in combination with the concept of progressiveness (Lakatos) provides the most accurate description.

There are clear signs that mainly OIE is still in its infancy, despite its age. It is impossible to identify a hard core, but it is likely that such a hard core will develop, now that there is renewed attention for this school. Maybe in a few decades, it will be better possible to use the term research programmes. It is unlikely that paradigm will be the better description then, as integration approaches are being present and commensurability will increase. Lakatos included a normative viewpoint on his research programmes. Luckily, Kuhn did not do that when proposing the concept of a paradigm. Innovation in institutional economics will not come from abandoning one of the two existing ´paradigms´, but by integrating the best of both worlds.

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