

The Role of Definitions in Institutional Analysis

by C. Mantzavinos

I. Introduction

There is hardly a conference on institutional analysis during which, at a certain point, a heated discussion will not start about the proper definition of the word 'institution'. This happens because most participants tend to think that every scientific discussion of institutions should have one true definition of the term 'institution' as a starting point, since this is the subject matter of their analysis. In this paper I want to argue that social scientists who are interested in the study of institutions should not spend a lot of energy quarrelling about the meaning of 'institution', 'organization' and the other terms that are used in the theory of institutions. They should instead concentrate on constructing theories in order to explain the phenomena that they are interested in. Defining the terms that one wants to use is a legitimate part of this theoretical endeavour, but it is by no means as important as most institutional theorists tend to think. I would like to argue in favour of this claim by drawing on a relevant discussion in the philosophy of science which deals with the role of definitions in the process of constructing a theoretical system.

Section 2 offers a discussion of the doctrine of essentialism, which implicitly underlies the quarrels of institutional theorists; section 3 explores the role of nominal definitions in theory formation; section 4 deals more specifically with nominal definitions and theory formation in institutional analysis and section 5 presents my conclusions.

II. The Essentialistic Trap

The discussions among institutional theorists of the real meaning of 'institution', and of the meaning of 'organization' and of whether an 'organization' is an 'institution' or not, in some sense echoes the heated philosophical debate on the problem of universals that took place during the Middle Ages.¹ The issue at stake, however, methodological essentialism, can be discussed independently of the problem of universals. Methodological essentialism is the doctrine that every scientific inquiry should start with the question of the kind 'What is x?' and proceed by giving a detailed answer to this question. In the case of the scientific inquiry of institutions, this question takes the form of 'What is an institution?' or 'What is an organization?'; and methodological essentialists believe 'that a penetrating answer to such questions, revealing the real or essential meaning of these terms and thereby the real or true nature of the essences denoted by them, is at least a necessary prerequisite of scientific

¹ The central metaphysical issue in this debate, which does not need to concern us further here, was whether universal terms like 'state', 'justice', 'energy', etc. denote certain intrinsic properties that are to be regarded as universal objects, whose essences are to be analyzed. According to the 'realists' the universal terms can grasp the essences of those objects, whereas according to the opposing party, the 'nominalists', the universal terms are nothing but labels attached to a set or class of things.

research, if not its main task' (Popper 1957, 29). Approaching the same issue from the viewpoint of the aim of science, one could state the doctrine of essentialism as follows: the purpose of scientific inquiry is to answer the 'What is x?' type of questions, whereby the degree of success of the scientific enterprise is judged according to how well the substances of the objects are cognitively captured and their essences grasped.

Although this type of approach seems to be less characteristic for the scientific endeavours of the natural scientists nowadays, it is still with us in the social sciences.² In the theory of institutions that is of interest here, there is a dispute about whether organizations *are* institutions or not (Khalil 1995). In more sophisticated versions there is an attempt to build more encompassing classifications of institutions. These often take the 'What is x?' question as a starting point. Crawford and Ostrom (1995, 582) remark, for example, that several approaches have been taken to answering the question 'What is an institution?' and after classifying the answers into three categories (the *institutions-as-equilibria* approach, the *institutions-as-norms* approach and the *institutions-as-rules* approach), they attempt to develop an overall classification.

This type of reasoning, however, leads to a cul de sac, mainly because it tends to channel the cognitive capacities of the researcher in a direction that may lead to unproductive results. The belief that there are essences to be grasped is 'liable to create obstacles to thought – to the posing of new and fruitful problems' (Popper 1963/1989, 107). Dealing with a question of the type 'What is x?' can only lead to a more or less accurate description of the qualities of x, but never to a full understanding of the way in which x is connected with other objects of the world. This holds independently of the question of whether x is a natural or a social object.

The alternative to this endeavour is to start with a problem and construct theoretical propositions of a hypothetical character in order to solve the problem. In accord with this view, the scientific activity starts with problems and proceeds with the formulation of conjectural solutions to these problems, i.e. informative guesses about the world which, though not verifiable, can be subjected to severe critical tests. The methodological requirement to deal with the construction of hypothetical problem solutions and to critically test them is productive mainly because it channels the cognitive potential of the researcher in a direction which allows both the acquisition of knowledge regarding the structure of the world and the change of the natural and the social environment (Albert 1978, 27ff.).

If the aim of science is to offer explanations of phenomena that we think are important to understand, then it is clear that scientific activity should aim at providing good answers to 'Why-questions' of the type: 'Why do the planets move in elliptical orbits with the sun at one focus?', 'Why did the Soviet Union collapse?', etc. (Hempel 1965, 334ff.). This view of science as an activity aiming at providing answers to 'why-questions' and subjecting them to

² Some theorists propagate, for example, what is elsewhere called the "method/subject-matter" argument, i.e. the methodological postulate that one should adjust the method of inquiry that one uses to the subject matter at hand. According to this notion, if one answers the question 'What is x?' with 'x is a social fact', one should employ a different method of inquiry, i.e. the hermeneutic method, in order to grasp x. For a critique of this kind of approach see Mantzavinos (2005, ch. 1).

critical tests goes hand in hand with the position diametrically opposed to methodological essentialism, namely with methodological nominalism. According to methodological nominalism the task of science is to describe how things behave and thus new terms are to be introduced wherever necessary in order to facilitate the accomplishment of this aim.

In the analytical philosophy of science, the fruitfulness of methodological nominalism is nowadays beyond any serious doubt.³ Departing from methodological essentialism, however, does not necessarily imply a neglect of the importance of appropriately defining the concepts that one uses when he solves his theoretical problems. But far from trying to grasp the essences of the objects by merely defining them, contemporary philosophy of science focuses on the role of definitions in the process of constructing a theoretical system⁴. We shall now turn to this.

III. The Role of Nominal Definitions in Theory Formation

The distinction made in traditional logic between 'real' definitions, which capture the essential characteristics of an entity, and 'nominal' definitions, which are conventions that introduce alternative notations for a given linguistic expression, is overcome. The focus lies instead on the role of nominal definitions in theory formation, and we will start the discussion by giving a short overview of the way nominal definitions are understood in philosophy of science.

A *nominal definition* stipulates something to the effect that a specified expression, the *definiendum*, is to be synonymous with a certain other expression, the *definiens*, whose meaning is already determined. In a classic monograph, which is still the most accurate and penetrating discussion of the issue, Hempel stresses that a nominal definition of a term has to satisfy one basic requirement (1952, 6): '[I]t must enable us to eliminate that term, from any context in which it can grammatically occur, in favor of other expressions, whose meaning is already understood. In principle, therefore, signs introduced by nominal definition can be dispensed with altogether: 'To define a sign is to show how to avoid it.'⁵

The vocabulary of a theoretical system includes all the words or other signs which appear in the sentences of the system. The vocabulary of a theory falls into two classes, the *defined terms*, i.e. those terms that are introduced by nominal definitions in terms of other expressions in the vocabulary, and the *primitive terms* or *primitives*, by means of which all other terms of the vocabulary are ultimately defined.⁶ The primitives are not defined within the theory, but they have normally a specific meaning, often derived from their use in ordinary language. The fundamental requirement for nominal definitions that was mentioned

³ See e.g. Stegmüller (1983) and Psillos (2002).

⁴ For a book lengthy discussion of definitions see Essler (1982). See also the interesting discussion in Belnap (1993).

⁵ The last sentence is a quotation from Quine (1940, 47).

⁶ The vocabulary of a theory also includes logical terms such as 'and', 'not', 'if...then' etc. but we will not discuss them here.

above is called *the requirement of the univocal eliminability of defined expressions* and can be formulated as the maxim that nominal definitions must permit the elimination of all defined terms in favor of primitives.⁷

It follows that everything that can be said with the help of defined terms can also be stated by means of primitives alone, but definitions are important because the formulation of complex theories exclusively in terms of primitives 'would become so involved as to be unintelligible. Thus, not even the moderately advanced scientific disciplines could be understood – let alone actually have been developed – without extensive use of nominal definition' (Hempel 1952, 17). The requirement of univocal eliminability results in precluding the possibility of giving two definitions for the same term. It also implies that the definitional system is noncircular since every circularity would clearly preclude the possibility of the complete elimination of the defined terms.

Now, the nominal definitions, being conventions which introduce alternative notations for a given linguistic expression, have two important implications: i) *nominal definitions cannot be true or false*; and ii) *nominal definitions assert nothing about the real world*. These two implications of the specification of nominal definitions, as conventions, are a reflection of the more general thesis regarding the aim of science: in accord with a view that science is the activity aiming at solving our problems and at increasing our information about the real world, definitions do not have an autonomous cognitive value but only a derivative one, dependant on the information potential of the corresponding scientific hypotheses. Correspondingly, only scientific hypotheses can be true or false, because only they inform us about the world.

If formulating scientific explanations is our means of grasping the structure of the world, then the role of definitions is to be discussed in the light of their function within scientific explanations. The first general plausible requirement for the introduction of concepts is that they have *empirical import*, i.e. the concepts should be formulated in such a way that the whole system of hypotheses, which constitutes the theoretical system, can be tested. It is not necessary, in other words, that only operational definitions, i.e. definitions that possess a direct empirical interpretation, are used;⁸ instead, the concepts should be connected to other terms of the theory that are formulated in experiential terms and to the laws of the theoretical system in such a way that these laws can be tested empirically.

The second requirement in light of which the value of definitions can be judged is their productiveness (or theoretical fruitfulness), i.e. their *theoretical (or systematic) import*: they must facilitate the formulation of explanatory and predictive principles in the form of

⁷ This requirement was first formulated by Blaise Pascal and later elaborated by the logician S. Lesniewski.

⁸ In fact, 'operationalism', which demanded that all concepts or terms used in science should be based in one way or another on direct observation, has largely been abandoned because it is unduly restrictive: it is rather 'fictitious concepts', i.e. concepts to which nothing corresponds in experience that often enable science to interpret and organize the data of direct observation most productively (Hempel 1952, 31). But those fictitious concepts should be expressed in such a way that the theoretical hypotheses of the system can be subjected to testing.

general laws. This requirement poses definite limitations on the arbitrariness of definitions. The productive potential of the definitions is judged by the empirical content of the corresponding hypotheses and by their adequacy for constructing new hypotheses.⁹ In economics, for example, the scientific value of the diverse definitions of the quantity of money (M1, M2, M3) in monetary theory depends primarily on their adequacy for providing the basis for constructing hypotheses that explain the mechanism for transmitting the monetary changes into real economic activity.

To summarize: (nominal) definitions cannot be true or false since they assert nothing about the real world. There are two basic standards according to which the quality of definitions that are introduced into a theoretical system should be judged: i.e. their empirical and their theoretical import. The implication associated with the requirement of the theoretical import is that the scientific value of the definitions is to be judged by their adequacy in providing the basis for the construction of testable hypotheses. In the next section we shall try to explain how these requirements apply in theory formation in the field of institutional analysis.

IV. Nominal Definitions and Theory Formation in Institutional Analysis

Since definitions do not assert anything about the real world, the terms 'institution', 'organization', etc., which are used in institutional analysis, cannot be true or false. The quasi-intuitive rejection of the above thesis among institutional theorists and other social scientists is due to the fact that these terms had an ordinary usage in everyday language before entering the scientific vocabulary. (This is true for many concepts that are used in the social sciences; for example, 'group', 'money', 'status', etc.). When these terms are used in everyday language, they have some specific meanings according to the context in which they are most frequently used; when they are introduced into the vocabulary of the scientific discipline of institutional theory, however, a new, more precise interpretation of the terms is normally given. This procedure is quite often misunderstood, and it is consequently expected that the definiens of a term should necessarily confer the meaning of a term in its pre-scientific use (Opp 1995, 105). When this does not happen, institutional theorists tend to think 'that the definition is not true'. As we have seen above, however, this is fallacious, because nominal definitions possess solely a conventional character. A great part of the prevailing confusion on this issue is surely due to this simple misunderstanding.

Another type of misunderstanding is due to the essentialistic trap discussed in detail in section II. A large number of institutional theorists tend to think that the definitions used in institutional analysis somehow grasp the essence of the objects of the real world.¹⁰ Abandoning the underlying essentialism is in any case the first necessary step towards

⁹ See the illuminating discussion in Opp (1995, 130ff.).

¹⁰ This notion is in fact characteristic not only for some institutional theorists, but generally for a large number of social scientists. See Albert (1998, 128f.). However, to be fair it is important to note that some authors do analyze institutions explicitly in terms of what they do rather than of what they are.

shifting the focus away from the 'real' definitions to 'nominal' definitions. In a second step, one has to consider that when introducing definitions into a theory of institutions, the same two criteria apply as in all nominal definitions: i.e. they need empirical and theoretical (or systematic) import.

Most developed theories of institutions tend to satisfy the criteria of empirical import, i.e. the requirement that the concepts should be formulated in such terms that the whole system of hypotheses that constitute the theoretical system can be tested.¹¹ What seems to be methodologically inappropriate, however, is the attempt to connect concepts to empirical designata in the context of middle range hypotheses, which are not incorporated into a theoretical system. In other words the low level of development of institutional theory in comparison to other theories and the absence of an inclusive framework sometimes leads the students of institutions to a sterile empiricist stance in accord with which they try to directly formulate low-range hypotheses in order to immediately connect them to empirical reality. The absence of a general theoretical framework leads to futile attempts to discover rules of correspondence for every used concept, whereas such an enterprise should be undertaken only for the basic concepts of the theory.

However, satisfying the second requirement – i.e. of supplying definitions with theoretical (or systematic) import – seems to cause the most problems. There is a lack of uniformity of usage of even the most basic terms, such as 'institutions' and 'organizations'. The reason for this diversity in usage is that the study of institutions is a genuinely interdisciplinary enterprise: 'New Institutionalism' is a broad problem area in which sociologists, political scientists, economists, lawyers, anthropologists, psychologists and students of organizations all offer theoretical solutions based on different methods and drawing on different scientific traditions (Mantzavinos 2001, 65ff.). An additional difficulty – which is in fact characteristic for most social sciences – is the lack of an axiomatic system which could offer the possibility of more rigorously delimiting the range of concept interpretation. Game theory is of course an axiomatic theory that serves this purpose; a number of institutional theorists, however, deny its appropriateness for the study of institutions.

The application of the second requirement for institutional analysis demands that the definitions used facilitate the formulation of explanatory and predictive principles in the form of general laws. According to this standard, those definitions should be disregarded that are used in theories of institutions that have been shown to have little empirical content. One such example is functionalism, which long prevailed in the social sciences. Another is the more recent endeavour of Searle (1995; 1998 ch. 5) to provide an analysis of the linguistic acts by which an institutional fact is created. This cumbersome though interesting attempt to provide a definition of institutions clearly fails to satisfy the requirement of theoretical import since

¹¹ Just to name one example from the different disciplines, see North (1990) for economics, Hall and Soskice (2001) for political economy, Knight (1992) for political science, Powell and DiMaggio (1991) for sociology, Ensminger (1992) for anthropology, Ellickson (1990) for law and March (1999) for organizational studies. In all these cases, the definitions of the concepts possess a clear empirical import, since at some point the theories that include them are successfully tested empirically in one way or the other.

Searle neither provides an explanatory theory of the emergence and impact of institutions nor any empirical evidence in favor of his framework.

In the case of the definitions that are used in theories that make use of empirical content, no clear decision in favor of one or another definition can be made as long as the theoretical frameworks have not been refined and empirically tested. Two methodological maxims seem reasonable, however: *i) institutional theorists should concentrate their efforts on producing and testing theories rather than on elaborating definitions.* Those theories that are shown to have more empirical content will eventually be adopted,¹² which by implication also means that the definitions of the theories closer to truth will eventually be adopted.¹³

ii) Institutional theorists should avoid constructing extensive definitions of institutions by compiling characteristics that seem to be important in different theories of institutions. In those cases where the aim is to provide a theoretical synthesis – which is of course a very productive and important enterprise as such – a synthesis of theoretical systems should not be confused with a synthesis of definitions. As a matter of fact, constructing lengthy definitions of what constitutes an ‘institution’, based on how the term is being used in different scientific systems,¹⁴ makes it more difficult – not easier – to attain a genuine theoretical synthesis endowed with great explanatory power. The opposite strategy of using a parsimonious definition of an ‘institution’ seems to be a better way to attain a theoretical synthesis of the knowledge produced in the different scientific disciplines that deal with institutions. The reason is that lengthy all-inclusive definitions usually do not only serve the function of a notational convention; instead, they assert, by implication, certain empirical statements. These all-inclusive definitions normally combine the functions of both concept formation and theory formation, or, in other words, they secretly and therefore illegitimately introduce statements that have the character of empirical laws into the definitions, and they should therefore be avoided.

V. Conclusion

To summarize and amplify: the doctrine of methodological essentialism channels the creative capacities of the scientists in an unproductive direction. Scientific explanations are answers to ‘Why-questions’ not ‘What is x?’ questions. (Nominal) definitions cannot be true or false, and they assert nothing about the real world. If scientific explanations are our means of capturing the structure of the world, then the role of definitions is to be discussed in the light of their function within scientific explanations. There are two basic requirements for concept formation in empirical science: their empirical and theoretical (or systematic) import. In the case of institutional analysis, the criterion of empirical import is usually satisfied, and

¹² I cannot discuss the problem of comparison between theories here because a discussion of details would lead me too far beyond the scope of the present survey.

¹³ This is in fact the reason why the definition of institutions as the rules of the game (see e.g. Mantzavinos/North/Shariq 2004) tends to be adopted by many students of institutions: the corresponding theory has greater empirical content.

¹⁴ For such an attempt see Scott (2001, 48).

sometimes even too narrowly followed. In the theory of institutions, the attempt to satisfy the criterion of theoretical import is faced with specific difficulties: namely, the study of institutions is an interdisciplinary enterprise; and there is a lack of an accepted axiomatic system.

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