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## The theory of Kuhn Paradigm and the legal sciences. An outline of the problem

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### ABSTRACT

This publication defines and characterises the theory of Kuhn's paradigm and tries to show its place and role in the legal sciences. The Kuhn's scientific achievements are based mainly on the history of the exact and the natural sciences. In view of the fact that the dynamics of the legal development is accelerating more and more, the "legislative fecundity" is even dizzying, as the mantra returns the question, can his theory be used in the legal sciences?

**Keywords:** the paradigm, the Kuhn's theory, the legal sciences

### 1. INTRODUCTION

The purpose of this analysis is to define and characterise the Kuhn paradigm theory and attempt to show its place and role in the legal sciences. Although the Kuhn's scientific achievement is mainly based on the history of science and natural sciences, hence the question constantly arises whether his theory can be used in the legal sciences? Therefore, it is important to analyse how the paradigm has been characterised over the course of history. In order to implement the above assumptions, the author used the method of reviewing literature as to the positions on the discussed subject.

Thomas Kuhn is widely considered to be one of the most influential historians and philosophers of science of the 20th century. His influence on common views of scientific

development has been enormous. His most famous work, *The Structure of Scientific Revolutions* is at the top list of cited academic books [1].

## **2. THE CONCEPT AND THE ESSENCE OF THE PARADIGM.THE THEORY OF THE PARADIGM ACCORDING TO THOMAS KUHN**

The term "paradigm" derives from the Greek language and means as much as: an example, a model understood as the original model of sensory things, a schematic model having a didactic value, providing a clear and direct view of a particularly complex research [2]. Originally, it only presented a pattern of a grammatical variety understood as a set of the declension or conjugation forms appropriate to a given type of words [3]. Going further, the term "paradigm" to the philosophy of science was introduced in the eighteenth century by Georg Christoph Lichtenberg who described it as some fundamental patterns of an explanation in the physical sciences on which the networks of explanations are built up [3, 4].

As is clear from the above the concept of the paradigm has been used mainly in the linguistics throughout the history. Thomas Kuhn, author of *Two poles*, took over the paradigm's pattern but expanded it to include the model significance and the prevailing scientific theory. In his work he presented the paradigms as generally the approved achievements in the field of science which in the specific conditions give the modelling problems and the solutions to the community of scientists [5]. The paradigm understood in this way appears as defined and approved in a given place and time by a group of the theoretic scientists or a set of the scientific theories [6].

Examples of such an approach are the theories formulated within the natural sciences, e.g. the Newton's physics or the heliocentric system [7]. It needs to be emphasised that the paradigm is somewhat in two areas. *Primo*, it functions as a specific pattern of the grammatical variation which should be understood as the providing model practices that are reproduced in the course of further research. *Secundo*, the paradigm indicates the specific problems to be solved in the research process, i.e. it determines a specific form of further research. The research carried out in this way consists mainly in the concretisation of specific concepts and the extraction of certain consequences from the theory. As a result, as a result of such actions, some changes also take place in the very essence of the paradigm. The discrepancies observed within the paradigm, Kuhn is described as the appearance of anomalies [5].

These anomalies are the situations in which the subject of the research shows some inconsistencies with the forecasts coming from the assumptions of the paradigm. It is worth emphasising that the basic paradigm of Thomas Kuhn is distinguished by the three basic assumptions. The first of these is the theory connected with the practice, the second is the research aimed at the concretising theory and dealing with the following consequences, and the third is an anomaly - the aforementioned changes, the incompatibilities occurring in the paradigm itself. Once again, it is necessary to emphasise in this place that anomalies do not constitute the end of the paradigm existence, they are not even some symptom of its crisis. However, if too many anomalies appear in a given situation and the research process will not be able to cope with their solution in the field of practices applied so far, then these anomalies may be rejected as the result of undermining their credibility [8].

This phenomenon ultimately results in replacing a given paradigm by some other one. In his concept Kuhn describes these situations as "scientific revolutions" [5] which are the separate incidents in the process of science development, under which the old paradigm is replaced in a specific part or entirely by a newly shaped paradigm that can not be put up in accordance with the then [5].

The concept of a developing science as a result of the scientific revolutions based on the paradigm shifts, sowed a storm in a scholarly environment[9,10], as a result Thomas Kuhn corrected his approach[11, 12]. Because the nor do scientists normally aim to invent new theories, and they are often intolerant of those invented by others [13]. Scientific theories: "perhaps that deep impression has effected too great a reaction; for that there is more to those theories, than was once thought does not mean that they are immune to criticism—that there are not good reasons for their abandonment and replacement by others." [14].

The changes made by Kuhn almost led to the return to the classic semantic version of the paradigm defined as a certain model or a pattern. Because Thomas Kuhn was presenting his modernised perception of the paradigm, raised the importance of the basic concepts, that is : the scheme and the model, thus exactly what sorted out the scientific practices and produced the thought patterns. In this way, Kuhn's modernisation of his basic concept led to the fact that the most important research field in the paradigm analysis are the scientific practices and the thought patterns. Consequently, it must be stated that the original moments of the paradigm change as follows. The paradigm used in the paradigm's first moment as a scheme and model. It is a shot in a narrower sense of the word [5].

It sets out the scientific practices and the thought patterns that lead to determining the theory. The second moment of the paradigm is the continuation of the concretisation of the scientific theories together with its entire conceptual basis and the further search for consequences resulting from the paradigm [5]. The last third moment of the paradigm is the anomaly, that are the situations in which we are dealing with the incompatibility of the predictions that we drew from the paradigm [5].

Kuhn at the beginning of his work The structure of scientific revolutions undermines the current conviction about the cumulative and the evolutionary nature of science, claiming that it is not a collection of facts, theories and methods presented in textbooks, to which the scholars are trying to introduce the new elements from time to time and the scientific progress it is not just about gradually adding some elements to the ever-growing resource of the technology and knowledge [5].

Thomas Kuhn defines the concept of a paradigm as "universally recognised the scientific achievements that at some time provide problem for the scholarly community with the modelling problems and solutions" [5]. The use of this term in many senses was often accused by his critics. Among other things, Masterman pointed out that Kuhn uses the concept of a scientific paradigm in twenty-one senses in the Theory of Scientific Revolutions [15-16]. In the scholar's point the development of knowledge takes place in three stages. In the first stage which Kuhn called the "the period of normal science", the development and the application of a given paradigm takes place which is recognised by the majority of the scientific community as universally applicable.

The paradigm and the normal science are inextricably linked - the paradigm sets the boundaries of normal science and normal science updates and articulates the paradigm . The second stage takes place after some time which is called the phase of crisis or revolution when the normal science, i.e. the one practiced under the current paradigm, is unable to answer the

existing problems and doubts. The scholars encounter facts that can not be dealt with in the interpretation as the results of experiments do not agree with the predictions and all attempts to deal with this type of difficulties with the use of theoretical means do not bring the desired results. Kuhn calls these unexpected difficulties the "anomalies." Then the last stage of the development of science is to overcome the "crisis" which is achieved by adopting a new paradigm or several competing paradigms, among which the one that best deals with the anomalies existing within the previous canon of science. So Kuhn proved that believing in the linear development of science is quite naive. As he writes in his work:

"The transition from a paradigm in a state of crisis to another from which a new period of the normal learning may emerge is not a cumulative process, it does not follow the elaboration or the extension of the old paradigm. It is rather a rebuilding of a given field from the scratch, changing some of the most elementary theoretical generalisations and many paradigmatic methods and the applications. During the transition period, the problems that can be solved by the old and new paradigm overlap to a large extent but never completely " [17].

Carl Hempel, on the other hand, has suggested that Kuhn's descriptive account of the scientific process might be supported by some sort of sociological functionalism [18-22].

So with the elapsing time this new paradigm in the scientific community becomes more and more consolidated, ending the scientific revolution and then, as the scholar claims, the whole process begins again [23]. Giere supports this interpretation each of their own unique weightings of and configurations for theory choice need only be in conformity with the general criteria which bind the community as a whole to the new paradigm rather than to rival paradigms [24].

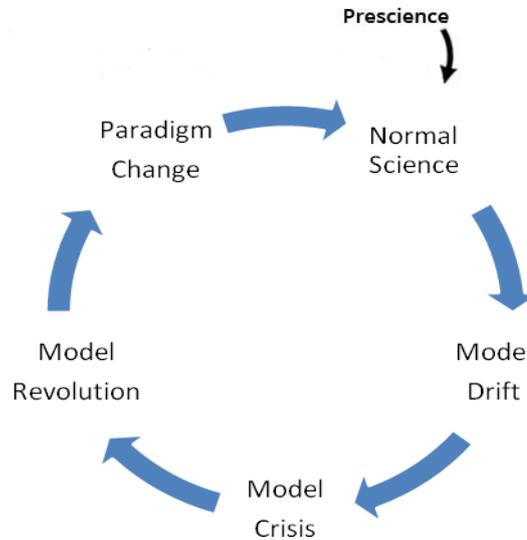
Quoting Kuhna:

„A scientific theory is usually felt to be better than its predecessors not only in the sense that it is a better instrument for discovering and solving puzzles, but also because it is somehow a better representation of what nature is really like. One often hears that successive theories grow ever closer to, or approximate more and more closely to, the truth. Apparently generalizations like that refer not to the puzzle-solutions and the concrete predictions derived from a theory but rather to its ontology, to the match, that is, between the entities with which the theory populates nature and what is “really there”. [12], (Fig. 1).

Also, progress, develops from the matter of earlier accomplishments. Whereas in the postscript of “The Structure of Scientific Revolutions,” Kuhn asked us to imagine a tree of scientific progress that traces a line of development from primitive beginnings, he develops the analogy further in his “The road Since Structure” essay:

“After a revolution there are usually (perhaps always) more cognitive specialties or fields of knowledge than there were before. Either a new branch has split off from the parent trunk, as scientific specialties have repeatedly split off in the past from philosophy and from medicine.[...]. As time goes on, however, one notices that the new shoot seldom or never gets assimilated to either of its parents. Instead, it becomes one more separate specialty, gradually acquiring its own new specialists' journals, a new professional society, and often also new university chairs, laboratories, and even departments. Over time a diagram of the evolution of scientific fields, specialties, and sub-specialties. This comes to look strikingly like a layman's

diagram for a biological evolutionary tree. Each of these fields has a distinct lexicon, though the differences are local, occurring only here and there. There is no lingua franca capable of expressing, in its entirety, the content of them all or even of any pair.” [25]



**Fig. 1.** The Kuhn cycle  
Source: own elaboration

### **3. THE THEORY OF THE SCIENCE DEVELOPMENT AND THE LEGAL SCIENCES**

The term of paradigm turns out to be useful also in the works devoted to the social theories. But his thorough analysis has raised the doubts since the beginning whether the application of this idea in the social sciences is legitimate [5]. Kuhn himself expressed the doubts as to whether any of the disciplines of the social sciences had already achieved any paradigm [5].

Although Kuhn developed his theory of the development of sciences in terms of the natural sciences, it is necessary to return to the question whether this theory can be applied to the legal sciences which are included in the social sciences. This issue is debatable in the philosophy of science. The answer to this question seems to be given in part by the scholar himself since he recognises that the characteristic feature of the mature science is the practice of the normal science based on a paradigm and because the paradigm in a broader sense includes some elements that occur in the social sciences (like the models, the values, the patterns) and even the symbolic generalizations), on this basis it can be concluded that the social sciences are just as scientific as the natural sciences [5].

The word ‘science’ is used to refer to a wide array of things. Niiniluoto, for example, points out that:

“The notion of science may refer to a social institution, the researchers, the research process, the method of inquiry, and scientific knowledge.” [26]

A specific field of the knowledge can be called the science when it has a scientific methodology [27, 28].

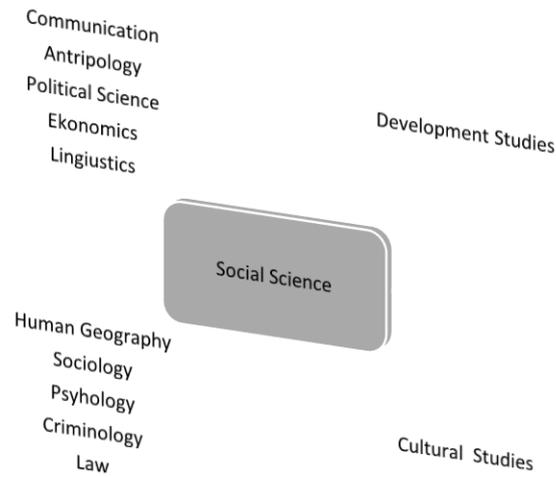


Fig. 2. The Social Science  
Source: own elaboration

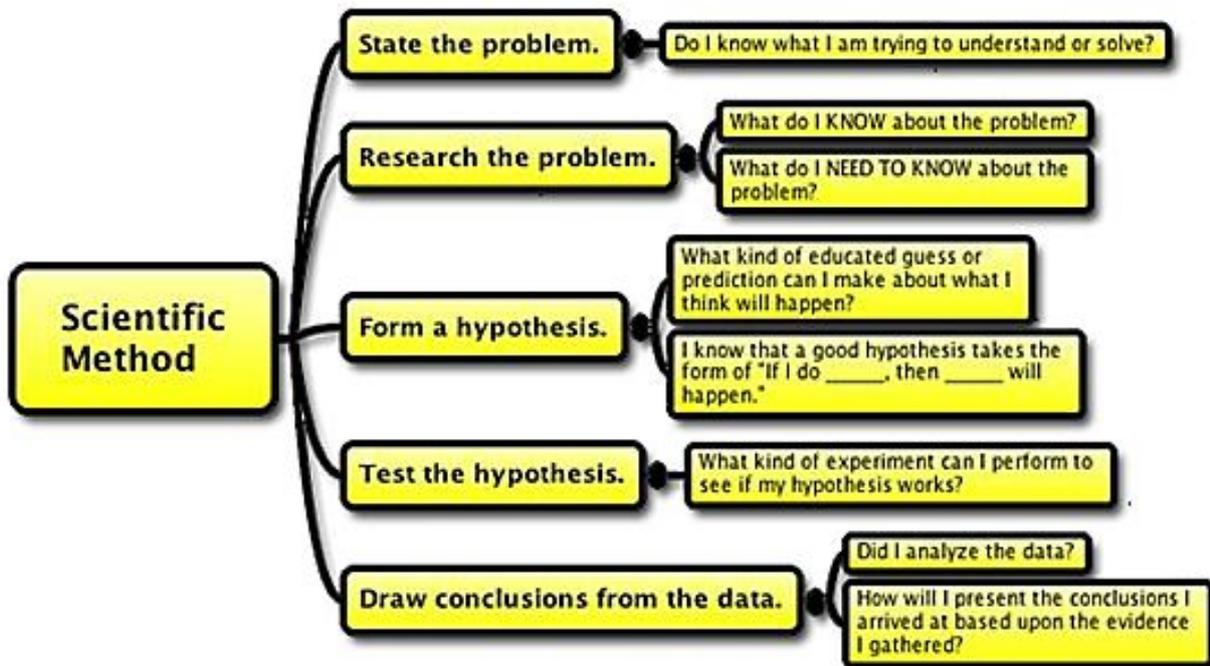


Fig. 3. Project: Scientific Method

Source: <https://students.ga.desire2learn.com/d2l/lor/viewer/viewFile.d2lfile/1798/12842/scientific-methods11.html>

The status as genuine sciences of what we now call the social and human sciences has widely been held in doubt. Such disciplines lack the remarkable track record of established natural sciences and seem to differ also in the methods they employ [1].

It is obvious that the legal sciences mean in the narrow sense the jurisprudence. They are included in the group of the social sciences, or more precisely, the humanities. Their research subject is the analysis of the legal norms and the political and legal institutions. Globally, the legal science is sometimes called the jurisprudence (as the dogmatic of law in the continental tradition, in the Anglo-Saxon tradition as the general science of law [27, 28].

In addition, the main features of the humanities include, above all, the subject of the study, that is the human being which at the individual level is an individual being and at the level of society not identical. The human, as an extraordinary being, creates a unique culture and uses the unique symbols, and is also entangled in a network of the values, the attitudes and the judgments. Therefore, in a situation in which the care of the good of every human being prevails, it seems impossible to conduct the researches according to the principles of the objective epistemology. So it is a clear humanistic phrase, in which every human being is a value that requires the humanistic, the individual and the contextual understanding. So the social sciences, including the law, are subjects to the development processes related to the changes of a globalising nature but also resulting from the construction of their identity as a science, concerning, among others, the understanding of the knowledge. It should be noticed that the whole difficulty lies primarily in the fact that the researches in these sciences include the heterogeneous aspects. Because the law is a social product. It is very important to emphasise that it can be changing, how changeable the society is. Because, as the sociologists say, the society is not, only the society is becoming and so it is dynamic. The study of the reality of society is very complicated due to this multidimensionality, the dynamism because we can analyse this social reality on very equal levels from very different perspectives.

*Ad vocem*, in the legal sciences a galaxy of paradigms developed which partly fit in with Kuhn's concept. One can not lose a sight of the fact that an individual approach to the social (humanistic) sciences is also noticeable in the work of the "Structure of scientific revolutions". Namely, from the author's interpretation one can deduce that the jurisprudence is a community that is not connected by the naked eye visible an isolation from the demands of society and everyday problems of the urgency as is the case in the natural sciences [5].

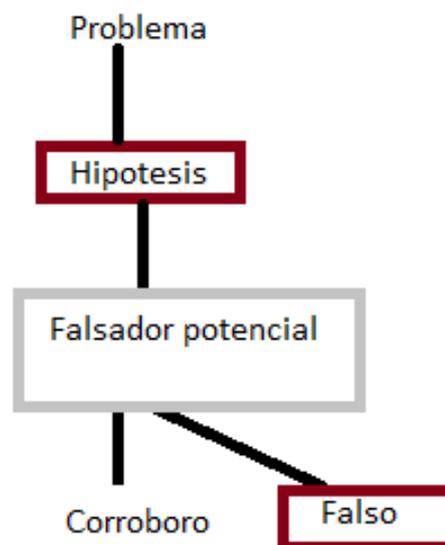
The activity of the lawyers is aimed at the current research problems that haunt the practice of applying the law and in this way gradually, linearly develop the range of their interest. As Kuhn remarks, the situation prevailing in the humanities is intensified by the adopted method of the vocational education which presupposes presenting the full perspective of a given issue in the textbooks, together with the reference to the historical concepts (no longer valid). This shortage of the assimilation of the scientific community from the "roots" of their discipline allows the choice of the concepts based on the "baggage of previous experiences", *eo ipso*, such a state is not conducive to popularising the controversial and the innovative solutions [5]. Unfortunately, this also includes the scheme of returning to the legal circulation positions previously rejected and criticised which at some stage of development are in demand. On the basis of natural sciences it is more difficult for such a procedure, resembling the effect of a labyrinth.

The Kuhn's views were widely discussed and strongly attacked. In the second edition of the "Structure of Scientific Revolutions" he eased some of his theses but their basic pronunciation has not changed. It should be remembered that they mainly concerned on the

natural sciences, not the social sciences and the humanities, to which, however, the legal sciences, which are the focus of this work, belong.

This reservation is very important if one takes under a consideration the specificity of the social and humanistic sciences and their basic feature – the multi-paradigmatic. Unlike to the natural sciences where the new paradigm cancels its predecessor, just as the Einstein's mechanics "negated" the Newtonian mechanics, the emergence of a new paradigm does not exclude the "operation" of the old paradigm from the social sciences and humanities. Kuhn claimed that here there is a kind of the "paradigmatic wars" [17, 29], that is, fighting each other's scientists from the various camps and denying others the character of science which can not be interpreted as a rational process in which the development of science should be expressed and more as a sort of the rivalry of the political parties [9].

Another illustrious scholar, Karl Popper, also drew an attention to the problem of the paradigm in the science who understood the essence of the problem differently. He emphasised that a due to the specificity of the social sciences and the humanities, the mechanism of their development will be different than in the case of the natural sciences. In his opinion that in the social sciences there is not basically a paradigm that would become completely out of the date as is the case in the science. Popper assumption supported the thesis that in the social sciences at the same time there may be several paradigms at the same time which may compete with each other or be complementary to each other. Moreover, the paradigm has a residual character, i.e. one paradigm leaves its mark in another and the new paradigms partly take over the assumptions of their predecessors. According to Popper's concept, the new sciences (the social, the humanistic) do not arise through the revolution but rather through the integration [10].



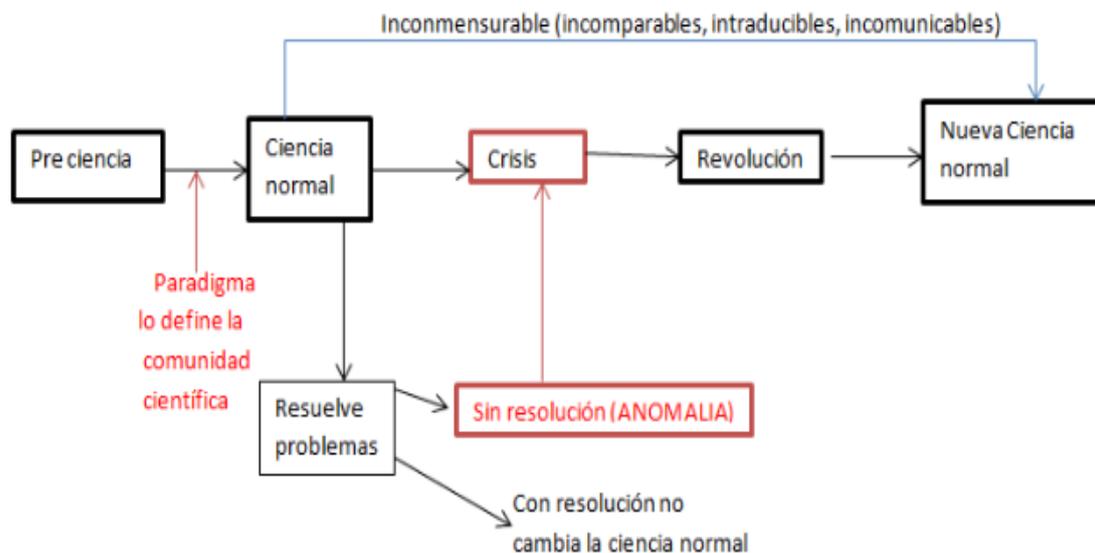
**Fig. 4.** Learning according to Poppera

Source: <https://www.taringa.net/posts/apuntes-y-monografias/17961246/Resumen-para-final-de-Cbc-Ipc-astivera-bosch.html>

According to Karl Popper, science evolves from observing data through experiments. These experiments are verified when we repeat, letting infer general laws about the nature of reality. Popper shows, therefore, that progress is made not by verifying facts, but by attempting to falsify the results of other theories. [30]

Scientific theories, he claims, are the guesses for solving problems and can not be verified by empirical evidence. [31] The transition from induction to deduction also means that instead of moving from particular to universal, science derives from "universal (ie, scientific hypotheses) into concrete ones". [32, 33]

Popper admitted that " it is not incorrect to say that science is ... an `instrument' whose purpose is ... to predict from immediate or given experiences to later experiences, and even as far as possible to control them [34]. But, for him, scientific theories were not *merely* instruments -- nor were they merely linguistic devices, as the Logical Positivists liked to claim. "They are genuine conjectures about the world," he said [35].



**Fig. 5.** Learning according to Kuhn

Source: <https://www.taringa.net/posts/apuntes-y-monografias/17961246/Resumen-para-final-de-Cbc-Ipc-astivera-bosch.html>

In addition, despite various approaches Popper and Kuhn seem to agree on the significance, for scientific advance within any particular problem area, of a close-knit verbal community with precise rules of communication. As Popper explained it, "In order to avoid speaking at cross-purposes, scientists try to express their theories in such a form that they can be tested, i.e. refuted (or else corroborated) by experience [36].

Undoubtedly, in the methodology of the social sciences, a number of the paradigms regarding the legal sciences have been developed so far which differently cover the fundamental issues for this field of science. The four basic paradigms in the field of the legal sciences include:

- 1) The theoretical paradigm ;

- 2) 2)The legal and the natural paradigm;
- 3) The paradigm positivistic;
- 4) The sociological - psychological paradigm (the realistic).

Probably in the humanities to which the law belongs, the leading one is the mixed form, and thus the penetration, the cooperation of the various paradigms.

Of course alongside the four aforementioned paradigms, there is a whole multitude of the schools, the methodological directions and the theories aiming at the explaining the essence of the law. Each of them contributes to enriching the view of the law and everyone relies to some extent on the ideological assumptions of the above-mentioned paradigms.

#### **4. CONCLUSIONS**

Summing up after the Universal Encyclopaedia of the Philosophy, the concept of the paradigm is shaped as follows: "(Greek *parádeigma* – the scheme, the model; Latin *paradigm* – the pattern, the example) - the original definition of the Platonic idea which was the normality of the variables; nowadays: in the linguistics - a set of the declension or the conjugation forms appropriate to a given type of the expression; in the rhetoric - an exceptionally clear and typical example illustrating this issue" [37].

Thomas Kuhn believed that this approach is too narrow. Because it did not present all the assumptions needed to describe the evolution of the science and fit it to this range [7]. Since the publication in 1962 by Thomas Kuhn of the "Structure of the Scientific Revolutions", the philosophy of perceiving the development of science has changed, especially in the space of the natural disciplines, on the analysis of which it was developed. It is safe to say that the storm triggered the undermining of the current vision of the science as a uniform (the linear) process and the cumulative acquisition of the knowledge, and replacing the procedure of the confirmation or the falsification with the revolutionary process. Kuhn stated that the existing stereotypical perception of the scholars' activities does not guarantee the progress, eliminating the mistakes made in knowing the world. He deemed the science as a set of the facts, the theories and the methods which are then characterised by increasing the detail in the process of the selection, the evaluation and the criticism [5].

What has been heard so far, leads us to the reflect that one can, of course, see many points of the contact in the Kuhn theory which should be transferred to the social sciences. In turn, Karl Popper noted that the individual paradigms are rather complementary to each other. The legal sciences, i.e. a collection of the social sciences and the humanities dealing with the law probably fit into both positions. Although the advocates of the particular paradigms struggle intellectually with each other but *notabene* the competing "schools" of the law complement each other, they broaden their perception of the law as a science [9]. Although it must be admitted that the dynamics of the legal development is accelerating more and more, the "legislative fecundity" is even staggering at a pace of fire. This means that everything has not been said in the law science. Well, maybe it's time for an another paradigm revolution and the emergence of a paradigm. „Ideas that require people to reorganize their Picture of the world provoke hostility” [38].

Realising that the problem addressed in the workshop is so complex and roomy in the content, that is why it was necessary to limit the spectrum of the issues addressed to its

outline. “We may have to relinquish the notion, explicit or implicit, that changes of paradigm carry scientists and those who learn from them closer to the truth”[12].

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