Bartłomiej Kucharzyk

## Expert evidence from an interdisciplinary perspective

In court trials – both in continental Europe and in Anglo-Saxon countries – expert opinions ordered by the court or submitted by the parties (called expert witness testimony in the US – both can be referred to as expert evidence) play a significant role. This applies to both criminal and civil trials. Expert evidence presence in the law stems from a trivial fact: since in our society – so far? – judges (and jurors) are human beings, they cannot know everything, and are susceptible, like all humans, to various cognitive biases and fallacies, extensively described by contemporary psychology. The use of expert opinions to determine the facts (or the most likely version of events) allows courts to make rational, reasonable and socially acceptable judgments in cases involving a variety of specialized fields (not just those in which judges have relevant training and experience).

A special category of expert opinions are those that use scientific knowledge and method (so-called scientific evidence). Scientific knowledge is widely regarded as the ideal of knowledge, but it is important to remember that the production of this kind of knowledge does not come easily. It often requires the design of complex experiments and the search for subtle regularities in huge data sets. Moreover, science is an area of various approaches, methods, views and entire paradigms – the path to well-founded scientific knowledge sometimes requires long wandering and challenging the accepted hypotheses. And at the same time modern science is developing extremely rapidly – theories that only a few years ago had a place in textbooks today may have only historical significance.

All this means that the use of expert opinions raises certain challenges within the law. It is sensible, for example, to raise the question of who an expert in a certain field actually is and what should characterize them. One can also ask whether and in what situations an expert may not be credible. After all, one should also take into account the fact that experts are also human beings and therefore may be prone to the same cognitive biases and fallacies to which judges and other humans are subject. Therefore, is it possible for judges to rationally and accurately evaluate the expert evidence submitted to them, despite their lack of knowledge in a particular field? What psychological factors and phenomena can negatively affect the court's evaluation of expert opinions?

The purpose of this project is to analyze the challenges of expert evidence. The analysis will be carried out both from the point of view of legal theory and from the point of view of modern science, especially psychology, and philosophical theories that show how scientific knowledge is formed and what are the limitations of the methods used by science. We will also consider whether conclusions can be drawn from this analysis that could find theoretical or practical application. Does the law satisfactorily regulate the use and evaluation of expert (especially scientific) evidence? Or should we change something in light of scientific and philosophical knowledge?

These fascinating – and socially vital – questions have so far not been the subject of comprehensive reflection, and this project aims to change that. To accomplish that, several important steps will be necessary.

At the first stage of the project, we will examine the status of expert evidence in continental and common law, make comparisons between the two traditions, and construct a general legal model for the use and evaluation of such evidence. At the second stage we will study the epistemological (that is, related to the nature of knowledge acquisition) aspects of expert opinions. We will consider whether concepts and ideas in the field of theory of cognition and philosophy of science can help to improve the legal model.

At the third stage, we will apply to our analysis the knowledge provided by contemporary experimental psychology, which studies such phenomena as heuristics or cognitive biases and fallacies. This will allow us to identify cognitive difficulties (concerning both the reasoning of experts and the interpretation of their opinions by judges) in applying our model in practice. Finally, we will consider what lessons we can learn from all these analyses – and what relevance they may have for the law and the courts.