Interpreting code – Adapting the methodology to analyze the normative contents of law for the analysis of technology

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A B S T R A C T

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In 1999, Lawrence Lessig published a since famous analogy, framed in the catchphrase "Code is Law". By this he meant the normative dimensions that technology and legal norms both inherited. But how can the normative content of code be unveiled? And if code really is law, can they not both be treated and interpreted in just the same way? Legal science in civil law systems has come up with a profound analytic methodology to interpret legal norms hermeneutically and thus to find the normative meaning of law. Scholars working on the relation between technology and human behavior at this point struggle with the lack of a shared language, making it difficult to articulate their findings and opinions on normative content of technology. They can benefit from this discursive basis in an ensuing discourse by strengthening their results of code interpretation by applying the tools provided in this paper to rationalize their argumentation and make discrepancies with the interpretations of others visible. Through the proposed methodology of code analysis they can also find relevant questions for further empirical investigation.

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Use of Cultural Artifacts by Way of Interpretation and Application – or: Adapting the Methodology to Analyze the Normative Contents of Law for the Analysis of Technology.

1. Introduction

Over the past few years, the question of what influence technology has on human behavior and the normative dimension of technology has cropped up with increasing frequency – not least in the analytic consideration of technology (as elementary for this debate cf. Winner, 1988). This contemplation is based on the assumption that human behavior in the use of technology is not only influenced by such factors as statutory enacted laws, contractual arrangements or social norms, but also *by the technology itself*. So when it comes to a specific technology like, for example, the *iPad,* the assumption would be that the behavior of individuals using the technology depends in a way on the design and features of this technology.

In fact, using a technology like the *iPad* in an appropriate manner can sometimes be a very tough task. We provided a link to a short clip in the footnote,[1] the synopsis being:

> *While cooking with her elderly father, his daughter asks him, incidentally, how well he is managing with the iPad she had given him for his birthday. He replies, "Excellent!" and proceeds to scrape herbs into a pot from the iPad, which he had used to chop them on behind his daughter's back. He then rinses off the iPad in the sink and puts it in the dishwasher. His daughter watches him with great consternation.*

We witness a man using a technical device in a way that can be described as extraordinary and unexpected. But how did that come to pass? The elderly man, let us call him John, has obviously misunderstood what the iPad is good for or – to phrase it differently – how it should be used. His thoughts upon seeing the iPad must have been something along the lines of "rectangular form, mid-sized, robust feel with a solid weight, plain surface – perfect to cut things on, it must be a cutting board." But how can this interpretation of the story of John and his iPad as a story of misunderstanding and misapplication help us as scientists concerned with technology and normativity? Our thesis is that the reasoning behind this story can help us develop a methodological basis for the analysis of the normative dimension of technology.

This is an important task because we as lawyers, regulators, and scientists dealing with technology and normativity need to ensure, to the extent possible, that we do not repeat mistakes like John's. The *iPad's* design clearly influenced John's thinking and behavior and led him to use the device as a cutting board. If his daughter would have asked him for his analysis of the *iPad*, he might have replied that it was suitable for chopping things of up to eight inches of length. The problem is that she did not ask him and so the misinterpretation took its course and was not unveiled until too late. The consequences of this lack of communication between John and his daughter, however, are manageable: he probably destroyed his *iPad's* tablet computer functions - but surely made us laugh. So, misinterpretations can cause damages and harm for users. Did you ever, for instance, destroy a USB hub by forcing a flash drive into it with the wrong side up? You are one of the many who misinterpreted its design. Now imagine John would be an in-house lawyer at Apple Inc. asked during the *iPad's* development process for his risk assessment regarding, for instance, privacy or copyright issues. He would have quickly denied that any such risks exist. That this conclusion would be based on a misinterpretation on Johns' behalf would probably have gone unnoticed as long as a rational discourse is not established. This may lead to severe consequences, as the example of consumers claiming compensation from producers for the tragic deaths of their pets shows us: These users actually tried to dry their animals in their microwave ovens, however, producers did not warn them about the outcome. It is likely that the assessors in charge simply did not foresee to which use customers would put their products. Similarly, misinterpretations on the side of a regulator may lead to bad laws. Such was the case with the Directive 2002/58/EC, which widely failed because the legislator did not understand the technology of "Cookies".[2]

So, if you are in charge of assessing the risks of new technologies, either as a lawyer or as an expert consulted by a government for example, you are in deep need for reliable methods of processing a rational valuation, and for a shared language suitable for discussing your results with your peers to avoid misinterpretations. Such a shared language allowing for an informed specialist discourse does not exist in the present. Rational valuation and discourse around technologies could prevent these risks of liability cases caused by rational foreseeable misuse or other undesirable consequences. To avoid such misguided analyses in cases of scientific valuation, reliable methods for the analysis of the normative dimension of technology are needed.

An alternative to this rationalization of discourse might lie in empirical studies carried out in experimental settings. But these are expensive and only suited to back up one point of an argument – that a certain technology is put to use in a certain way. In the end a reliable method for relating analyses of the normative content of technology and for rationalizing the academic discourse is still needed.

Scientists from different disciplines are endeavoring to resolve the tension between technology and normativity. However, the fundamental questions of what technology actually is and how the relationship between technology and human behavior can be understood are themselves controversially discussed. The methodological approaches available for analyzing the normative dimension of technology differ depending on the answers to these questions.

With this paper we aim to contribute to this methodological discussion by showing, first, that technology and law have in common that both can be seen as entities with a normative dimension (1.) and furthermore that both concepts consist of two dimensions: an instrumental component and an action-related component. The transition between those two dimensions can be understood as a process of interpretation and application (2.). Consequently, the normative dimension of law as well as of technology both can be approached hermeneutically.

Based on this theoretical groundwork we will see that the methods for the interpretative analysis of the normative content of law, which provide the analyst with a well-established methodology (3.), are adaptable to a corresponding interpretative analysis of technology. Thus, they provide a methodological grounding and – in doing so – an argumentative basis for the scientific discourse on the normative dimension of technology (4.). The exchange of arguments in scientific discourse about the results of an analysis of the normative dimension of a technology will ensure that individual misinterpretations, which are of course still possible, can be identified (5.).

Finally, we will present an outlook on how the results of the described analysis can be set in relation to the normative content of other factors influencing user behavior and how this provides a basis for further empirical research (7.).

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[1] http://www.sat1.de/tv/knallerfrauen/video/maener-und-technik-clip. Source: Hirschberg, 2011.

[2] Cf. Jones/Tahri, 2011, p. 635.