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Abstract
The paper discusses applications of the behavioural sciences to law and aims at contributing to the contemporary discussions on scientific imperialism. By analysing these applications we demonstrate difficulties with defining scientific imperialism in terms of relations between disciplines. The analysis advanced in the paper critically assesses existing accounts of scientific imperialism and paves the way for a more robust approach to both the definition and evaluation of instances of scientific imperialism. The analysis of these ideas is preliminary and we look forward to comments from readers of this work-in-progress.

Keywords
Behavioural sciences, scientism, scientific imperialism, behavioural science in law and policy, behavioural policy, scientific progress.

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Introduction

The aim of this paper is to shed new light on the debate on scientific imperialism (SI) by analysing applications of the behavioural sciences to law.

Proponents of bringing the behavioural sciences to law (henceforth: behaviouralists[1]) seem to share a basic idea on the need and importance of references to findings of the behavioural sciences in legal and policy contexts. Behaviouralists propose the 'behavioural approach' as an alternative 'systematic framework' (JST[2], 1473) that aims to both 'explain the effects and content of law' allowing us to 'model and predict behaviour relevant to law' (1474). Upon inspection, we find that behaviouralists understand law as an instrument that influences human behaviour. They believe that there is accessible scientific knowledge about regularities of human behaviour and that behavioural scientific findings could be used in order to inform law and policy, which as a result will lead to 'better' legal regulations[3]. Yet, the account of how these findings can be translated into the legal sciences, and how the new approach can be used in order to understand the impact of law (legal norms) on behaviour (facts), is still surprisingly under-theorized. This is despite the recent popularity of the behavioural approach in law and policymaking (the phenomenon which we might call the recent 'behavioural turn' in law and policy). There are puzzling and momentous developments in the legal sciences today. How can we describe and evaluate these developments? We argue that the recent debate on scientific imperialism can shed light on the behavioural turn. We hope to make sense of the behavioural turn by looking at it as an instance of scientific imperialism. At the same time, by doing this, we would like to move forward the debate on the concept of scientific imperialism.

The recent debate on scientific imperialism in the philosophy of science has revolved around the question of the permissibility of the application of scientific theories and methods outside the discipline in which they were initially introduced. The question is: when (if ever) does one scientific approach encroach unduly upon another? Philosophers of science have since attempted to clarify what it means for a theory or method to be applied outside its field or domain and when such an application can be understood as imperialistic[4]. Strategies of identification of scientific imperialism have sometimes also been accompanied by strategies for evaluation by discussing criteria of the assessment of scientific imperialism[5].

We would like to propose that contemporary references to the behavioural sciences in law and policy (henceforth BSLP) can be categorized as an instance of scientific imperialism – alas as one that does not fit some of the characteristics with which scientific imperialism has been hitherto described. Our contribution hence aims to comment both on the philosophical discussion of the concept of scientific imperialism, as well as on making sense of justifications for, and the outcomes and growing popularity of, the application of the behavioural sciences to law. Because we are dealing with two moving targets here (identification and evaluation of the behavioural sciences in law and identification and evaluation of scientific imperialism), let us sum up our core contributions.

First, the term scientific imperialism is indeed a helpful classificatory device with which to describe certain dynamics in the sciences. We suggest that the concept describes 'the application of theories or

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[1] By behaviouralists we understand proponents of applications of the behavioural sciences to law and policy and not adherents of behaviourism as an approach in psychology initiated by B.F. Skinner and J.B. Watson.

[2] Jolls, Thaler, Sunstein, 'A behavioral approach to law and economics', 1998, henceforth 'JTS'.

[3] For example, JTS aim to show how such an understanding of 'human behaviour bears on the actual operation and possible improvement of the legal system' (1480).

[4] Thus far, evolutionary biology (Staddon 2004) and economics imperialism (Kuorikoski & Lehtinen 2010) are the most debated examples. See also (Clarke & Walsh 2009; Davis 2012; Dupré 1995). Other accounts include neuroscience (Fumagalli 2015), geographical economics (Mäki & Marchionni 2011, Marchionni, 2012) and 'pop economics' (Mäki 2012).

[5] See for example the debate between Clarke & Walsh and Kidd and Mäki.

methods to problems that have not been analysed on the basis of them so far ‘, if and only if they fulfil a set of criteria that we outline below.

Second, scientific imperialism is a relational concept in the sense that it denotes relations between entities (where two or more entities are part of the relation). Yet, this relation is not exhaustively described as an inter-disciplinary relation.

Third, the behavioural approach to law is an instance of scientific imperialism, fulfilling the criteria we outline.

Fourth, the critical criterion suggesting the presence of scientific imperialism is imperialism of standing.

1. Objectives of the paper and point of departure

By ‘behavioural sciences in law and policy’ we mean the contemporary approach to law and policy based on the latest findings in the behavioural sciences (mainly cognitive psychology and behavioural economics). This approach, which surfaced in the 1990s with an increased attention to the findings in behavioural economics and psychology, has since become a heterogeneous field of study, encompassing behavioural law and economics, psychology and law, empirical legal studies, and a normative theory on when to apply behavioural insights in law and policy (a nudge theory).

BSLP developed to a great extent as the result of criticism of one of the most consequential and contentious developments in the legal sciences in recent times – ‘economic analysis of law’ or ‘law and economics’, which is based on the premise that the legal sciences should analyse law using neoclassical economic theories and style of reasoning (Polinsky 1989; Posner 1998). This approach has declared itself as[6], and has been criticised for being, imperialistic (though not always in these terms) from a variety of perspectives.[7]

Just like economics imperialism in the legal and social sciences, we have seen sweeping intellectual developments in the last century in the legal sciences that can be interpreted with the concept of scientific imperialism. The behavioural approach developed as a reaction to the perceived deficiencies of the so-called economic analysis of law. It was claimed by proponents of BSLP that a more realistic theory was needed, grounded in empirical and experimental works, since only such a theory could more adequately explain the content and behavioural impact of law and serve as a basis of policy recommendations. Particular emphasis is put on experiments in the new behavioural approach to law. Yet, experimental methods are imported not as linked to a particular discipline. It is an interesting development in BSLP that reliance on experimental method is treated as a proper way of testing hypotheses and collecting observations of behaviour that can be a basis for the formulation of a more 'realistic' theory of human behaviour. Reference to experimental data is understood as more accurate than proposing abstract and general models and extraordinary faith is placed in it[8]. JTS for example describe that the ‘value of the experimental method’ is so powerful that it even allows one, for example, ‘to test directly for fairness’ (1492).

For us, the following development is important: it can be assumed at this stage that BSLP has the ambition to appear in the place of ‘economics applied to law’. The behaviouralists tried to argue that their approach was compatible with, or would even complement traditional approaches in, law and

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[6] See: Cooter 1981; Becker 1968. Compare also: Landes & Posner 1993

[7] See: White 2015; Medema 1998; Epstein 1997; Zelitzer 1988, Kelman 1988

[8] Jolls, Thaler, Sunstein (1998) in one of the earliest endorsements of the behavioural approach to law say that ‘In a behavioural approach, assumptions about behaviour should accord with empirically validated descriptions of actual behaviour’. Confidently, the example they give is the ability of B L&E to understand what ‘fairness’ is, mentioning it as ‘specifically defined and empirically verified patterns of behaviour’. To understand fairness in law, we should use behavioural analysis, and such a legal science ‘produces a better understanding of law and a better set of predictions about its effects’ (1489). The reliance on experimental methods of BSLP warrants a close analysis. One point of critique that has been raised concerns the external/ecological validity of experiments in the context of law and policy (Alemanno). Others have accused BSLP of using experiments in the process of building models that fit the data (and not to predict new phenomena), such as Gigerenzer.

economics.[9] At the same time they also have the ambition to offer a new alternative theory of behaviour and decision making[10]. But in contrast to the rhetoric of the economic analysis of law (at least some of its proponents, for instance Gary Becker), BSLP does not formulate 'imperialistic' postulates – yet we believe that a research programme, approach, or theory, can be imperialistic without declaring it as such.

The most fervently debated example of an application of behavioural science to policy is nudging. In the context of law and policymaking, nudges are tools of public policy used, on the basis of findings derived from the behavioural sciences, to steer people's behaviour without limiting their freedom of choice. The typical example of nudges is default rules (so called 'opt out' options) introduced in order to increase the number of people participating in retirement savings programmes, or in order to increase organ donations. Another example is shocking health warnings put on cigarette packages in order to discourage people from smoking. In these cases legal and policy scholars make references to research on heuristics and biases that is supposed to provide findings about tendencies of behaviour (status quo bias in a case of default rules and availability heuristics in the case of shocking health warnings). Nudge theory relies upon specific normative presupposition and has been criticized from a variety of perspectives (e.g. Lepenies & Malecka, 2015). For now, we just want to point out that it is not evident that nudge theory necessarily follows from the 'positive' approach of behaviouralism in law[11]. Nudge theory is just one specific way in which a set of behavioural applications is justified in law and policy. For the purpose of this paper, we want to focus on the prior philosophical question of how reference to the behavioural sciences more generally impacts on the legal sciences, and not on specific normative accounts such as libertarian paternalism. In fact, we think that the field would profit from moving away from critiques of libertarian paternalism towards these more fundamental questions.

The natural starting point for this article is therefore the account of scientific imperialism proposed by Maki (2013) in which the notion of SI is explained. According to Maki, scientific imperialism is a phenomenon that may occur between two disciplines. Further, he distinguishes between certain types of imperialism. Whereas we think that this account can illuminate the behavioural turn in law, we will also use our example to demonstrate the limitations of thinking about SI in disciplinary terms (that is, in terms of relations between scientific disciplines).

2. Brief historical overview of references to the social and behavioural sciences in legal scholarship

We think that what makes the legal sciences a fascinating case study framed in a discussion on SI is the fact that they have struggled for more than a hundred years with the question of the method and scientific character of legal scholarship. BSLP can be seen as a novel manifestation of this struggle and development.

First, let us focus on legal dogmatics. Legal dogmatics is a branch of legal sciences analysing a law in force enacted by a lawmaker. In the realm of continental legal tradition, Kirchman (1848)

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[9] Their insistence is to continue using 'the tools of traditional economic analysis' (1474), being 'deeply constructive' (1475) and 'enriching the traditional economic framework' and not to 'undermine it' (1475). Is this an imperialising move, masquerading as compatible with the economic analysis of law (EAL)? In one respect, the ambition of the behaviouralists is underscored by talking about the 'wide range of questions' on which behavioural analysis may cast a light. But does BSLP simply 'inherit' the imperialism of the neoclassical approach? Or does it supersede it with a new kind of imperialism? While the jury is still out on these questions, what is clear to us is that BSLP does not declare itself imperialistic and at least differs to EAL imperialism in this way.

[10] 'The purpose (…) is to bring new and more accurate understanding of behaviour and choice to bear on law' (Sunstein 2000:1). It is also claimed that the expected utility theory underlies neoclassical law and economics, whereas that behavioural law and economics is based on the alternative theory of decision making – prospect theory – see: Arlen, Talley 2008.

[11] It is only because nudge theory and behavioural analysis have been presented so often in conjunction, and with the mistaken assumption that the normative analysis logically follows the positive approach, that the disentanglement of the two is a necessary step to think about the normative implications of a behavioural analysis in law.

famously accused legal dogmatics as dressing up its statements in quasi-intellectual fashion: for him, legal dogmatics was pseudo-science, and the focus on natural law (instead of positive law) had led the courts and academia astray (Sanderström, 2003). On the other hand, on the grounds of common law, legal realists (e.g. O.W. Holmes, J. Gray, H. Oliphant, J. Frank, A. Ross, A. Hägerström, K. Olivecrona) criticized formalistic jurisprudence and argued that methods of interpretation of legal norms, methods of legal reasoning, as well as methods of adjudication, were arbitrary, unjustified, based on common sense or intuition and as such were non-scientific[12]. Another debate centred around the question of which approach to legal science could better assist legal practice (Sanderström, 2003). The 'new' approach of legal realism promised to be more policy-relevant (to use the term anachronistically) compared to the historical school of natural law.

Partly as a result of the critique directed against legal dogmatics, the issue of the method and scientific character of legal theory started to be examined. Legal theory was understood as a discipline interested in the analysis of legal phenomena[13]. In this discussion the specificity and independence of the subject matter and methods of legal theory have been discussed. And here we had scholars who argued for the autonomous character of legal theory, such as Hans Kelsen. Kelsen proposed his pure theory of law, with its own subject matter (system of legal norms) and method (transcendental analysis), in order to save the legal sciences from influences of any 'alien elements', as he called them (he had in mind mainly the theoretical influence of sociology). On the other side of this discussion we had legal realists who argued for application of methods and theories of other (mainly social) sciences in order to analyse law that was for them reducible to facts. Today the understanding of a legal theory as a fully autonomous discipline that explains 'legal phenomena' or law as a normative entity is almost non-existent; nowadays, the law (as a phenomenon) is usually explained by a variant of realist approaches.

This brings us to our final historical remark. In the 20th century, the question about method has been accompanied by an interest in the analysis of the impact which law has on the behaviour and decisions of different actors. Analysis of this kind had been present in the realm of American and Scandinavian legal realism, sociological jurisprudence, but also in the disciplines that emerged in the meantime – sociology of law and psychology of law and, finally, economic analysis of law. What these approaches have in common is the belief that they offer a more powerful description of human behaviour and that the law and legal sciences therefore should accomodate their findings. And today, we can witness a turn to the behavioural sciences in law and policymaking.

By bringing this historical perspective to references to 'outside' sciences within legal scholarship, we would like to draw attention to the fact that we can identify at least three reasons for these references. They were made 1) in order to criticize legal dogmatics for its common-sense, non-

[12] The development of American legal realism has often been explained as a reaction to legal formalism, which dominated American jurisprudence at the end of the 19th century and even at the beginning of the 20th. Legal formalism has been also named 'mechanical jurisprudence' (R. Pound 1908), that is, a view that legal adjudication relies on deductions of judicial decisions from legal norms. The critique of legal realists is directed against any form of legal conceptualism or legal argumentation. American legal realists have also objected to every form of speculation concerning the nature of law, opposing in such a way the conceptions of natural law. According to them, legal science should have a descriptive character. Legal science should aim at the description and explanation of legal practices, its regularities and processes, as well as at the prediction of future decisions of legal organs (mainly the courts). See also Martin 1997 and Alexander 2002 comparing these two realistic approaches in legal theory – American legal realism and Scandinavian legal realism that has been developed on the European continent.

[13] Legal theory is understood differently in various intellectual traditions. In works of Polish legal theorists and philosophers, legal theory is differentiated from legal philosophy and general jurisprudence – see: Opałek 1961: 3-19. The subject matter of legal theory is to provide theorems and analyses concerning legal texts and the structure of legal systems as well as the influence of law on social reality. – see: Wronkowska, Ziembiński 2001:15. In anglophone literature, legal theory is most often identified with jurisprudence, that is with a discipline which deals with the systematization of basic legal concepts and the conceptualization of problems of legal dogmatics. As we mention in this text, in the continental tradition, legal theory has also been differentiated from legal dogmatics. Here we understand legal theory as a discipline analysing legal phenomena.

scientific character, 2) to establish legal theory as a science of legal phenomena[14], as well as 3) in order to analyse the behavioural impact of law in order to inform policymakers. Usually modern social sciences were brought to law in order to serve all these aims. It should be noticed that in legal scholarship references to other sciences are made for various reasons (e.g. not only in order to explain legal phenomena). Thus, in order to understand the role of 'outside' sciences in law and their possible 'imperialistic' character it is important to take into account all these reasons and their interplay.

This brief overview of debates on the scientific status of legal sciences and references to outside sciences should demonstrate that in legal scholarship we have diverse legal disciplines, struggling over scientific status (such as legal theory, legal dogmatics, jurisprudence). Some of these struggles can be said to be marked by scientific imperialism, as understood in the sense of the term currently discussed in the literature (methods and theories are applied to contexts in which they had not been applied before). The historical overview demonstrates that the legal sciences have displayed a great susceptibility for outside influences – which increases the chance of scientific imperialism.

3 Scientific imperialism – remarks inspired by the behavioural sciences and law

3.1 The debate thus far

In the next section we will explain the consequences of all these unique features of legal scholarship and the behavioural approach to law framed within the discussion on scientific imperialism.

As we mentioned at the beginning of the text, our point of reference and of departure for our analysis of SI is Maki's (2013) account. We chose this account because we are sympathetic with his attempt to explain the notion of SI and we share many intuitions presented by Maki. Maki builds upon prior work on the concept. Here, we refer mainly to the distinction he introduces between imperialism of scope, style and standing. For Maki, imperialism of scope obtains when 'an expansionist discipline seeks to explain phenomena that belong to the perceived domain of another discipline. This is the pursuit of explanatory unification that is disrespectful of disciplinary boundaries. Imperialism of style appears when 'the styles and strategies of research, such as the techniques and standards of inquiry and communication, characteristic of one discipline, are transferred to, or imposed on, other disciplines". Imperialism of standing is characterized by Maki in the following way: 'The academic and non-academic prestige, power, and resources as well as the acknowledged technological and political relevance of one discipline increase at the expense of those of another'.

3.2 Our Remarks on Maki

Maki defines SI in disciplinary terms – for him, SI obtains through the relation between disciplines. Yet this understanding cannot capture misgivings we may have in the context of references to 'outside' scientific findings in law. Looking at the history of legal scholarship, it is not clear at all which legal discipline could be colonized or imperialised – legal dogmatics, legal theory, jurisprudence? The status and boundaries of each of the fields is contested within legal scholarship, their character as 'scientific' is still highly debated and any attempt to explain a notion of SI in this context will require clarification of these debates (before being able to clearly demarcate 'disciplines'). We argue (and Maki concedes this himself) that disciplines are far from unified – but especially in many of the social sciences, they are 'essentially contested', which means that there is a plurality of understandings of what the contours of the discipline are – and who gets to represent it.

Let us focus also on the notion of a 'perceived domain' of a discipline, mentioned by Maki in his definition of an imperialism of scope, to zoom in on a specific matter. Maki says that imperialism of scope relates to imperialising what is thought to be the 'perceived domain' of a discipline. The simple question that we asked ourselves when looking at the law is: perceived by whom? We would like to argue that the notion of a 'perceived domain' of a discipline, as introduced by Maki, allows for situations when the imperialising discipline perceives a domain, of e.g. legal theory, differently than legal theory perceives it. In other words, it is possible to understand 'a perceived domain' of legal

[14] Again, legal theory is in this sense not a discipline that analyses the formal features of legal systems or clarifies concepts used within legal practice but instead analyses law in a scientific way.

theory and an e.g. of BSLP as two distinct/mutually exclusive sets. For example, the domain of BSLP is perceived by some behavioural scholars as concerning the content of legal rules (and not legal rules themselves, nor their features, properties, attributes), whereas the domain of legal theory is perceived by some legal theorists – as the set of legal rules and their characteristics. It could be stated then by proponents of each perspective that BSLP and legal theory attempt to explain different perceived phenomena, and thus BSLP is not imperialistic, at least not in a sense of imperialism of scope. But are we really willing to accept such a conclusion? Does a difference in perception of this type exclude the possibility of an imperialistic practice?

We would like to stress that disciplinary framing cannot help us to understand imperialism of methods that are not specific for any particular discipline. It is an interesting development in contemporary references to behavioural sciences and law, that reliance on experimental method is treated as a proper way of testing hypotheses and collecting observations of behaviour that can be a basis for the formulation of a more 'realistic' theory of human behaviour. Reference to experimental data is understood as more accurate and superior compared to proposing abstract and general models by neoclassical law and economics scholars. But here, the experimental method is advocated not because of its relation to any particular discipline. Indeed, often the superior insight that is supposedly gained is not justified by arguing that it proved successful in, for example, a more advanced discipline – but that the newly introduced approach is 'more accurate' or 'scientific'. We think that the adoption of experimental methods in law and policy can reasonably be called imperialistic – but that this would elide Mäki's definition due to its focus on inter-disciplinary relations. Scientific imperialism can hence be not only about inter-disciplinary relations, but also about attributing superior scientific status to newly introduced methods.

Finally, understanding scientific imperialism in disciplinary terms excludes certain interesting cases of SI that come into existence because of factors not directly related to disciplines proper – e.g. imperialism of a certain theory as prevalent in policymaking and politics. Arguably, one factor contributing to the popularity of BSLP stems from the eager reception of both private and public actors outside academic disciplines[15]. These private and public actors developed and sustained an interest in BSLP not because of the explanatory value it provides (for the explanation of legal phenomena, for example) but because of its usefulness in direct application. BSLP is attractive because of its promise to deliver results in the form of allowing policymakers to shape the behaviour of their policy takers with little effort, cost and hindrance. These developments facilitate scientific imperialism.

Especially nudge theory has this function. Nudge theory does not provide explanations for why law or policy 'work' in a certain context (why they impact behaviour and what mechanism is responsible for this impact). It is rather an approach based on findings in the behavioural sciences (selected findings) and the aim of this 'theory' is only to propose policy solutions that fit a certain normative framework (libertarian paternalism). However, increasing the standing (support and acknowledgment of policymakers) of nudging leads to a growing popularity of behavioural research within legal scholarship, such as behavioural law and economics, or empirical and experimental legal studies. Hence, actual imperialism is driven not only by better explanation or prediction – but by very worldly concerns of usefulness in policymaking based on a convenient narrative. The current literature (in philosophy of science) on the concept of SI cannot accommodate such instances of SI.

A very new component that accompanies the recent rise of references to the behavioural sciences is not so much the invocation of the higher standing of a particular discipline ('behavioural economics is superior as a discipline, therefore we use it in law'), but rather the invocation of the authority of science itself ('BSLP builds upon more accurate empirical evidence and we should therefore use it in law'). We argue that the rhetoric of the behaviouralists displays many of these

[15] Consider, for example, organisations like The European Nudge Network, 'Guerrilla Research' company iNudgeyou, Ideas 42 ('Using Behavioral Economics to do good') and the Behavioural Insights Unit UK (which changed from a public non-profit to a private for-profit entity).

references to the authority of science and might even be accused of 'scientism'[16]. BSLP argues that their arguments are based on superior (methods of obtaining) empirical evidence[17]. Note how this differs from prior episodes of imperialising processes in law: the rise of law and economics was also accompanied with statements of the superiority of the approach – but it was less the authority of science that was invoked, rather the superior status of the discipline of economics (specifically, neoclassical microeconomics) whose models represented parsimony, formalization and rigour. Behaviouralists, however, claim to introduce scientific advances to law which centre around accounts of behaviour that are supposed to provide new, enlightening insights into the analysis of the behavioural impact of law. Hence, it is the scientific character/narrative of these accounts that is so influential and seductive for legal scholars today. We would like to argue that this 'scientistic' attitude should be included in an account of scientific imperialism.[18]

4 Our proposal:

4.1 Definition/Criteria

For the reasons above, we do not propose considering scientific imperialism in purely disciplinary terms. Rather, we would like to argue that some novel applications of methods, theories, research programmes to problems where they have not been used thus far[19], can become imperialistic when these methods/theories/research programmes are:

Favoured (by members of the epistemic community in question) at the expense of other methods/theories/research programmes.

The reasons for this favour/support can be twofold:

1) methods/theories/research programmes are supported/favoured as more 'scientific' than other methods/theories (when this is justified by/relying on the standing of science – or the authority of science);

2) methods/theories/research programmes are supported/favoured as more 'progressive' than other methods/theories (when this is justified by/relying on scientific progress)[20]

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[16] In fact, we see that BSLP fulfils several of the criteria that S. Haack identified in her work on 'scientism'. She write that scientism is marked by: the use of the term 'scientific' as honorific; the adoption of 'scientific' manners and terminology; the obsession with demarcating science and pseudoscience; the preoccupation with identifying a scientific method to demarcate science from pseudoscience; the attitude deploying science to answer questions beyond its scope; the active denigration of the usefulness of non-scientific activities (Haack 2009).

[17] Specifically, behaviouralists claim to make theories with higher predictive power.

[18] We want to add two remarks on the current debate on SI that is informed by BSLP. The first relates to the underlying philosophy of scientific progress that implicitly informs Mäki's account. Mäki holds that explanatory unification is the goal of science, and that scientific imperialism should be normatively assessed insofar as it contributes to or detracts from this goal. One quick comment is to question this reliance on explanatory unification. Without offering an alternative account of the desideratum of science, we think that it is overambitious that the concept of SI should apply uniformly and universally across very different sciences. Arguably, different sciences (social sciences, natural science) have different aims that cannot be readily reduced to 'explanatory unification'. Especially for the social sciences, with their intellectual proximity to idiographic approaches, and with their influences from the humanities, it might be reasonable to assume that many social scientists would value explanatory pluralism over explanatory unification: even opposing camps in the social sciences would arguably rather see diversity than mono-culture in the social sciences. The second remark relates to Mäki's project to make SI useful as a non-normative concept. We are cautiously suggesting that by following such a strategy, much of the meaning of 'imperialism' is lost. Already, there are various uses of 'scientific imperialism' to be found in adjacent fields that share very little with this unique neutral interpretation of the term. Imperialism evokes strong emotions – just like colonialism, hegemony, and other terms that describe political relations whose legitimacy we might be interested in analysing. We argue that the literature on SI would make progress by reassessing this dimension of the debate.

[19] We say 'some' because there should not be a presumption to see such novel applications as problematic per se. Applications of this kind are one of the conditions for possible scientific progress and freedom.

[20] For example, when a scientific approach is brought to e.g. non-scientific or practically oriented disciplines – such as philosophy or politics – it is claimed that it will make these disciplines more scientific. Here we have a move from non-science to science (justification through the progress of science). If, for instance, economics is claimed to replace or

Note that this account builds on the understanding of 'standing' in the sense outlined by Maki. It means favouring certain scientific theories/methods/research programmes[21] in terms of academic and non-academic prestige, power, and resources, acknowledged technological and political relevance at the expense of other theories/methods/research programmes. We argue that the expense at which one theory is favoured over another should be analysed 1) empirically by the following indicators: time spent on this in teaching and research; prominence in curricula; funding for proposals following these methods; 2) normatively, by comparing the scope of the current standing of theories/methods/research programmes with a standard of appropriate 'distribution' of standing across disciplines as accepted within the epistemic and scientific community. We call 1) the sociological aspect of standing and 2) the political aspect. We think that these aspects of standing are the crucial feature of scientific imperialism, necessary to identify instances of SI.

In fact, we think that imperialism of scope and imperialism of style are neither necessary nor sufficient conditions for scientific imperialism. An approach may be attempting to introduce a new style of arguing into another field – but unless there is imperialism of standing, these attempts will be futile. Scientific imperialism is only successful if one approach is in fact favoured over another and this includes not only material resources but also intellectual recognition. However this means that the important sociological and political component is a part of our account. Below we try to argue that the terms still have an important philosophical component.

4.2 Consequences

Our approach does not impose restrictions on interdisciplinary trespassing because of the problems in identifying well-defined, unified disciplines and their domains. We introduce conditions on the result of applications of methods/theories/research programmes to the problems that have not yet been analysed on the basis of these methods/theories/research programmes. These conditions help us to identify instances of scientific imperialism, but they can also be interpreted normatively as restrictions that a scientific community would like to impose in order to eliminate/or limit scientific imperialism[22] – if scientific imperialism is understood as a negative practice/phenomenon.

Let us emphasize that when we resign from a disciplinary framework in our analysis of SI it doesn't mean that we would like to question here the very idea of a scientific discipline and disciplinary work. We are even of the opinion that disciplinary reactions to applications of certain theories or methods to new problems, fields, or domains, can be informative for a discussion on SI. Science is materially, socially and institutionally organized within disciplines and such applications can undermine research projects run within (a) particular discipline(s). One of the reasons why there is an opposition to new approaches is the danger of undermining an institutional organization of disciplines. On the other hand, one of the reasons why a certain theory, research programme, or a method expands, can lie in the way in which a particular discipline is organized. However, it is rarely the case that theories and methods of an entire discipline are transferred to another discipline. Also, it is not always the case that theories and methods are transferred because they proved 'successful' in one particular discipline (see: the case of an experimental method). Furthermore, we are of the opinion that a 'disciplinary framing' of a debate on SI commits one to analysis in the sociology of science and, especially, to the analysis of boundaries, histories and organization of disciplines.

We believe, however, that the aim of philosophy of science in this debate is rather to analyse whether applications of theories or methods to problems that haven't been analysed on the basis of them so far, are justified or not. In other words, the aim of philosophy of science is to provide conditions under which such applications are justified. Unjustified applications that have institutional,

(Contd.)

complement sociology, it is believed that it will lead to scientific progress. Here we have a move from one scientific theory to a more advanced one (justification through progress within science). But of course, these reasons often come together.

[21] Mäki speaks about disciplines, but for the reasons mentioned above we resign from a notion of a discipline in our analysis.

[22] On the question of the normative criticisms of scientific imperialism see Kidd (2013) responding to Clarke & Walsh (2009), as well as Clarke & Walsh (2013).

material and/or political support are imperialistic. In the light of our approach, philosophy of science should reflect on the notions of scientific progress and criteria that enable us to state when a theory or a research programme is more progressive than other theories or research programmes. The question whether a particular method/theory/research programme is supported at the expense of other methods/theories/research programmes is a sociological (empirical) and a political question.

In order to analyse a possible justification of SI we need to engage in a philosophical debate on scientific progress. Scientific progress can be examined along diverse dimensions and aspects of science: non-epistemic – economical, professional, educational, methodical; and epistemic – cognitive (increase and advancement of scientific knowledge) (see: Niiniluoto 1980). As Niiniluoto notes, 'these types of progress have to be conceptually distinguished from advances in other human activities, even though it may turn out that scientific progress has at least some factual connections with technological progress (increased effectiveness of tools and techniques) and social progress (economic prosperity, quality of life, justice in society)' (Niiniluoto 2015) This distinction enables us to judge the progress of science, as opposed to other human activities.

The progress within science (scientific progress of a research programme/theory/method) can be judged by employing an account of scientific progress understood as the increase and advancement of scientific knowledge. Following Kitcher (1993) we argue that there is variety of dimensions of progress within science (cognitive, conceptual, explanatory). Assessment of SI as justified or unjustified requires making explicit an account and dimension of scientific progress in the light of which theory/method/research programme is supported (at the expense of another). It should be noted here that an analysis of scientific progress also has a normative component. Progress is a normative concept that should be distinguished from a notion of 'change' and of 'development' (Niiniluoto 1995). Progress in science means improvement judged through the criteria for 'good science'. This shows that the analysis and assessment of SI cannot escape the engagement in normative analyses and decisions at two levels. First, during analysis of the expense at which a theory/method/research programme is identified as being supported (this analysis requires a standard for appropriate 'distribution' of standing). Second, during analysis of a possible justification for increased standing by reference to scientific progress to which a method/theory/research programme can lead (as scientific progress is also a normative concept). Different views on eligibility of SI are related to acceptance or rejection of particular standards for appropriate 'distribution' of standing, or standard for improvement of science or within science, or both.

4.3. BSLP and scientific imperialism

Are BSLP imperialistic in the light of our account? We can identify two types of reason why references to the behavioural sciences are made within legal and policy contexts. Behavioural sciences are brought to law and policymaking because the authority of science is supposed to provide findings about regularities of human behaviour that can then be used in order to influence behaviour in an effective manner (progress of science). At the same time the behavioural sciences are also advocated as more progressive – seen as an advancement in comparison with economic theories applied to law and policy.

In order to assess whether BSLP are imperialistic the empirical analysis of the expense at which it is favoured, as well as an analysis of a notion of scientific progress employed within its approach is needed.

If it can be demonstrated that BSLP is not progressive in the light of an advocated notion of scientific progress (for instance, if it is supported as advancing explanatory progress, but does not have greater explanatory and predictive power than other theories/research programmes, and that it is nevertheless favoured at the expense of other theories/research programme, then BSLP can be treated as an instance of SI.

Conclusion

Our analysis of the application of the behavioural sciences to law and policy (BSLP) has helped us to critically assess existing accounts of scientific imperialism (SI) and to pave the way for a more robust approach to both the definition and evaluation of instances of SI. To say conclusively whether BSLP is

imperialistic or not requires further work – yet the groundwork for such a conclusion has been laid here. For now, we have contributed conceptual clarifications and suggestions how, and in which disciplines, progress can be made on this topic. Recent developments in law lead us to question the concept of scientific imperialism as inter-disciplinary and to stress the occurrence of 'standing' as key to instances of SI. Further, we distinguish between the sociological and philosophical components of analyses of scientific imperialism. The role for philosophy of science here is clear: what is needed is a debate about the conditions of scientific progress upon which any conception of scientific imperialism must necessarily build. The role for sociology of science is also clear: identification of instances of scientific imperialism is an empirical matter – and sociological approaches can help to suggest indicators of how to approximate the 'imperial standing' of scientific approaches. Taken together, maybe it will then be possible to answer the core question of the debate: under what conditions are applications of scientific theories and methods outside the discipline in which they were initially introduced justified? Our suggestion is that any answer must also address both these philosophical and sociological tasks.

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