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ARTICLE

Enthusiast or sceptic? Social science consciousness among legal practitioners

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Abstract
There have been strong proponents and opponents in academic debates about the use of social science in legal practice. However, in such academic discussions, little attention has been paid to what legal practitioners think about social science and its use in law. The present study shows that legal practitioners have complex views about social science. Drawing on in-depth interviews, it shows that there are five ideal-types of 'social science consciousness': enthusiast, pragmatist, indifferent, critical optimist and opponent. The paper shows what the implications are for law and social science, as well as a new research agenda on social science consciousness.

Keywords: social science consciousness; law and social science; perceptions; legal practitioners

1. Introduction

'Sociological gobbledygook' was the term Chief Justice Roberts used to describe the social science data cited by the plaintiff in a Wisconsin partisan gerrymandering case (*Gill vs. Whitford*, transcript of oral arguments, p. 40). His comment resulted in a collective groan from social scientists (Blake 2019). This example of scepticism against social science from a legal practitioner is not isolated. For decades, there has been a heated debate among social scientists and legal scholars about the potential value of social sciences for law (Beck et al. 2009; Blumenthal 2002; Engel 2006; Faigman 1989; Monahan and Walker, 1991, 2011). On the one hand, proponents argue that social science provides valuable insights for law that should be used and incorporated. They express their frustration with legal practitioners, saying that they misuse, underuse or even ignore the valuable insights from social science (Blumenthal 2002; Cashmore and Parkinson 2014; Malsch et al. 2016; Welsh and Farrington 2012). On the other hand, opponents of the use of social science in law argue that it is not suitable: according to them, scientists do not focus on the right questions; they doubt the reliability and external validity of the research, or simply argue that it is inappropriate to rely on anything other than legal judgment and reasoning (Blake 2019; Faigman 1989; Woodson and Parker 2021). Opponents refer to previous cases such as *Brown vs. Board of Education*, where important decisions were based on poorly constructed scientific studies as examples (Blake 2019).

What is striking about the debate on social science and law, however, is that this discussion generally overlooks the perspective of the actors themselves: the legal practitioners. Even though they are the individuals who would actually have to work with the social science in the case that it

is implemented in practice, their perspectives on this are often ignored or implicitly assumed. Indeed, with the exception of an older study that has looked at the perceptions of judges (Redding and Reppucci 1999) or studies that looked at police officers' receptiveness to research (Telep and Lum 2014; Telep and Winegar 2016), empirical research about how legal practitioners view social science has been almost non-existent. This is a remarkable oversight, because having a proper understanding of how legal practitioners perceive the use of social science in their work is a central piece of the puzzle of how social science can inform law. The present study aims to fill this gap by providing an in-depth understanding of the perceptions of legal practitioners on the use of social science in their work, based on sixty-four semi-structured interviews. Based on the interviews, we will present the distinct perceptions that legal practitioners have of social science and explain these as ideal types of 'social science consciousness'. This typology will help further understand the debate on the use of social science in law and give practical implications for this discussion.

1.1. The debate on law and social science

For decades now, scholars have been writing about the use of social science in law, without yet reaching any consensus. Supporters of the use of social scientific research in law often express their frustration about the lack of impact of social science in legal practice (e.g. Malsch et al. 2016; Welsh and Farrington 2012). They blame legal practitioners for underusing, misusing or even ignoring social scientific research, which is often explained in terms of their lack of training in such material (Blumenthal 2002; Cashmore and Parkinson 2014; Van Koppen et al. 2017). Their viewpoint is that social scientific research provides law with insights into human behaviour that cannot be acquired without empirical research. Indeed, such research has provided a wide variety of insights that may be relevant for legal practice, with entire (sub)disciplines devoted to it. For example, work from legal psychology has identified multiple risk factors in criminal cases that could result in wrongful convictions or other miscarriages of justice, such as the reliability of eyewitness testimony, possible biases in forensic evidence or the risk factors for false confessions (Garrett, 2020). The field of criminology, too, has provided rich insights that may be relevant for law, such as the way that individual factors, social environments and practical circumstances may be associated with offending behaviour (Blomberg et al. 2024; Laub and Frisch 2016; Pesta et al. 2019). Nonetheless, opponents of the use of social scientific research in law argue that social science is far from suitable for law, or at least, not suitable for answering all questions in law (Faigman 1989; Giesen 2015). Their point of view is that social science cannot answer normative questions relevant for legal practice, meaning that empirical data do not dictate normative decisions (Ansems 2021; Giesen 2015; Lawless et al. 2010; Leeuw 2015). Furthermore, they believe that social science seems to lack knowledge and consideration of procedural rules, giving the opponents an excuse to dismiss the research (Sagana and van Toor 2020). Additionally, it is argued that social scientific research can lack reliability and external validity, making it challenging to use the results in practice (Engel 2006), and that findings can often be inconclusive, ambiguous or even contradictory (Tonry 2013). Last, social scientific research may not always be accessible to non-scholars, as research is often not published with open access (Ashby 2020).

However, so far in this debate there has been scant attention to the perspective of legal practitioners. This is surprising, because these are, in fact, the actors who would be tasked with utilising the science, in the case that such insights would be implemented in legal practice. As such, understanding how legal practitioners perceive social science and its relevance for their work is of particular importance for this discussion. Although hardly any research has directly examined this question, recent research did find notable parallels between the experiential knowledge of legal practitioners and social scientific knowledge on how law can and cannot shape behaviour (Huang 2024; Kuiper forthcoming; Kuiper et al. forthcoming). Such research showed considerable similarities between the way legal practitioners (including prosecutors, compliance officers and police) thought about shaping compliant behaviour and social scientific evidence on this question.

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Especially when their ideas about this were considered at the collective level (i.e. across all interviewed respondents), practitioners recognised a range of relevant factors, which resonated with major mechanisms identified in the empirical literature. Additionally, this research found differences between the assumptions in legal practice and findings in research. For example, Kuiper et al. (forthcoming) found that multiple prosecutors assume that more severe punishment will deter future offenders. Social scientific research, on the other hand, has found no conclusive evidence that more severe punishment will have a (general) deterrent effect (Nagin 2013). These findings are encouraging, as they suggest that there is common ground between how legal practice and social science understand these processes, while also indicating areas where social scientific knowledge may complement or challenge existing assumptions in legal practice. But does this mean that legal practitioners also look favourably upon social science and perceive it as useful for their work? So far, this is not yet known.

1.2. Perceptions of science

Research on perceptions of science is not new: the concept of attitudes towards science has been widely studied (Rutjens et al. 2018). This research focuses on the general public's attitudes towards science – for example, on issues such as vaccinations or climate change. Over the last few years, attitudes towards science have become more negative, resulting in polarised attitudes towards science. People differ in their trust in science: some put their faith in science, others reject and dismiss scientific evidence on a regular basis and are more sceptical (Rutjens et al. 2018, 2022). This difference in trust can have multiple reasons, such as political ideology (Gauchat 2008, 2012). This can also be true for social science (Cofnas and Carl 2018). Another reason for differences in trust in science is scientific literacy: more knowledge of science is related to more positive attitudes towards science (Allum et al. 2008). Furthermore, Wintterlin et al. (2022) found that trust in science is best predicted by positivistic attitudes towards science and to a lesser extent by trust in scientists. Research has also found that less trust in science can be caused by contradictions between an individual's intuition and the science (Rutjens et al. 2018). Lower trust in science is related to less support for the use of science in policy-making (McCright et al. 2013).

While this research demonstrates how the general public perceives scientific knowledge about broad societal topics, it does not illuminate perceptions of social scientific knowledge relevant to law, nor the perspective of the legal actors who might leverage such findings in practice. Despite the debate about the use of science in this domain, insight into this question is only limited. So far, most scholars have focused on the normative and theoretical value of the social sciences in law (Engel 2006; Giesen 2015). There are only a handful of empirical studies related to the debate. Most of these focus on judges and courts. For example, research has looked at the use of social scientific evidence by the US Supreme Court (e.g. Bisaccia Meitl et al. 2020; Blake 2019), support for the use of social science in courts among judges and law students (Redding and Reppucci 1999) and among the general public (Woodson and Parker 2021). Additionally, research has focused on the receptiveness of police officers to research and evidence-based practice (Telep and Lum 2014; Telep and Winegar 2016). Hardly any research has looked at perceptions of the use of social science in legal settings beyond the courtroom or police settings. Moreover, the existing research paints a bleak picture. Redding and Reppucci (1999) found that evaluations of social science about the death penalty by both law students and judges were mostly informed by their personal convictions. Indeed, their responses often reflected a distrust of social science and of social science experts who testify in court. This seems to match the experiences of social scientists (Malsch et al. 2016), whose research was, in their view, highly relevant for practice, yet rarely actually used there. In light of this, to advance the debate on law and social science, and to capitalise on the potential for cross-fertilisation, more insight into legal practitioners' perspectives on the use of social science is urgently needed.

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1.3. Present study

The present study aims to gain an understanding of legal practitioners' perceptions of the social sciences and their value for law, specifically where law aims to shape behaviour. To do so, it will focus on how practitioners view social science about the way that law can best address illegal or rule-violating behaviour. One of the principal functions of law is to keep us safe from physical, financial and ecological harms (Darley et al. 2001; Van Rooij 2020). To understand how law can effectively address harmful behaviour requires empirical research (Van Rooij 2020). Here, large bodies of social scientific empirical research may be relevant (Van Rooij and Sokol 2021). We can think about work on the effects of punishment (for a review, see Van Rooij et al. 2024), such as the deterrent effect of punishment or incapacitation (Dölling et al. 2009; Miles and Ludwig 2007; Nagin 2013; Piquero and Blumstein 2007; Travis et al. 2014). Other work that is relevant here concerns the role of social context in compliance (Cialdini and Trost 1998; Cialdini et al. 2006; Goldstein et al. 2007), or the ways in which practical circumstances can provide opportunities for committing crimes and misconduct (Clarke 2003, 2005; Cohen and Felson 1979; McNeeley 2015; Spano and Freilich 2009). As such, there is much social scientific work that could be relevant for legal practice where law seeks to address harmful behaviour. Yet it is unknown how the legal practitioners who operate this function perceive social science and its relevance for their work. This study will provide insight into this question. It will do so on the basis of sixty-four semi-structured interviews with legal practitioners tasked with shaping behaviour through law, namely prosecutors (who address violent and property crime), compliance officers (who are tasked to reduce corporate rule violations) and regulators (tasked to regulate pollution and financial risk). The study will analyse their perceptions of how informative they believe social science can be in their practice, and how practical they deem it to be to actually use. By analysing these perceptions, this study will develop an inductive typology indicating different practitioner views on the use of social science in legal practice.

2. Methods

Ethical approval for this study was obtained from the Ethics Review Board of the Amsterdam Law School, University of Amsterdam on March 26, 2020. All participants provided consent before the start of the interview. Additionally, participants were asked for their consent to record the interview and to use their quotes. Participation was voluntary.

2.1. Participants

The sample consisted of sixty-four legal practitioners, all working in different sectors in the Netherlands. Specifically, the sample consisted of twenty-five prosecutors, twenty-one compliance officers and eighteen regulators (i.e. financial and environmental regulators). Of the sixty-four participants, forty-four had a background in law, eleven participants had an educational background in social sciences and eighteen participants had another educational background. In total, nine participants studied multiple fields. See Appendix A for an overview of interviewees and general information per actor.

2.2. Data collection and analysis

Participants were recruited using different techniques. The first participants were contacted via e-mail or phone through the network of the researcher and the research team. After these first contacts, the researcher used snowball sampling to recruit new participants. This means that the researcher accessed participants through contact information provided by other participants. These new participants may also provide contact information of other possible participants, hence

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the term snowball sampling (Noy 2008). The interviews with prosecutors, compliance officers and regulators can be considered elite interviews, which can complicate data collection (Dexter 1970; Harvey 2011). In order to study these actors, the method of snowball sampling was considered to be the most appropriate method to gain access. To limit the risk of distortion, several separate chains were initiated (Atkinson and Flint 2001).

The question guide was made prior to the interviews and was tested during pilot interviews using internal testing (Barriball and While 1994; Chenail 2011). This internal testing provided valuable feedback on possible ambiguities or leading questions. After this, a final interview guide was constructed. The questions relevant for this paper were asked after an in-depth discussion about how law can be used to change behaviour (Kuiper forthcoming; Kuiper et al. forthcoming). First, the participants were asked whether they had received any training in how to change behaviour through law, and if not, where they acquired their knowledge. The interviews furthermore addressed whether they were aware of the social scientific research on this topic. Last, participants were asked about their perception of this body of social scientific knowledge, to what extent they thought that social science is useful for legal practice. The semi-structured nature of the interview allowed the interviewer to ask follow-up questions and adjust questions to the flow of the interview (Brinkmann 2014). Thus, if necessary and possible, follow-up questions were asked to gain a more in-depth understanding of the given answer, or to clarify the question for the participant. Six participants did not consent to the recording of the interview; for these interviews, extensive notes were made.

The length of the interviews ranged from twenty-nine to seventy-nine minutes with a mean of forty-eight minutes. Because of the COVID-19 pandemic, most interviews had to be conducted using video conference tools such as Zoom and Microsoft Teams. This is a feasible alternative when face-to-face interviews are not possible (Gray et al. 2020; Sah et al. 2020). In total, seven interviews were conducted face-to-face and fifty-seven online. All online participants received an e-mail with the informed consent and information sheet prior to the interview. Participants of face-to-face interviews received these at the start of the interview.

All recorded interviews were transcribed for the purpose of data analysis. For the non-recorded interviews, notes were used for analysis. The data were coded and analysed using ATLAS.ti 22. Beside demographic codes (i.e. type of actor, educational background), no codes existed before analysing the interview, meaning that an inductive coding approach was used (Chandra and Shang 2019; Thomas 2003). This type of coding was inspired by grounded theory (Boeije and Bleijenbergh 2019; Walker and Myrick 2006). After coding the interviews, the codes were organised into code groups that integrated related responses.

To uncover the depth and detail of the data and to map its complexity, a typology was created. This was done using a content analysis methodology, sometimes also referred to as typological analysis (Weber 1990). The goal of such content analysis is to provide knowledge and understanding of the studied phenomenon (Krippendorff 2018; White and Marsh 2006). In this study, it allowed us to identify different ideal types in respondents' perceptions of social science in relation to their work.

3. Analysis

After gathering all answers and inductively coding and grouping them, it became clear that there were two broad aspects that were discussed in most answers to the question about the extent to which social science was seen as useful for practice. One aspect focused on how valuable participants thought that social science was; the other concerned how accessible they considered it to be. In the next section, the answers related to the two aspects are described. After that, a more in-depth analysis of the different perceptions of the use of social science in law will be explained in the form of a typology.

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3.1. To what extent is social scientific research valuable?

In answering the question, many participants gave answers that touched upon whether they thought social science is valuable for legal research. Such value could lie in its applicability, whether it can be informative or whether they saw general value in it.

Participants greatly differed in their views on the applicability of social scientific research in their legal practice. The majority (forty-three, i.e. 67 per cent[1]) of participants thought that social scientific research can be applied in legal practice. These participants originated from all three groups of actors. They differed in the extent to which they believed scientific findings could be applied in practice. Compliance officers in particular believed that results can provide new insights or confirm that what they did in practice is effective. In other words, they believed that in some cases, social scientific findings can be directly applied in their practice. This does not always mean that the findings would show what is effective; they could also show what is not. One compliance officer explained:

> 'Sometimes we do things based on intuition, which we think are the right things to do, but where the science knows that this is not right. So, it can make your work more effective if you know which interventions do and do not work.' (CO012)

Others still think social science is valuable for practice, but not necessarily directly applicable. Instead, it may serve as background information or be informative in a broader way:

> 'I have never come across any scientific research of which you can say: "If we would apply this literally, we would be certain that this would have a positive outcome." This is often not how it works, but it does give you valuable insights that you can use in your regulation in a broader sense.' (FR001)

> 'Scientific research exists for a reason. They are things you can always take on board. For example, certain techniques, influencing behaviour. There, you can incorporate things from so many disciplines in order to influence it. Scientific research certainly has a share in that too. For me, it is more for information, for support, rather than that I would apply it directly.' (CO009)

Multiple practitioners explained how scientific research and its methods can hold a certain power to convince others and to show why things are done in a particular way. The research can be, or for some practitioners should be, the basis of choices and interventions, as the scientific methods are more validated than someone's own opinion.

Thus, the majority of practitioners believed that social scientific research can be valuable for their practice. This does not mean that they see it as the ultimate truth. One practitioner, who did see the applicability of social science, explained: 'I am originally a scientist myself, so I always do think: science doesn't give absolute knowledge either, but it does give more knowledge than if you kind of do it by feel.' (CO012)

The other twenty-one practitioners, also originating from all three groups of actors, were less convinced that social scientific research can be informative for legal practice. They believe that the distance between research and practice is too large for research to be applicable. Two practitioners explicitly stated that they believe that more communication is needed between the two fields. PP012 explained:

[1]Because our selection of participants was not fully random, the percentages mentioned are solely meant to describe the sample and not to generalise to a larger population of these practitioners.

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> 'I have the feeling that lawyers think about criminologists: vague stuff, what are you actually saying? You do not have any influence. And that criminologists somewhat think about lawyers: they do not look beyond; they learn a law book by heart and have no idea what is really going on in society. Of course, those stereotypes originate somewhere, but if you would just listen to each other . . . '

Others were more critical of the quality of research: they mentioned that research is often based only on the USA, that many topics are understudied, and that a lot of the findings are only descriptive, not causal. One practitioner explained how the current quality of research limits its applicability in practice. Over the last few years, many studies have been criticised or even retracted because of poor methodology, lack of replication or even cases of academic fraud. This makes it very hard, if not impossible, to really distinguish between good and bad quality research as a practitioner. However, they do believe that in the future, this can change:

> 'There is also a prospect that it can get better. I think that, especially in social sciences, we have reached rock bottom – at least, I hope so – and that from now on, it is also a good lesson for the future: particularly to incorporate things to prevent it from happening again.' (CO019)

Multiple regulators and prosecutors did not see added value to the use of social scientific research. They believed that research would not teach them anything that practice could not also teach them, or, even more critically, that research may come to the wrong conclusions: it often does not match what they see happening in reality. PP013 said: 'My experience is, then you read something about those studies or else I think: what I see happening in practice is quite different.' Another prosecutor expressed the thoughts they had after a course from a scientist on punishment: 'Well, nice with your little theories, nice that that was the result of your study, could be, but what I see is different.' (PP007)

Lastly, three prosecutors explained that they thought social science simply does not fit legal practice: it is not the role of a legal practitioner to incorporate it, nor does it fit legal questions. They have other considerations than effectiveness, such as the proportionality of a sanction, or the retributive goal of punishment. PP019 said: 'Primarily, you really have to look at many more factors than just influencing someone's behaviour. It is much broader than that. I also have to do justice to the victim, and you rarely do that just by changing the behaviour of the perpetrator.'

In sum, we see that only a minority of the legal practitioners think that social science does not fit legal practice at this moment. Of that minority, some believe that this could be changed in the future. The majority of respondents see how research can be applicable and informative for their practice. Nonetheless, this does not mean that legal practitioners are always able to do so. Most of the practitioners described one or more obstacles that they experienced in applying the findings. These obstacles will be discussed in the next section.

3.2. To what extent is social scientific research accessible?

Apart from the answers about whether social science is valuable for legal practice, the participants also discussed whether social science is accessible. Here, we will use this term in a broad sense: whether the practical work environment of the practitioners allows them to use social science and how social science is presented.

In total, thirty-four interviewees (53 per cent) expressed one or more obstacles against the use of social science in legal practice. The first set of obstacles are because of the work setting. Prosecutors especially indicated that they often have no time to look into the research or go to workshops – their workload is already too high. However, not everyone agrees. PP022 explained:

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> 'But at the moment, the workload in our organisation for many people is far too high. Because of this, the question remains how many people will take action on this, because they are already busy conducting the investigations and preparing the hearings. But I believe that you should never lose sight of the content. In that case do one case or hearing less, but do have something like this [having a conversation with a researcher].'

Practitioners also differ in the extent to which they feel supported by their organisation to use social science. Some legal practitioners pointed out that they feel that their organisation does not really support the use of social science, nor gives them the opportunity to work with it.

Furthermore, lack of relevant skills can be a barrier against understanding the research findings and translating them into practice. Multiple legal practitioners acknowledged that they did not receive any training in social science and emphasised that they are not behavioural experts. Indeed, even practitioners who did have a background in social science emphasised that the use of jargon and academic language can make it difficult to understand the research properly and therefore to translate it into practice. A final obstacle is more practical: the availability and accessibility of social scientific research. Especially for compliance officers, research papers are not always accessible because they are often not published with open access and hence are situated behind a paywall. Some practitioners try to look for solutions to overcome these obstacles – for example, by hiring trained experts or consultants, or by relying on popular science outlets such as books, podcasts or magazines. CO006 explained:

> 'Because there are quite a few popular authors in the field of behavioural change, in that sense things are accessible. So, I can very easily send that to other people: if you think this is an interesting topic, read this book. Or read this article. So, I think that scholars like Dan Ariely, Kahneman, Cialdini, they are very accessible.'

Most of the interviewed regulators indicated that they have internal experts that help to overcome these obstacles. Such teams aim to translate research directly to practice, or sometimes even conduct research themselves. One regulator described how such teams practically help them to access relevant research:

> 'There have been all kinds of research about this, also scientific. That kind of thing is not my expertise. What I get is a presentation of the summary. That they say: 'this is what the research shows. We have conducted this whole analysis and these are the key building blocks for research about the capacity for change. And this is what you need to know.' We had a few sessions about this topic about a year back or so, and then you are completely up to date. That has been set up very comprehensively by two colleagues. So, you will get a presentation of what they have researched in the literature and the science.' (FR009)

In sum, legal practitioners encounter multiple practical obstacles against accessing social scientific research. Organisations differ greatly in their support for overcoming these challenges. Whereas some practitioners feel that their organisation is reluctant to use research findings, other organisations set up expert teams to overcome the difficulties and enhance the scientific basis of practice.

3.3. Five types of legal practitioners' perceptions of social science

So far, this paper has provided an analysis of the two aspects (i.e. the value and access) that legal practitioners mentioned when reflecting on the usefulness of social science for legal practice. The analysis of their answers indicated that there is a broad variety in respondents' perceptions of this, which transcends simple categorisation into proponents or opponents. To capture the different

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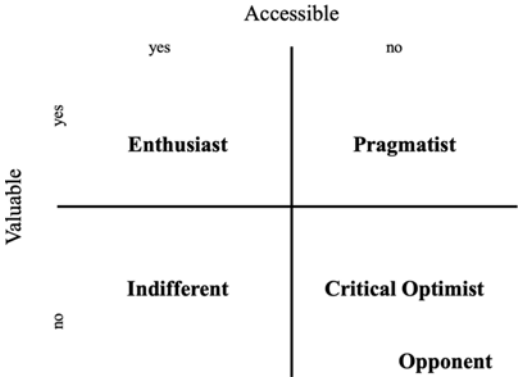

Figure 1. A typology of legal practitioners based on differing perceptions of the use of social science in legal practice.

perspectives, we have created a typology of ideal types based on the answers given by the participants in this sample. Specifically, the typology is based on the combination of the core aspects that emerged during the preceding stage of the analysis – namely the value and the accessibility of social science. By plotting these dimensions against each other, different ideal types can be generated of how legal practitioners may view the use of social science. Doing so will not only enable the classification and deeper understanding of the responses of the present sample but also provide valuable direction for the debate on law and social science by identifying different practitioner types with differing perspectives and needs.

As a first step, we created an initial typology based on the four combinations of the two dimensions (i.e. valuable and accessible, valuable but not accessible, not valuable but accessible, neither valuable nor accessible). Next, we went back to the sample and aimed to classify the legal practitioners into these ideal types. Moreover, in doing so we evaluated whether these categories actually covered the descriptions provided by the participants. Not all participants explicitly discussed both aspects during the interview, but the broader way in which they discussed their perceptions of the science still allowed us to classify them. For example, some practitioners discussed how valuable they believed social science to be and how they already use insights in their practice. From their use of these insights, we inferred that they perceived social science as accessible too.

When trying to fit the respondents into ideal types, one key insight emerged: the category who perceived social science as neither valuable nor accessible needed to be divided into two separate subcategories, in order to better reflect the perceptions of the participants. As such, the final typology consisted of five distinct ideal types of perspectives on the use of social science in legal practice, as shown in Figure 1. Because these are ideal types, none of the legal practitioners fit perfectly into any of these categories. Rather, this typology helps us to understand the differing perspectives on the use of social science that emerged across the present sample and the distinct needs and possibilities that these may reflect.

3.3.1. The enthusiast

The first ideal type distinguished in the typology is the enthusiast. The enthusiast is a legal practitioner who perceives social science as both applicable and accessible in legal practice. Of the participants, twenty interviewees (31 per cent) fit the enthusiast type. More specifically, seven compliance officers, six prosecutors and seven regulators expressed their positive views on the applicability and accessibility of the research in their practice.

The enthusiast believes that social science can provide new insights, can be used as background information or as confirmation that what they do is effective. They believe that social science and

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its methods hold a certain power and status. As one practitioner said: 'scientific insight with the validation of the scientific test is very important. It is not about what I think. It is about where I can refer to.' (PP002) This may also help to convince others about what is right and effective. The enthusiast often actively searches for scientific materials and sometimes even collaborates with researchers in conducting scientific research relevant to their practice. They try to implement research findings or use theory in their own practice. If they see any possible obstacles in the accessibility of the research, they also look for solutions to overcome them. For example, they read materials in their own time, and/or focus on popular science outlets for readability and easier translation to their practice.

Thus, an enthusiast is a legal practitioner who perceives social scientific research as applicable to their practice. Even if they see possible obstacles in the accessibility, they will personally look for solutions to overcome these and take steps to ensure that the findings are accessible to them.

3.3.2.The pragmatist

The second ideal type that could be distinguished is the pragmatist. The pragmatist is someone who believes social scientific research can be applied to legal practice, but experiences practical obstacles in doing so. Of the sample, eleven compliance officers, eight prosecutors and four regulators could be classified as pragmatists. Thus, a total of twenty-three out of sixty-four practitioners (36 per cent) were categorised into this category.

Although the pragmatist sees the added value of social scientific research for legal practice, they experience obstacles in different areas. On the one hand, they see obstacles caused by social science. The pragmatist experiences difficulties with the academic language: they feel that the use of academic language and jargon makes it more difficult to translate or apply the research findings to their practice. Furthermore, because of paywalls and a lack of open access research, the pragmatist feels limited in their (online) access to research outlets. Additionally, they can also experience barriers because of the work setting: their workload is too high, so they simply do not always have the time to look for relevant research or to think about how to apply it in practice. One practitioner highlighted: 'I think that if you would ask this question to all prosecutors, almost everyone would say: "yes, I would like to know more about it, and do more with it, but I wouldn't know where to find the time."' (PP021)

Because the pragmatist does see the added value of social scientific research for practice, they sometimes look for possible solutions to overcome the obstacles. They believe that one way to make the science more accessible would be for scholars to spend more time on making their research more understandable for practice, and to come up with short, clear summaries of their findings that are relevant and could directly be incorporated into it. A pragmatist explained:

> 'Sometimes I get a study saying, this is the result. But if it's a lot of pages, I won't read it in detail. Sometimes I will have a quick look at the conclusion. It could be useful though. But then it has to be delivered in an accessible way, spoon-fed: here is the information!' (PP009)

A pragmatist also thinks that for some topics, popular science outlets are an alternative when academic articles and books are not accessible.

Thus, the pragmatist is a legal practitioner who perceives social scientific research as applicable to practice, but experiences obstacles originating from both social science and their own work environment in the access to the research.

3.3.3.The indifferent

The third ideal type is the indifferent. The indifferent is someone who thinks social scientific research is accessible, but not necessarily applicable in legal practice. In total, ten practitioners

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(16 per cent of the sample) fit this type. More specifically, two compliance officers, three prosecutors and five regulators fit the indifferent type.

The indifferent does not have a very strong opinion about the use of social science in legal practice and does not think about it often. They believe that it is accessible, sometimes because they have an in-house expert team, but do not spend time on applying it consciously. They doubt whether the findings really provide relevant information for them to use directly: they consider it questionable whether social science really produces new insights or is just a repetition of what is already known. They think it can be a way to start discussions about particular topics, but doubt whether it is their responsibility to directly implement it. The indifferent believes that not everything can be learned; you also need a certain predisposition to be a legal practitioner. In practice, they see that it is more about skills than theory. This indifferent explained: 'in the direct regulation, my experience is that much is picked up from practice. If you talk about [behavioural] influence, many of the things that are being done are more based on skills than on theory' (FR006).

Thus, the indifferent does think that social scientific research can be accessible, but they do not really believe that it has added value for practice. Often, they have not really thought about it before and do not have strong opinions about it.

3.3.4. The critical optimist

The fourth ideal type is the critical optimist. The critical optimist sees too many flaws in social science at this moment for it to be useful in practice. Of the sixty-four participants, five (8 per cent) fit the type of critical optimist: one compliance officer, three prosecutors and one regulator.

The critical optimist believes that at this moment, the quality of research falls short. They often have more experience with and interest in social science than most legal practitioners – for example, because they studied it or because they work closely with researchers. Because of this, they have a deeper understanding of debates and crises happening within the field of social science. The critical optimist openly questions the reliability and validity of the current state of social science. The replication crisis, use of questionable methods and recent cases of fraud make them reluctant to trust scientific findings and incorporate them into practice. It is difficult to make a good assessment of the quality when you are not a researcher yourself, according to the critical optimist. One practitioner explained:

> 'I do remain healthily critical, I think. Also, because I realise very well that I often cannot quite estimate whether those studies have really been conducted with the right methodology. I am not sufficiently embedded in the field to really judge whether something is done according to the standards. I know, because that is also shown in scientific integrity studies where people really look into the way that people build up their data, that things are often really shaky on the methodological side. So, I have become a bit more reluctant with that' (CO019).

Furthermore, the current body of research, according to the critical optimist, mostly focuses on the USA, is often only descriptive instead of proving causal relations, and leaves many important topics under-researched. Additionally, they see or experience practical obstacles in the use of social science, such as paywalls or the use of jargon in papers and books.

In general, the critical optimist observes a gap between social science and legal practice. However, they do believe that this can be overcome. They believe that more communication between the fields is necessary, because there is potential for social science to be useful for legal practice.

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3.3.5. The opponent

The last ideal type is the opponent. The opponent does not believe that legal practice can, or should, benefit social scientific research. In total, six participants (9 per cent) fit the type of opponent: five prosecutors and one regulator.

The opponent does not think that social science is useful for legal practice, nor that it will be in the future: social science should not play a role in legal practice. The opponent almost always has a legal background and finds that the scientific findings they see do not match their observations in practice. One opponent said: 'then some scientist comes and says something, and then I think: "well, yes, nice with your little theories, but what I see is different." And then I think, that is kind of ivory tower-like: not so important' (PP007).

The opponent also believes that knowledge or skills can be gleaned just as well from practice. Social science does not add any novel insights beyond what is already known there, according to the same practitioner: 'But of course what the behaviour is, how it can be influenced – we have obviously been doing criminal legal practice for hundreds of years, so you can simply see that from rulings' (PP007). Research is simply not suitable for practice, because translation is not possible. Results and conclusions are often based on singular studies, drawn from different populations or are conducted in different settings than those relevant to opponents' practice. The opponent does not see a role for social science in practice: they regard these as distinct disciplines with different interests, methods and questions. Furthermore, the opponent has to consider other elements that do not play a role in social science, such as the proportionality of an intervention, what the law or legal code prescribes and other goals than just effectiveness, such as retribution.

Thus, an opponent does not see a role for social science in law. An opponent believes that if you are not trained as a social scientist, you should not act like one. In the end, law and legal knowledge are what is required to answer legal questions.

4. Conclusion

For decades, scholars have been debating the use of social science in law in an almost dichotomous way. Based on mostly normative or theoretical arguments, scholars from different disciplines have presented themselves as either proponents or opponents of the use of social science in legal practice (e.g. Blomberg et al. 2024; Blumenthal 2002), implicitly assuming that this also reflects the perspectives of legal practitioners about this subject. So far, an empirical understanding of their perceptions has been missing.

A first key finding is that among practitioners there is more to the debate than solely proponents or opponents. By analysing sixty-four interviews with legal practitioners, we were able to obtain a more in-depth understanding of the variety in their perceptions of the use of social science in legal practice. The findings show that there are high levels of diversity in how practitioners perceive social science, and different reasons why they view it as usable (or not) for practice. In order to map these different perceptions, this paper provided a first typology of legal practitioners' perceptions of social science, consisting of five distinct ideal types: enthusiasts, pragmatists, indifferents, critical optimists and opponents. These represent differing perspectives on the use of social science in law, based on its perceived value and accessibility.

Although we do not have a representative sample, there are observable differences between the different groups of legal practitioners in this sample that are worth noticing. First, prosecutors are more often classified as critical optimists or opponents (32 per cent), especially compared to compliance officers (only 5 per cent). A possible explanation for this difference could be that the profession of prosecutor is seen as a more traditional legal profession with traditional legal education (Van de Bunt and Van Gelder 2012), whereas compliance officers are now more than often not trained as lawyers, and the profession is gradually moving from a purely legal approach towards a behaviourally informed approach (cf. Soltes 2021). This may also explain why

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compliance officers are more often classified as enthusiasts or pragmatists. Second, regulators are strongly overrepresented in the group of indifferents (26 per cent), compared to 12 per cent of prosecutors and 10 per cent of compliance officers. Although this is not directly researched in this study, a possible explanation could be the different preferences in enforcement styles, where some regulators prefer a more formal and legalist approach (cf. May and Wood 2003). As a consequence, some regulators may not see an added value to social science as their main focus is on law enforcement instead of behavioural change. Moreover, this could result in less experience with social science and therefore less experience with possible obstacles. In order to gain a better understanding of the different perspectives of the various legal practitioners, and the possible reasons for this, more research is needed.

The study's second contribution lies in finding that practitioners' views on the use of social science in their practice are based on two dimensions: whether the science is deemed to be accessible and valuable. These findings provide a two-dimensional framework to position and deepen arguments used in the academic normative debates about the use of social science in law.

First, although practitioners also mention a lack of accessibility of social scientific research because of paywalls (cf. Ashby 2020), they also explicitly mentioned the use of jargon in scientific literature as an obstacle. Moreover, they described barriers inherent to their job, such as a lack of time to search for and read scientific findings. This last form of (lack of) accessibility, in particular, is overlooked in the academic debate. Second, in the academic debate about the value of social science for legal practice, discussions often are solely focused on the direct implementation of scientific findings in legal practice and whether this would be beneficial or not. However, in the present research, legal practitioners also discussed an indirect value of social scientific findings for their practice: social science can serve as background information or be valuable in a broader way (e.g. how science can hold power to help to convince the board). This broader view on the value of social science may lead to a broader perspective in the academic debate on the way that scientific knowledge could and should be used in legal practice.

Vice versa, some of the arguments in the academic debate may add to practice views on what may be issues in accessibility and value of science. In particular, only a handful of legal practitioners explicitly discussed difficulties with the reliability and validity of social scientific research, whereas this is one of the core arguments in the debate (cf. Engel 2006). Over the last few years, broader challenges in the field of social science have come to light, such as the replication crisis (Chin and Zeiler 2021; Pridemore et al. 2018), questionable research practices such as *p*-hacking (Chin et al. 2023; Fraser et al. 2018) and even cases of (possible) fraud (Levelt et al. 2012). The present findings underline that it is important for legal practitioners to understand such possible limitations and risks of research findings, as this may impact their practice if they want to implement it.

Taken together, this research shows that perceptions of legal practitioners can add nuance to the normative debate on the use of social science in law. Whether social science *should* be used in law, however, is not a question that is answered by the present research (nor did it aim to) – we leave this question to those participating in the normative debate. We do believe, however, that the perspective of legal practitioners is integral for this debate, and hope that the present findings may represent a first step in this direction.

Research has shown that in recent years, the use of social science in law has increased (Bisaccia Meitl et al. 2020). The point of debate has evolved from whether social science should be used to inform law to how it should do so (Monahan and Walker 2011). The study's third contribution is that its new typology can provide practical recommendations for this new point of the debate, should one want to communicate social scientific research findings with legal practice. Previously, recommendations in the literature for improving the relationship between social science and law have often been presented as a list of several suggestions, almost with a 'one size fits all' approach (e.g. Blomberg et al. 2024; Blumenthal 2002). This study, however, shows that such an approach may be futile or even counterproductive. Instead, the distinct practitioner types that our research

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identifies suggest that a tailor-made approach may be more fruitful, as different types seem to display different needs and require different kinds of support. While enthusiasts may perceive social science to be valuable and accessible, this does not guarantee that they will understand the findings and implications of the research correctly or sufficiently. The risk is that they will implement findings the wrong way, which may even result in unwanted outcomes (e.g. Gneezy and Rustichini 2000). Additionally, they may not recognise 'bad' quality research. As mentioned previously, there have been bigger crises happening in the field of social sciences: the replication crisis (Chin and Zeiler 2021), questionable research practices such as *p*-hacking (Fraser et al. 2018; John et al. 2012; Necker 2014) or cases where prominent scientists are accused of data fabrication (Levelt et al. 2012; Lewis-Kraus 2023; Scheiber 2023). Enthusiasts therefore may require support that helps them to evaluate and correctly apply research findings. Pragmatists, conversely, may see social science as valuable but face barriers in accessibility. Accordingly, pragmatists may benefit from initiatives that improve their access to social science. From social science, this means that scientists need to learn how to use language other than the academic language (Blomberg et al. 2024; Kittler 2018) and work towards more open access. This perspective is very different from that of indifferents, who see social science as accessible but not as valuable. For indifferents, it may therefore be important to evaluate how social science could be of value for their practice. For this purpose, it may be essential to start a dialogue to gain a better understanding of their needs and to identify if, and how, social science could meet these. Additionally, the indifferent may also help to educate the social scientist to better understand legal practice. Critical optimists, conversely, see social science as neither valuable nor accessible, but do see potential, provided that these barriers can be overcome. Because of their deeper understanding of the strengths and flaws of both worlds, critical optimists may be the key to working towards a better connection between social scientific research and legal practice. A longer dialogue, or even collaboration, between critical optimists and researchers may be of profound value for this purpose – and for developing the kind of high-quality, relevant research that critical optimists require for their practice. Finally, while opponents may not be convinced that an improved relationship is necessary, their hesitations and objections may be of great value for social scientists to understand what role their research can play in practice. Therefore, the opponent may educate the researcher in more detail about the legal process and legal questions. This may also help to ensure that social science meets the needs of opponents, by enabling it to safeguard and navigate the considerations that matter most to them.

These findings open up a new research agenda. Instead of approaching the use of social science as a debate with proponents and opponents, this research shows that this approach does not reflect reality in legal practice. It finds that practitioners may have different types of social science consciousness. Just as ordinary citizens have legal consciousness, in other words 'the ways in which people experience, understand and act in relation to the law' (Chua and Engel 2019), legal practitioners may have social science consciousness, reflecting the way that they experience, understand and act in relation to social science. Legal practitioners vary as to what extent they see a position for social science in their work, and as such, there are different ideal types in their social science consciousness. The present study has unearthed five distinct ideal types of social science consciousness. Understanding such social science consciousness is vital for grasping how social science is positioned within legal practice, and how this varies among different legal practitioners. Furthermore, understanding differences in social science consciousness is vital for law and society scholarship as it can help scholars understand how best to communicate and translate their empirical findings for different types of legal practitioners.

The present study offers a first empirical exploration into social science consciousness. Future research should further extend the present findings by examining whether these generalise to different populations of legal practitioners. This should not only include other prosecutors, compliance officers and regulators (e.g. in different fields or domains of law), but also other practitioner categories, such as judges and lawyers. Future research could also look at their consciousness about different aspects of social science – for example, by zooming in on other

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important fields of study – such as work on procedural fairness (Tyler 2003; Walters and Bolger 2019), access to justice (Galanter 1974; Sandefur 2008), racial bias (Mitchell et al. 2005; Rachlinski et al. 2008; Wu 2016), false confessions (Kassin and Gudjonsson 2004; Meissner et al. 2012) or eyewitness memory (Berkowitz et al. 2022; Głomb 2022; Wixted et al. 2018). Future research could also look at variation in social science consciousness in different jurisdictions with different types of legal education – for instance, comparing views of legal practitioners who have had a purely legal education (as is common in mainland Europe, for instance) with those who had a non-legal bachelor followed by a Juris Doctor (as, for instance, lawyers in the USA have). In this way, the present research may serve as the starting point for a new research agenda on social science consciousness, which will enable us to better understand the complex relationship between legal practice and social science – and to work towards a better alignment between the two worlds.

4.1. Limitations

Naturally, this study comes with limitations. In this study, we used ideal types that were inductively created based on the data. It is possible that if a typology had been deductively developed (e.g. based on existing theory), or if an interview would be designed to directly test the typology that we have found here, some legal practitioners might be classified differently. Therefore, future research should test these categories deductively, which would ultimately allow for a generalisation of the typology to other samples and populations.

Second, this research did not test to what extent, or how, legal practitioners use social science in practice. The perceptions of the legal practitioners do not necessarily reflect correct use of social science in their daily work. Most legal practitioners are not trained in social sciences, especially lawyers (Stolker 2014). This brings multiple risks. For example, multiple practitioners referred to famous studies that recently have been criticised because of their lack of replicability, or even suspicions of fraud (Lewis-Kraus 2023). Furthermore, it is possible that legal practitioners 'cherry pick' the science that best fit their own assumptions and ideas, with the risk of misusing social scientific research (Andrade 2021). Thus, future research is needed to gain insight into the actual use of social science and the corresponding risks. To ensure that the research can benefit practice, it is also important to ensure that the science is sufficiently robust. This aligns with recommendations to utilise meta-analyses in order to provide more robust conclusions for application in legal practice (Blumenthal 2002).

Last, because we used a non-random selection of participants, there could be a selection bias (Winship and Mare 1992). Specifically, it could be that these practitioners are more open to social scientific research because they were already willing to participate in this particular study. Although we cannot rule out this possibility, it is important to note that the results nevertheless revealed a variety of perceptions of the use of social science in law, including respondents who were indifferent or opposed this. In this way, this study did enable us to distinguish a range of distinct ideal types with differing stances on the use of social science in legal practice. Nevertheless, it would be valuable for future research to extend these findings to different populations and actors to confirm their generalisability.

4.2. Conclusion

The present study provided insights that the debate on law and social science has been too dichotomous. Instead, it shows a shows a more complex, multifaceted understanding of the phenomenon of social science consciousness. A new field of research on social science consciousness should aim to further deepen our understanding of the ways in which social science is perceived by legal practitioners, as well as other relevant stakeholders, and the tailor-made approach that this requires for those who seek to improve the relationship between law and social science.

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Appendix A

Table 1. Prosecutor interviewees' details

Participant code	Sex	Type of prosecutorial office	Education	Experience social science
PP001	Female	Regional	Law	
PP002	Male	National	Law	
PP003	Male	Regional	Law	Yes
PP004	Female	Regional	Law	
PP005	Female	Regional	Law	
PP006	Female	Regional	Law	
PP007	Female	Regional	Law	
PP008	Male	Appeal	Law	
PP009	Female	Regional	Law	
PP010	Female	Regional	Law	
PP011	Female	Regional	Law	
PP012	Female	Regional	Law	Yes
PP013	Female	Regional	Law	
PP014	Male	Regional	Law	
PP015	Female	Regional	Law	
PP016	Female	Regional	Law	
PP017	Male	National	Law	
PP018	Female	National	Law	
PP019	Male	National	Law	Yes
PP020	Female	National	Law	
PP021	Male	Regional	Law	
PP022	Male	Regional	Law	
PP023	Female	Regional	Law	Yes
PP024	Male	National	Law	
PP025	Female	National	Law	

Note. As all prosecutors are required to have studied law, we added an extra column to provide more information about differences in experiences with social science as none had undertaken an additional study in social science.

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Table 2. Compliance officer interviewees' details

Participant code	Sex	Type of organisation	Education
CO001	Male	Private	Law
CO002	Male	Private	Law
CO004	Male	Private	Other
CO005	Male	Private	Law
CO006	Female	Private	Social/behavioural science
CO007	Female	Private	Other
CO008	Female	Private	Law
CO009	Female	Private	Social/behavioural science
CO010	Female	Private	Social/behavioural science
CO011	Male	Private	Social/behavioural science
CO012	Female	Public	Other
CO013	Female	Private	Law
CO014	Female	Private	Law
CO015	Male	Private	Law
CO016	Female	Public	Law
CO017	Female	Public	Law
CO018	Male	Public	Law
CO019	Male	Public	Law
CO020	Male	Public	Social/behavioural science
CO021	Female	Public	Law
CO022	Female	Public	Law

Table 3. Regulator interviewees' details

Participant code	Sex	Type of regulator	Education
FR001	Female	Financial	Law
			Social/behavioural science
FR002	Male	Financial	Social/behavioural science
FR003	Male	Financial	Law
			Social/behavioural science
FR004	Male	Financial	Social/behavioural science
FR005	Female	Financial	Social/behavioural science
FR006	Male	Financial	Social/behavioural science
FR007	Male	Financial	Law
FR009	Female	Financial	Law
FR010	Female	Financial	Law
ER001	Male	Environmental	Environmental studies

(*Continued*)

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Table 3. (*Continued*)

Participant code	Sex	Type of regulator	Education
ER002	Female	Environmental	Other
ER003	Male	Environmental	Environmental studies
ER004	Male	Environmental	Environmental studies
ER005	Female	Environmental	Social/behavioural science
ER006	Female	Environmental	Other
ER007	Male	Environmental	Environmental studies
ER008	Male	Environmental	Environmental studies
ER009	Female	Environmental	Other

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