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INTRODUCTION

PERFORMING EXPERTISE

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For the Russian agronomist Aleksei Doiarenko, scientific ambition, social engagement and state administration had always been closely entangled.[1] As a young student at the Agricultural Institute in Moscow around 1900, he started lecturing the farming population about agricultural modernisation – a topic he embraced in the hopes to politically emancipate the Russian countryside. After obtaining a professorship at the Agricultural Academy, he quickly became a leading voice in the emerging field of agricultural development, whereas he became absorbed by state administration at the same time. During the early 1920s, he entered the People's Commissariat of Agriculture where he was involved in the first attempts of large-scale agricultural planning in Soviet Russia. For Doiarenko, the rise to expert fame implied a complex interweaving of social roles. As the scholar in agronomy gradually evolved into a popular educator and an administrator, he needed to navigate between very different audiences, all of which seemed to formulate their own (academic, popular and political) prerequisites. These prerequisites often changed – and in revolutionary Russia they could change overnight. As the Great Purges turned upside down the preconditions of expert recognition, and 'pre-revolutionary', imperial experts were easily replaced by a stratum of newly educated and thoroughly communist technicians, Doiarenko was stripped of expert authority, only to be rehabilitated posthumously during the Khrushchev era. Negotiating cautiously between state, science and society, Doiarenko finally faced the loss of political patronage – a loss that could not be compensated by his previously accumulated academic and popular respectability.

The fate of Doiarenko is exemplary of the aura and the fragility of (academic) expertise in modern and late modern policy making. For all the obvious successes of expert politics since the second half of the nineteenth century, the 'expert society' that may have materialised because of these successes, was never fully within the hands of the presumed experts themselves. For at least a decade now, scholars in the history of science and in science studies (often animated by philosophers and sociologists of science), have argued exactly that. From agriculture to public health policies, from experimental to statistical method, in liberal-capitalist as well as in 'totalitarian' politics, expertise continuously expanded into new fields of the social fabric, yet always remained a socially constructed, inherently unstable form of authority, as it sought for simultaneous recognition within and outside the academy, in between state and society.[2] And as the 'expert society' has gradually replaced the notion of 'technocracy' in scholarly discourse, this instability of expertise has been laid bare through a healthy reassessment of individual expert careers, of individual and group-like modes of negotiation and survival, of expert respectability and political success.[3] In this volume, we wish to build upon these reassessments, through reformulating the 'expert experience' as a set of specific expert 'encounters' with the state and society, encounters which resulted in a renegotiation of the boundaries between these entities. It may be true that structural changes in Western societies such as the expansion of state power, the ever closer interweaving of state and society and the growing complexity of policy making altogether, have cleared the pathway for the advent of expert authority. Yet expertise only materialised through the *performances* of experts, who navigated continuously and carefully between the changing boundaries of state and society. These performances form the subject of this book.

In focusing upon expert performances between state and society, this volume builds upon two specific scholarly trends that have gained momentum during the last decade. Among historians of science, in the first place, the growing interest in 'expert societies' – both as socially engaged networks of scientists and as Western societies in which these experts' influence seemed to expand – clearly tapped into the broadly felt ambition to reformulate their own object as the study of all sorts of encounters between science and society, and to move beyond the study of discipline formation per se.[4] Whereas these ambitions may have materialised most clearly in the growing interest in the 'cultural' aspects of discipline formation itself, they have also incited historians to study the 'scientization' of ever wider problems of social life from the nineteenth century onwards. Departing from the long held belief that a scientific gaze could exemplify a social regime in itself – an approach which has reigned most forcefully among historians of medicine – historians of science have changed focus to the often localised interactions between scientists, public opinion and political establishment on the one hand, and the interplay between the power of scientific discourse and the attainment of social respectability by scientists on the other. Especially with regards to the social sciences, Lutz Raphael's famous thesis about the 'scientization of the social' has summed up most clearly that agenda. For Raphael, the rise of expert influence developed simultaneously with the pervasion of social methodologies within which the legal capacities, the ability to 'produce efficiently' and even the ability of happiness of social groups and individuals have been assembled since the nineteenth century. At the same time, however, Raphael has argued that these methods, whether they were medical or statistical, emerging from military and labour psychologies or embedded within the sociology of public opinion surveys, always met with legal borders, and with social resistance. Therefore the 'scientization of the social' should not be equated with the deployment of 'disciplinary' power, but with the continuous negotiation between political, economic, social and cultural contexts.[5]

Yet whereas historians of science have increasingly questioned science-society interactions during the last two decades, 'expertise' has gained an even stronger totemic status, in the second place, within science studies. In this interdisciplinary field as well, scholars have redefined the 'technocratic' negotiation between state power, the public sphere and academic authority in terms of expert performances.[6] Rather than considering expertise as a passive outcome of this negotiation, many scholars have stressed to what extent experts brought about this negotiation and therefore shaped these encounters alongside forms and beliefs that originated in between science, state and society. As the aim of many scholars in this field has been to design models of interaction between scientists and policymakers, the strategies used by experts to convince such an audience were crucial. In their efforts, the work of the American sociologist Erving Goffman, who used the metaphor of the theatre to study how individuals presented themselves in everyday interactions, proved influential.[7] Applying Goffman's theories in his *Science on Stage,* Stephen Hilgartner studied the apparatus through which science advice gained credibility, looking for example at the self-representation of science advisors and the reception of their advice. Hilgartner showed how science advisers tried to inspire confidence among their audiences by displaying trustworthiness, competence and integrity through their rhetoric and comportment.[8] Wiebe Bijker, similarly inspired by Goffman's metaphor, made a division between expertise's 'front stage' - the presentation of expert knowledge as a finished product - and 'back stage' - the process of producing expert knowledge. Such a division can equally be viewed as an effort to identify the different audiences to which experts are necessarily addressing themselves, and the inherent 'cleavage' that punctuates their performance.[9]

In this book, we aim to mobilize these gains from both the history of science and the science studies in order to further clarify the effectiveness of experts – and their expertise -

within modern knowledge societies. For if historians and sociologists of science have rightly refigured the frameworks within which expertise has come to dominate contemporary societies, this effectiveness itself remains to be fully grasped. In other words: if expert authority was the outcome of complex encounters between scientists, society and the state rather than the reflection of a distinct technocratic structure, it remains to be investigated why experts emerged so remarkably powerful from some of these encounters, whereas they were so easily defeated in others. And if expert performances – in the theatrical sense – may have contributed so much to the establishment of expert authority, then what sorts of performances underlie the relative success of Doiarenko and others, and the failures of so many of his competitors? What seems to be at stake here, is a reformulation of expert performances under the denominator of their effectiveness or their ability to shape modern societies alongside the assumptions that were structuring their particular 'scientization' of reality. In science studies, this effectiveness has often been defined as 'performativity', or the resorting of external effects.[10] In other words: the effectiveness of experts' role-playing before a particular audience and their ability to bring about change in the outside world are intrinsically linked up.

In his *Science on Stage* mentioned above, Hilgartner has mainly focused on the first aspect, when analyzing the extent to which experts succeeded in convincing their ever expanding audiences of their own authority, and managed to secure positions of power on the basis of those performances. With Hilgartner, we aim to see the effectiveness (or 'performativity') of expertise above all as a problem of embodiment – an embodiment by experts of a specialist role, and a set of scientific and social ideals connected with it. Yet, as many other sociologists of science have argued, this role-playing prefigured the transforming power of particular sorts of specialist knowledge in the outside world. As the British sociologist of science Donald MacKenzie has recently argued with regards to the role of economic expertise in the making of financial markets, modern experts not only endorse themselves with guidelines and instruments in order to convince the outside worlds of their powers in a theatrical manner, they do effectively transfigure social realities with the help of these instruments. Whereas, in his wordings, the performativity of expertise sometimes comes in very weak forms, in which case specialist knowledge is merely used to navigate complex social realities, effective expertise gradually becomes an engine of change in modern societies. In the strongest forms, like in Doiarenko's, social realities are increasingly shaped alongside the patterns of specialist knowledge.[11] In this book, we aim to investigate anew how, in the history of expertise, these 'weak' and 'strong' forms of expert effectiveness, have been correlating with each other. Or in other words: how the encounters and role-playing of modern experts have made the expert's society first thinkable, and then do-able.

Agency and Audience: The Innovations of Early Modern Expertise Scholarship

When studying expert performances and expert effectiveness, it may seem audacious to have historical scholarship tied in with the conceptual frameworks of the science studies. And even though historians have increasingly shifted towards broad histories of scientization and expertise, the performances within which much of this expertise seem to have materialised, have hitherto been taken up by them in rather diffuse manners. Also, historians have been less interested in modelling expert interaction, than scholars in the science studies.[12] And yet, with regards to expert embodiments on the one hand and the effectiveness of expertise on the other, many intuitions from the science studies have tacitly found their way to historical scholarship. These intuitions have not pressed historians to 'model' expert interactions, but rather helped them deepen their insight into the practices and procedures that experts have developed when

interacting with the state and society. In particular with regards to early modern societies, recent scholarship has intensely discussed the expert performances of astronomers and engineers, optics and fortress builders as they evolved centuries before the 'scientization of the social' or the contemporary expert performances that are being discussed in the science studies.

The 16th-18th centuries saw a proliferation of advisory practices as performed by different sorts of *savants*, whereas they also saw the first emergence of the concept 'expert (-witness)', within the context of the courtroom.[13] Small-scaled as these expert practices may have been, fully embedded within an interpersonal exchange between advisor and *patron*, and untainted by modern divisions between front stage and back stage, they nonetheless present the raw birth of a particular engagement of the expert with his audience. That is why Eric Ash, for instance, presents the early modern period as the first 'laboratory of expertise'. What came out of this laboratory were performances, rather than material effects, functions, let alone professions. As Ash convincingly points out, the early modern expert lacked most of the formal institutions that could provide experts with 'external' credentials, such as modern universities, government bureaus or professional organisations. Therefore, Ash continues, early modern expertise typically emerged as a cautiously crafted relationship of the expert with the audience he wished to convince of his credibility. Apart from the material effects of the expert's intervention (the astronomic calculation, the fortress or the bridge), the expert status seemed to depend solely from the public's willingness to recognise the expert as the main author of these effects, and thus from the expert's ability to present his competences in a compelling manner.[14]

Going further, historians of early modern expertise have demonstrated to what extent the agency of experts originated in their capacity to mediate between plural audiences. The concept of the 'expert mediator', developed by Ash in his study of expertise in Elizabethan England, places this interplay between experts and their (successive) audiences centre-stage. For Ash, the experts of the Elizabethan State constantly mediated between their patrons, the central administrators, and the objects these patrons wanted to control.[15] Such mediation required particular skills and strategies. Audiences, comprised of state officials, needed to be convinced of the validity of their expert knowledge. Such a necessity of demonstrating their skills and highlighting their capabilities was crucial for the early modern expert, whose legitimacy depended entirely on the support of these state officials. The link between this dependence and expert performances is for example shown by Andre Wakefield in his study of the discussions between the duke of Hannover and Gottfried Wilhelm Leibniz on the exploitation of the Harz silver mines. Wakefield shows how Leibniz trusted on his connections to scientific academies and on the rhetorical superiority of philosophical knowledge over the practical experience claimed by mining officials, to present himself as the leading expert on mining.[16] Again, the expert emerges as a mediator between the available knowledge and those wanting to use this knowledge for political or economical purposes. Ursula Klein has recently described these negotiations from the viewpoint of material culture as mediations 'between consumers and their goods'.[17] In early modern studies, the expert mediator has indeed formed a fruitful concept to unravel the way experts presented themselves as necessary links in the expansion of government power into new social areas by playing into desires and interests of their patrons.

Not surprisingly, the engagement of early modern experts with different audiences at a time, each with their own prerequisites, also helps to explain the plural character of expert roles themselves. As several historians have demonstrated, early modern experts did not form a distinct group or class in society. The variety of experts rather reveals that expertise should be viewed as the taking up of expert roles, which could be done effectively by all sorts of men. Apart from the early modern *savants*, scholars active in academies who acted as experts when

asked to provide advice to the government,[18] early modern historians have also pointed to a wide range of experts outside of scholarly circles. What made these men into 'experts' was their combining of learned knowledge with hands-on experience, 'borrowing skill, language, and explanations from both the artisanal and the scholarly worlds'.[19] Engineers, anatomists and physiologists as well as mining officials or assayers and many others could fit this category. What united them was their ability to blend different forms of knowledge to meet new niches of an expanding market of knowledge. The eighteenth-century 'artisanal-scientific expert' forms a typical example of these hybrid figures. Supported by the mercantilist state and keeping close ties with both industry and the world of academies, these men – chemists, botanists and engineers – took up expert roles that developed together with new state bureaucracies.[20] These diverse examples show that being a successful expert meant identifying the right audiences and presenting one's knowledge in such a way that it met the needs of these audiences. In these studies in early modern history, expertise appeared as something 'intermediary', which could only be investigated by looking at the audiences and spaces of expertise.

Expertise and Scientization since Modernity

For historians of modernity and beyond, these innovations of early modern expertise prove to be of great importance. In fact, experts' role-playing and continuous engagement with different audiences continued well beyond the early modern period. As has been implicitly argued in many historical studies since Roy Macleod's collection *Government and Expertise* in 1988, modern experts continued to invent their expertise themselves by responding to the needs of their audiences – the newly emerging administrative elites of liberal-capitalist societies – and thus to a large extent shaped their own fields of activity.[21] Yet the expansion of government intervention in ever more areas of social life dramatically changed the conditions within which these traditional advisory roles were being performed. Roughly between 1860 and 1960, opportunities for state backed expert performance rose sharply, as the different fields of government intervention were to be shaped and conceptualised, whereas the public and private institutions of technoscience transformed traditional expert crafts and academic disciplines.[22] At the same time, expert performances became loaded with the scientific ideals, the particular visions of the state and the ideological frameworks of the society in which service they believed to operate. As the scope of these expert performances expanded from the second half of the nineteenth century onwards, its effectiveness seemed to grow as well. This rise of modern 'technoscientific' expertise was a two-sided process. State expansion clearly generated an increasing demand for technical and scientific knowledge. But at the same time, processes of professionalization and specialisation expanded the 'supply side' of expertise and legitimated expert interventions in new areas. The result was a transformation of the early modern advisory expert role into a more complex form of expertise, which was also legitimised in new ways as science became ever more institutionalised in universities and academic disciplines.[23]

These structural changes may be beyond discussion – the question remains, however, how these shifts are best defined. As Thomas Broman recently emphasized, the place of the expert within them remains to be fully grasped – both as outcome and as inventor of newly emerging interactions between science, society and the state.[24] By reformulating fundamental changes in Western societies in terms of an increasing effectiveness of expertise, this volume draws attention to experts as individual actors who constantly reshaped the boundaries between science, state and society. In particular, three fundamental features of modern technoscientific expertise are taken into account. The first feature of this kind concerns the scientific grounding of expertise. Certainly, early modern experts often claimed to possess a theoretical, abstract

knowledge that was more objective than the technical skills and experience of craftsmen, which were said to be based in personal interests.[25] Modern experts, however, increasingly referred to the scientific basis of their knowledge to formulate similar claims of objectivity. By stressing the use of scientific methods, and applying scientific terminology, they distinguished themselves from other players in the field.[26] Such claims were strengthened by new institutional affiliations. Modern experts were not only trained at the universities, their expert knowledge was also legitimised by professional organisations, disciplinary communities such as specialised scientific societies, and new government commissions.[27] Support of public officials, bureaucrats and political leaders was therefore no longer the only way for experts to gain formal credentials. As a result, the early modern savants, who had provided expert advice at the request of the government, were gradually replaced by an army of new scientific specialists.

Simultaneously, increasing effectiveness of expertise also resulted in growing political and institutional embeddedness of experts - a second feature that we aim to discuss. Their intense affiliations with government institutions made modern experts different from their eighteenth-century predecessors who functioned within the context of government-funded academies. Modern experts became an integral part of power structures, assuming full-time positions within state infrastructure. Within these power structures, they took up leading roles as decision-makers, organisers and managers. The modern expert could become a statesman and not only legitimise, but also have a profound impact on policy making. Yet, this shift also produced new problems of independence and credibility. How could experts provide neutral advice to government officials, so critics argued, when they were on the pay roll of these same men? Again expertise required a careful balancing between the opportunities of working in government service, and the fragilities that emerged together with the intensified collaboration with the state.[28]

Finally, the increasing effectiveness of expertise is to be situated in a growing entanglement of expertise and political ideologies. In short, together with the scientist beliefs of experts, their expertise also became more grounded in ideology. The very conviction that science could carry through social changes, that scientific development could function as the driving force of social improvements, distinguished modern experts from their eighteenth-century predecessors.[29] Such an ideology was already present among nineteenth-century experts, but these views radicalised in the twentieth-century as the opportunities for experts intervention augmented. Public health experts and psychiatrists, for example, but also experts in labour division and educational experts increasingly engaged with politics in an attempt to carry their plans for social change into effect. Experts thus evolved from advisers to reformers. Even though they claimed to transcend party politics by implementing scientific views on social problems, experts increasingly became part of politically inspired reform movements. This paradox illustrates how modern expertise was closely connected to the changing position of science in society. The 'scientization' of politics, based on a shared positivist framework, indeed also meant that experts themselves became players in the political arena.[30]

Expert Encounters

The structure of this book reflects the performative perspective to the history of modern scientific expertise. The four parts represent a general pattern of expert performances: searching for audiences, convincing them, engaging with the state and (re)shaping the social and political objects under expert scrutiny. In that manner, we aim to develop a sample card of expert encounters, within which different degrees of expert effectiveness will be contextualized anew. Of course, these encounters complexified over time: specialist roles diversified as audiences

broadened in whose service these roles were performed, whereas the sets of scientific and social ideals connected with these performances multiplied likewise. As the chapters in this book will demonstrate, expert effectiveness was mediated simultaneously by the leverage of expert audiences, by the 'hospitality' of the specific field of social interaction that experts sought to exploit, and by the perceived usefulness, objectivity and reliability of the technical crafts and academic disciplines from which experts derived their specialist knowledge. In other words: the (socio-political) empowerment of expert performances by specific audiences also tied in with the effectiveness of a particular expert gaze. In a Foucaldian sense, the power that evolved from specific interactions between science, state and society, always intertwined with the disciplinary creed of specialist knowledge that put ever more fields of social reality under scrutiny. And whereas expert effectiveness originated from the vividness of the conversation between experts and their audiences, this same 'effectiveness' often came down to the objectification of the social realities they studied and shaped. In this manner, expertise itself became the watershed between the limited audiences in whose service experts operated, and the 'objectified' social realities they exploited at the service of these very audiences.

These general patterns of expert performances will be developed from a mostly 'European' perspective. While some chapters analyse expertise in particular national contexts, others take a broader international perspective or focus on specific international spaces of expert performance such as scientific conferences. All of them, however, engage with expertise as a European phenomenon. As Martin Kohlrausch and Helmuth Trischler have recently argued, the development of technoscientific expertise since the second half of the nineteenth century went hand in hand not only with the expanding infrastructure of the new nation states, but also with an increase in the exchange of knowledge on the international level by means of exhibitions and conferences.[31] 'Experts' nationalism and their international mindsets', Kohlrausch and Trischler argue, 'can be fully understood only in reference to one another'.[32] If such features can be considered typically 'European', their occurrence was not limited to the traditional European geography. As the chapters in this book show, similar expert performances took place in the United States and Russia.

In the first part of this volume, *Setting the Scene. Experts and their Public*, attention is paid to the variety of settings in which expertise was performed. The fields of ecological, electrical and medical expertise in the late nineteenth and early twentieth century cannot be understood, so the authors argue, without looking at the international conferences where experts addressed an audience of scientists, the meetings of learned societies where they spoke to their colleagues, or the lecturing halls in which they addressed a popular audience. Although the authors pay attention to the singularities of each of these settings and disciplines, similarities in the construction of expert authority do come to the fore. The scientific claims made by zoologists, electrical experts or public health professionals all functioned as markers that allowed distinguishing them from other aspiring experts, such as administrators, technicians or writers who popularised science. The importance of institutional affiliation, not so much to governmental commissions, but to established institutions that could support the scientific claims on which their authority rested, also stands out. By disentangling such mechanisms of expert authority, each of these contributions presents expertise as a field in the making, which developed 'bottom-up' rather than 'on demand'.

Graeme Gooday examines the performances of three ethnically diverse electrical experts in the settings of the late nineteenth-century experts' witness box in the court room and the lecturing hall. Their careers show, as Gooday concludes, that to become an expert in electricity, not so much mainstream ethnicity was required, but rather performative capacity with the spoken word and institutional affiliation through patrons. An institutional basis was also of importance to aspiring experts in the field of public health. Membership of scientific

medical societies, as Joris Vandendriessche shows, formed a way of strengthening one's expert authority. By analyzing the expert performances in two of these societies in nineteenth-century Belgium, Vandendriessche shows how the scientization of the field of public health occurred through reviews and debates in which scientific studies were distinguished from popular, administrative and philanthropic writings. Such delineating practices were also essential to the efforts of ecological experts in the early twentieth century. By examining the international conferences on nature protection, Raf de Bont shows how the authority of zoologists was co-constructed with the image of nature's internationality. This latter image proved an important rhetorical tool in the scientization of the field of nature protection, which led to the rise of zoologists as experts at the expense of ornithologists, colonial administrators, foresters and hunters.

The second part of this volume, *Science as a Belief. Experts and Social Reform*, consists of contributions that scrutinise the messages used by experts to convince their audiences. These messages were not only ways of displaying scientific skills; they also stirred enthusiasm, embodied political ideals and could even touch upon utopian beliefs. Such ideological narratives, as the contributions in this part show, were never homogeneous. In the fields of engineering, psychiatry and agriculture in the early twentieth century, a varied range of political views could be found among experts. This ideological multiformity certainly testifies to the particularity of each of these fields, but it also hints at a more general finding regarding the relation between expertise and politics. As Martin Kohlrausch argues in his contribution on experts in interwar Europe, expertise and politics became strongly intertwined in the early twentieth century. To study this intertwinement, Kohlrausch calls for more attention to the personal trajectories of experts, which can lead to a reassessment of the major turning points in the history of expertise.

The two other contributions in this part respond to this call. David Freis analyses the expert roles taken up by German and Austrian psychiatrists, which were shaped to a large extent by their experience of the First World War. Freis traces, more specifically, their attempts to join conservative political circles and infuse political discourse with medical terminology. By presenting themselves as the 'doctors of the nation' and by 'diagnosing the revolution', Freis concludes, these psychiatrists were able to establish themselves as socially influential professionals. Katja Bruisch equally examines the entanglement of individual trajectories with macro-political developments. In her contribution on agricultural experts in early twentieth-century Russia, Bruisch shows the manoeuvring of experts within rapidly changing political settings. The career of the agricultural scientist Doiarenko, in particular, shows the flexibility of scientific expertise when it comes to inspiring social reform, but also its fragility, as its social relevance was almost entirely based on the patronage of certain decision-makers.

The contributors to the third part of this volume, on *Diplomatic Strategists. National Government and Expert Ambitions*, discuss a specific type of expert encounter. They examine the interaction of experts with an audience of state officials that emerged together with the growing institutional embeddedness of expertise in the post-WWII welfare state. Per Lundin and Niklas Stenlås demonstrate how a group of Swedish experts – architects, economists, engineers, planners and scientists – were successful in presenting themselves as 'apolitical professionals' and worked their way to leading positions in government service. Lundin and Stenlås consider these experts as 'reform technocrats' and stress their undervalued role in the development of the post-war Swedish welfare state. Martin Theaker focuses on the interaction between state officials and atomic experts in post-war Britain. Theaker extends the definition of the 'scientist-diplomat', which has been used so far in the context of international scientific exchange, by including the domestic mediation of experts between the worlds of politics and

science. In both contributions the active role of experts as agents in the expansion of government services is stressed.

In the final part, *Objectification. Expertise and its Discontents*, the contributors reflect upon the relationship between authority and power in expert performances. When discussing this relation, the science studies have typically privileged problems of trust over matters of discipline. Especially with regards to the perceived crisis of legitimacy in contemporary expert societies, sociologists of science have depicted expert authority as the outcome of a conversation that eventually goes awry if increasingly demanding audiences finally outstretch the adaptability of particular groups of experts.[33] For many in the science studies, the sorts of interactions that expert performances entail are defined as the sequences of an ongoing (and mutual) exchange with ever greater and more 'democratic' audiences. In his contribution, Frank Huisman analyses the history of medical expertise in the Netherlands from a similar conversational perspective. Huisman explains the ambiguous fate of medical expertise from its growing inability to mediate between these new, different and more demanding audiences on the one hand and the scientific sphere on the other. In his comparison of three debates on medical legislation in the Netherlands – in the 1860s, the 1910s and the 1990s – Huisman traces back these heated exchanges to the conversational culture of civic liberalism, the culture of medical learned societies, and the liberties of Dutch constitutionalism. In that manner, he resurrects the cultural and political contexts that enabled these experts to embody a specific social role, within which restless audiences invested their trust only conditionally, and often temporarily.

Although very convincing with regards to the expansion of expert authority over ever greater parts of social reality, these conversationalist perspectives may not fully cover the *deployment* of expertise, and the disciplinary power that emerged from the interaction between experts and their objects, rather than between experts and their audiences. What seems to be at stake here, is a socio-political divergence of expert paths from the very beginning. On the one hand, the reform programs of many experts in liberal-capitalist societies (and in their competitors) became a means of expression for yet unarticulated interests and demands within which sectors of society came to recognize themselves. On the other hand, these programs simultaneously crowded out other social groups whose interests never materialized in expert discourse, and therefore became subject to objectification rather than invited into a conversation.

In spheres where public opinion remained relatively absent, expertise certainly was crucial in structuring and reinforcing hierarchies. In her analysis of the Third International Congress on the Scientific Management of Labour in Rome in 1927, Jennifer Alexander discusses expertise as an extension of discipline. By examining six experts who contributed to the congress, she shows how expertise obscured the individuality of workers and was used as a means to ensure required behaviours. A similar analysis of the role of expertise in the exercise of power is conducted by David Niget and Margo De Koster with regard to expertise in Belgian public policy towards 'endangered' childhood. Niget and De Koster examine the scientific practices in the youth observation institutions for juvenile delinquents of Mol and Saint-Servais from the 1910s to the 1950s. They reveal the seemingly contradictory nature of expertise, which seemed to lead to a certain empowerment of the inmates (through the pleas by experts for more responsibilisation), but which in the end mainly constrained them (as court judgments could be corroborated by the deterministic approaches of heredity and psychiatry). This contrast, they conclude, constitutes the political rationality of expertise. It reminds us that the historical study of expert performances necessarily entails both the cultivation of particular audiences and the disciplining of particular subjects. If we do not want to merely uphold the stories that modern

experts have kept telling about the successes of their performances, we need indeed to analyse the puzzling power of these performances themselves.

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[1] For a detailed analysis of A.G. Doiarenko's career as a scientist and expert, see the chapter by Katja Bruisch in this volume.

[2] T. Broman, 'The Semblance of Transparency: Expertise as a Social Good and an Ideology in Enlightened Societies', in R.E. Kohler and K.M. Olesko (eds), *Clio Meets Science. The Challenges of History*, *Osiris*, 27 (2012), pp. 188-208, on p. 188-93.

[3] Some examples of edited collections in the history of expertise in the last decade: B. Ziemann, K. Brückweh, D. Schumann, and R. Wetzell (eds), *Engineering Society. The Role of the Human and Social Sciences in Modern Societies, 1880-1980* (Houndmills: Palgrave 2012); M. Kohlrausch, K. Steffen, and S. Wiederkehr (eds), *Expert Cultures in Central Eastern Europe. The Internationalization of Knowledge and the Transformation of Nation States since World War I* (Osnabrück: Fibre, 2010); C. Rabier (ed.), *Fields of Expertise: A Comparative History of Expert Procedures in Paris and London, 1600 to Present* (Newcastle: Cambridge Scholars Publishing, 2007); F. Van Lunteren and R. Vermij (eds), *De opmars van deskundigen. Souffleurs van de samenleving* [Experts on the March. Prompters of Society] (Amsterdam: Amsterdam University Press, 2002).

[4] For a general overview: K. Olesko, 'Historiography of Science', in J.L. Heilbron (ed.), *The Oxford companion to the history of modern science* (Oxford: Oxford university press, 2003), pp. 366-70; On the most recent trends in the history of science: R.E. Kohler and K.M. Olesko (eds), *Clio meets Science. The Challenges of History*, *Osiris*, 27 (2012).

[5] L. Raphael, 'Die Verwissenschafltung des Sozialen als methodische und konzeptuelle Herausforderung für eine Sozielgeschichte des 20. Jahrhunderts', *Geschichte und Gesellschaft*, 22: 2 (1996), pp. 165-93.

[6] H.M. Collins and R. Evans, 'The Third Wave of Science Studies: Studies of Expertise and Experience', *Social Studies of Science*, 32 (2002), pp. 235-96; Idem, *Rethinking Expertise* (Chicago: University of Chicago Press, 2007); N. Stehr and R. Grundmann, *Experts. The Knowledge and Power of Expertise* (Londen and New York: Routledge, 2011); E. Kurz-Milcke, and G. Gigerenzer (eds), *Experts in Science and Society* (New York: Kluwer Academic/Plenum Publishers, 2004); K.A. Ericsson et.al. (eds), *The Cambridge Handbook of Expertise and Expert Performance* (Cambridge: Cambridge University Press, 2006).

[7] E. Goffman, *The presentation of self in everyday life* (Edinburgh: University of Edinburgh, 1956).

[8] S. Hilgartner, *Science on stage: Expert advice as public drama* (Stanford: Stanford University Press, 2000).

[9] W. Bijker, R. Bal, and R. Hendriks, *The paradox of scientific authority: the role of scientific advice in democracies* (Cambridge: MIT Press, 2009). On these models, see also the contribution by Frank Huisman in this volume. Roger Pielke presented the expert as an honest broker, who mediated between different audiences and whose attainment of expert authority clearly depends on this mediation: R.A. Pielke, *The Honest Broker: Making Sense of Science in Policy and Politics* (Cambridge: Cambridge University Press, 2007). On the mediating role of experts, see also: M. Callon and A. Rip, 'Humains, non-humains: morale d'une coexistence', in J. Theys, and B. Kalaora (eds), *La Terre outragée: les experts sont formels* (Paris: Autrement, 1992), pp. 161-82. The work of Sheila Jasanoff has been central to this research tradition: S. Jasanoff, *The fifth branch. Science advisers as policy makers* (Cambridge, Mass.: Harvard University Press, 1990).

[10] See e.g. M. Callon (ed.), *The Laws of the Market*. (Oxford: Blackwell Publishers 1998).

[11] D. MacKenzie, *An Engine, Not A Camera. How Financial Models Shape Markets* (Cambridge, Mass.: MIT Press, 2006) 1-36.

[12] On the relation, and growing separation, between the history of science and science studies: L. Daston, 'Science Studies and the History of Science', *Critical Inquiry*, 35 (2009), pp. 778-815. Some of the historical reserves of the study of expertise in *Science Studies*: Broman, 'The Semblance of Transparency', pp. 187-193.

[13] T. Golan, *Laws of Man and Laws of Nature: A History of Scientific Expert Testimony* (Cambdrige, Mass.: Harvard University Press, 2004). For a continental example, see P. Godding, *L'évolution de l'expertise en tant que preuve judiciaire, de l'Antiquité au 21e siècle* (Brussels: Académie royale de Belgique, Classe des Lettres, 2011).

[14] For an introduction into this field of study: E.H. Ash, 'Introduction. Expertise and the Early Modern State', in idem (ed.), *Expertise. Practical knowledge and the Early Modern State*, *Osiris*, 25 (2010), pp. 1-24, on p. 1-3, 18, 24.

[15] Idem, *Power, Knowledge, and Expertise in Elizabethan England* (Baltimore: Johns Hopkins University Press, 2003).

[16] A. Wakefield, 'Leibniz and the Wind Machines', in Ash, *Expertise*, pp. 171-88.

[17] U. Klein and E.C. Spary (eds), *Materials and Expertise in Early Modern Europe: Between Market and Laboratory* (Chicago: University of Chicago Press, 2010), p. 22.
[18] See for example: J.E. McClellan III, *Science Reorganized. Scientific Societies in the Eighteenth Century* (New York: Columbia University Press, 1985).
[19] Klein and Spary, *Materials and Expertise*, 6.
[20] U. Klein, R. Iliffe, and T. Levere (eds), 'Special Issue: Artisanal-Scientific Experts in Eighteenth-Century France and Germany', *Annals of Science*, 69:3 (2012), pp. 303-6.
[21] R. Macleod (ed.), *Government and Expertise: Specialists, Administrators and Professionals, 1860-1919*, (Cambridge: Cambridge University Press, 1988); J. Evetts, A.H. Mieg and U. Felt, 'Professionalization, Scientific Expertise, and Elitism: A Sociological Perspective', in Ericsson, *The Cambridge Handbook*, pp. 105-23.
[22] See for example: M. Kohlrausch and H. Trischler, *Building Europe on Expertise: Innovators, Organizers, Networkers* (Basingstoke: Palgrave Macmillan, 2014), 5-13; M. Kohlrausch, K. Steffen and S. Wiederkehr, 'Introduction', in: idem, *Expert Cultures in Central Eastern Europe*, p. 9-10; L. Raphael, 'Embedding the Human and Social Sciences in Western Societies, 1880-1980: Reflections on Trends and Methods of Current Research', in Ziemann, *Engineering Society*, pp. 41-56, on p. 48-54. Martin Kohlrausch also discusses the historical turning points in the history of expertise in his chapter in this volume.
[23] D. Pestre, 'Regimes of Knowledge Production in Society. Towards a More Political and Social Reading', *Minerva*, 41 (2003), pp. 245-261. The development of public health forms an example of both increased supply and demand for scientific advice, see for example: D. Porter (ed.), *The History of Public Health and the Modern State* (Amsterdam: Rodopi, 1994).
[24] Broman, 'The Semblance of Transparency'.
[25] Ash, 'Introduction', 8.
[26] T.M. Porter, *Trust in numbers: the pursuit of objectivity in science and public life* (Princeton: Princeton University Press, 1995); G. Gooday, '"Vague and Artificial". The Historically Elusive Distinction between Pure and Applied Science', *Isis*, 102: 3 (2012), pp. 546-54.
[27] Van Lunteren and Vermij, *De opmars van deskundigen*, p. 9-10; See also: T.L. Haskell, *The Authority of Experts: Studies in History and Theory* (Bloomington: Indiana University Press, 1984).
[28] On the credibility of experts, see: G. Gooday, 'Liars, Experts and Authorities', *History of Science*, 46 (2008), pp. 431-56; On the matter of scientific expertise and financing: C. Mukerji, *A fragile power: scientists and the state* (Princeton: Princeton University Press, 1989), p. 4-12.
[29] On expertise and social reform: C. Leonards and N. Randeraad, 'Transnational experts and social reform, 1840-1880', *International Review of Social History*, 55:2 (2010), pp. 215-39; I. de Haan, J. ten Have, J. Kennedy and P.J. Knegtmans (eds), *Het eenzame gelijk. Hervormers tussen droom en daad* [Solitary in their Right. Reformers between Word and Deed] (Amsterdam: Boom, 2009). An example from the history of technology: J.K. Alexander, *The Mantra of Efficiency: From Waterwheel to Social Control* (Baltimore: The Johns Hopkins University Press, 2008).
[30] See also: S. Fisch and W. Rudloff (eds), *Experten und Politik. Wissenschaftlische Politikberatung in Geschichtlicher Perspektive* (Berlin: Duncker & Humblot, 2004).
[31] Kohlrausch and Trischler, *Building Europe on Expertise*, 3-6.
[32] Ibid., 5.
[33] See for example: S. Turner, 'What is the Problem with Experts?', *Social Studies of Science*, 31 (2001), 123-49; Idem, *Liberal Democracy 3.0: Civil Society in an Age of Experts* (London: Sage, 2003); L. Dumoulin, S. Labranche, C. Robert and P. Warin (eds), *Le recours aux experts. Raisons et usages politiques* (Grenobles: Presses universitaires de Grenoble, 2005).