

# The De Glind Conference: A Retreat for Young Historians of ... Knowledge

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## ABSTRACT

This review attempts to grasp the variety of topics, approaches, and methods presented at the biannual History of Science Phd Conference, held in January 2017 at *De Glind*, and to embed the Dutch future of history of science in historiographical discussions.

*Keywords:* History of knowledge; Conference report; PhD research

## *Introduction*

At the beginning of January 2017, nineteen PhD candidates gathered in the ‘youth village’ *De Glind* (Gelderland, the Netherlands). This gathering continued the biannual *Promovendicongres Wetenschapsgeschiedenis*, which brings together young Dutch and (in earlier editions) Belgian historians of knowledge, and which previously met at Rolduc in Kerkrade. The conference programme reflected the move from a Catholic abbey to a twentieth-century social welfare village: many speakers were concerned with the societal engagement and ethical responsibility of recent science. The event was organized by Ivan Flis, Léjon Saarloos and Didi van Trijp, while support was provided by the Descartes Centre for the History and Philosophy of the Sciences and the Humanities (Utrecht University), Huizinga Institute (Research Institute and Graduate School of Cultural History), and Vossius Center for History of Science and Humanities (University of Amsterdam). The conference’s diverse programme more than matched the range indicated by the namesakes of the three sponsoring institutes.

This review attempts to grasp the variety of topics, approaches, and methods presented at *De Glind*, and to embed the Dutch future of history of science in historiographical discussions. In that respect, I echo the questions raised by Noortje Jacobs (Maastricht University),

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*The De Glind Conference*



Participants of the 'De Glind' conference, 12–13 January 2017.

one of the participants, in a recent 'Focus' section of *Isis* on the agenda-setting *History Manifesto*: 'One challenge posed (...) is how to integrate [a] plurality of viewpoints into causally complex but nevertheless singular narratives' and 'where do we historians of science stand on this?'<sup>1</sup> The projects pursued by the PhD candidates, on the one hand, reflected recent methodological improvements for transcending academic compartmentalization and the locality of microlevel studies. On the other hand, the 'projectification' of historical research frustrated possibilities for more inclusive and general reflections on knowledge. The first point will be emphasized throughout this review, while I will come back to the last point in the concluding sections.

### *Knowing Selves and Society*

The scientific persona as thematic focus is one way to move beyond microlevel casestudies. In this way, one lecture about a Galilean controversy could speak directly to papers dealing with twentieth-century science. Anna-Luna Post (Utrecht University) discussed the 'mechanics of reputation' and the 'dynamics of plagiarism' with respect to the 1607 controversy between Galileo Galilei and his former student Baldassare Capra. She demonstrated that the Florentine natural philosopher, who had not yet risen to fame, strategically attacked Capra for plagiarizing his *Le Operazioni del Compasso Geometrico e Militare*, by translating it into Latin without any reference to the original. To claim credit, Galileo did not keep the affair private, as Capra might have hoped in a scholarly exchange. Instead he made it public, by following the legal route to the end and mobilizing allies to speak in his name. From the discussion, it emerged that a historical approach to the construction of scholarly reputation, as scientific virtue and moral basis for public credibility, has a clear relevance.<sup>2</sup>

This feature connected the paper on early-modern Italy to a series of papers about the scholarly persona in other eras and fields. In a thick and networked way the persona approach to history of science is in vogue, because the perspective transcends divisions between society, disciplines, and times.<sup>3</sup> Christiaan Engberts (Leiden University) discussed the construction of reputation through mutual evaluation in private correspondence between late nineteenth-century oriental scholars.<sup>4</sup> Although many shared a 'judicial self-

1 Noortje Jacobs, 'Summary of "The History Manifesto"', *Isis* 107:2 (2016) 311–314. <https://doi.org/10.1086/687177>. Also see David Armitage and Jo Guldi, *The History Manifesto* (Cambridge 2014).

2 In a way this is a continuation of the question what makes an epistemically trustworthy agent, as introduced by Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago 1994).

3 The historiographical tool of the 'persona' was first introduced in Lorraine Daston and H. Otto Sibum, 'Introduction: Scientific personae and Their Histories', *Science in Context* 16:1–2 (2003) 1–8. <https://doi.org/10.1017/S026988970300067X>. Last year, *BMGN – Low Countries Historical Review* published a special issue on the topic: Herman Paul (ed.), 'Scholarly Personae: Repertoires and Performances of Academic Identity', *BMGN – Low Countries Historical Review* 131:4 (2016). Also see Jo Tollebeek, *Men of Character: The Emergence of the Modern Humanities* (Wassenaar 2011). Very different approaches exist, and to what extent we can speak of 'biographical' is topic of discussion. See Leen Dorsman and P  j   Knegtmans (eds.), *De menselijke maat in de wetenschap. De geleerden(auto)biografie als bron voor de wetenschaps- en universiteitgeschiedenis*. Universiteit en Samenleving 11 (Hilversum 2013).

4 Engberts writes his PhD as part of the NWO-VIDI project *The Scholarly Self: Character, Habit, and Virtue in the Humanities, 1860–1930* (Herman Paul). Visit for more information: <https://www.universiteitleiden.nl/en/research/research-projects/humanities/the-scholarly-self-character-habit-and-virtue-in-the-humanities-1860-1930> (01-05-2017).

representation' of the ideal scholar, it remained controversial what precisely made a good scholarly judge. Engberts highlighted how, in contrast to Galileo's public approach, Professor of Arabic M. J. de Goeje from Leiden preferred private and constructive judgements of other scholars to public condemnation.<sup>5</sup>

The series of papers on scholarly personae all transcended the case study by highlighting transdisciplinary themes like the relation of science to society, or the body. Thrilling examples were presented by Léjon Saarloos (Leiden University) and Chaokang Tai (University of Amsterdam). Through the virtue of *desire* in late Victorian Britain, Saarloos was able to connect the bodies of men of science to abstract ideals of science. Heroic stories of scientific explorations that put the existence of the body at risk were told over and over to illustrate the deep connection with the progress of science as a whole: they were prepared to devote their whole life to it.<sup>6</sup> Tai attempted to relate the astronomer Anton Pannekoek to early twentieth-century European society. Pannekoek is well known as a prominent Marxist, but this conviction was in principle separated from his astronomical science. His writings on science – obituaries, correspondence, autobiography, and history of science – offer us a glimpse of societal virtues of the scientific persona such as austerity, simplicity, and humanity.<sup>7</sup>

An issue raised by these biographical case studies, from Galileo to Pannekoek, is where the private sphere ends and the public domain begins.<sup>8</sup> This point, raised by Usman Ahmedani (University of Amsterdam), draws attention to a philosophical issue that invites comparative study by historians of science, between disciplines, nations, and ages. Related to this is the following question: why should we be interested in the virtues of *scientific* persons in particular?<sup>9</sup> This connects to a tradition started by Daston and Galison's *Objectivity* to relate the scientific self with the epistemic conduct of science.<sup>10</sup>

### *Making Knowledge Visible*

In such historical epistemological studies especially techniques and criteria of visualization have received serious attention. Robbert Striekwold (Leiden University) presented the interactions which the Leiden naturalist Hermann Schegel cultivated with artists in the construction of 'realistic' illustrations. Striekwold demonstrated how Schlegel's influential text on pictorial conventions in natural history placed scientific interests above aesthetic considerations: the artist was made to serve the naturalist. In line with scientific developments – nomenclatural types came to replace the type-specimen – this contributed to

5 A related publication is: Christiaan Engberts, 'The Scholar as Judge: A Contested Persona in Nineteenth-Century Orientalism', *BMGN – Low Countries Historical Review* 131:4 (2016) 93–111. <http://doi.org/10.18352/bmgn-lchr.10266>.

6 Saarloos also participates in the *The Scholarly Self* project (n. 4) and recently published on the topic: Léjon Saarloos, 'Virtue and Vice in Academic Memory: Lord Acton and Charles Oman', *History of Humanities* 1:2 (2016) 339–354. <https://doi.org/10.1086/687971>.

7 Recently published as Chaokang Tai and Jeroen van Dongen, 'Anton Pannekoek's Epistemic Virtues in Astronomy and Socialism: Personae and the Practice of Science', *BMGN – Low Countries Historical Review* 131:4 (2016) 55–70. <http://doi.org/10.18352/bmgn-lchr.10264>.

8 Historical perspectives specifically geared at knowledge practices and the public sphere could add to existing literature: Christian J. Emden and David Midgley, *Changing Perceptions of the Public Sphere* (New York 2012).

9 In contemporary philosophy of science the study of scientific personae is undertaken to create possibilities for alternative selves: Isabelle Stengers, 'Scientific Passions', in: Eadem, *Cosmopolitics I* (Minneapolis 2010) 1–13.

10 Lorraine Daston and Peter Galison, *Objectivity* (New York 2007).

the standardization of naturalistic illustration in the nineteenth century.<sup>11</sup> Commentator Andrea van Leerdaam (Utrecht University) correctly suggested that concepts of realism were just as important in art, literature – and nowadays – videogames as in science, and that the solution to the limit of representation (it is never a replacement) is different in each culture and age.<sup>12</sup>

Van Leerdaam's own presentation on woodcuts as reading aids in the early sixteenth century was a case in point. Presentational features of Dutch books about nature were central, she claimed, in the vernacular reader's experience, expectation, and interpretation. Beyond the images and illustrations themselves, she reoriented attention to the materiality of the visual and its crucial role in knowledge transfer. The production and recycling of woodcuts suggest much about intended audiences and publishers' interests. The relation of the image to the text and material traces left by users can reveal in what way knowledge was transferred to this audience.

### *Networked Knowing*

Knowledge transfer has been a contested concept for its linearity and imperialism for a while now. Jim Secord's suggestion to speak about 'circulation of knowledge' as overarching theme for history of science was a recurring subject of debate at *De Glind*.<sup>13</sup> Very different case studies centred on networks in knowledge production and dissemination, using the concept of circulation to its full potential. Didi van Trijp (Leiden University) offered an insight into the networks of scholars, fishermen, and fish on which the early modern fishbook of John Ray relied.<sup>14</sup> Together with the above mentioned Striekwold, Van Trijp is part of the NWO (Netherlands Organisation for Scientific Research) project *New History of Fishes*.<sup>15</sup> Her move beyond a social network of correspondence between scholars illustrates a direction in history of science that became manifest in various discussions: the equal inclusion of more and more 'non-scientists', be they epistemic objects, material carriers, family members, skilled workers, artists, et cetera.<sup>16</sup> It reflects the idea

11 Joeri Witteveen, 'Suppressing Synonymy with a Homonym: The Emergence of the Nomenclatural Type Concept in Nineteenth Century Natural History', *Journal of the History of Biology* 49:1 (2016) 135–189. <https://doi.org/10.1007/s10739-015-9410-y>.

12 Such intersecting themes are touched upon in Peter Galison and Caroline A. Jones, *Picturing Science, Producing Art* (London 1998). Striekwold connected to this with reference to sources in media history, like H. Ahrens, 'De natuur stilzetten op papier. Wetenschappelijk illustratoren van Naturalis leggen de dierenwereld vast', *Tijdschrift voor Mediageschiedenis* 12 (2009) 233–274.

13 James A. Secord, 'Knowledge in Transit', *Isis* 95:4 (2004) 654–672. <https://doi.org/10.1086/430657>. Several basic claims of this approach have been challenged, especially the focus on circulation as 'communication', see Kapil Raj, 'Beyond Postcolonialism... and Postpositivism: Circulation and the Global History of Science', *Isis* 104:2 (2013) 337–347. <https://doi.org/10.1086/670951>.

14 Main sources for the historical study of scientific observations are Sachiko Kusukawa, *Picturing the Book of Nature: Image, Text, and Argument in Sixteenth-Century Human Anatomy and Medical Botany* (Chicago 2012); Lorraine Daston and Elizabeth Lunbeck, *Histories of Scientific Observation* (Chicago 2011).

15 See <https://www.universiteitleiden.nl/en/research/research-projects/humanities/new-history-of-fishes> for more information about the project *New History of Fishes*. A long-term approach to fishes in science and culture, 1550–1880 (Paul Smith & Eric Jorink).

16 See Ruth Ahnert, 'Maps Versus Networks', in: Joad Raymond and Noah Moxham (eds.), *News Networks in Early Modern Europe* (Leiden 2016) 130–157, 131. [https://doi.org/10.1163/9789004277199\\_006](https://doi.org/10.1163/9789004277199_006); Elizabeth Yale, *Sociable Knowledge: Natural History and the Nation in Early Modern Britain* (Philadelphia 2016).

that knowledge is *doing* much more than merely contemplation.<sup>17</sup> Van Trijp made visible the network of practices and people that expanded the definition of ‘expert’ in early modern Europe. The skills and knowledge of fishermen and fishmongers counted as trustworthy observation, and were thus central to the rise of empirical science and the discipline of ichthyology.

Lucie Bastiaens (Maastricht University) also focused on expertise and networks, but her starting point was much less scholarly and much more recent. The development of social psychiatry in Maastricht between 1880 and 1965 demonstrates the power of social networks of expertise. Until World War II public healthcare was the business of philanthropic organisations from various religious and ideological backgrounds. Through committees these organizations tied a variety of experts (psychologists, psychiatrists, priests, politicians) to their cause, to help people with ‘mental instability’. After 1945 the field of social psychiatry professionalized and broadened its scope from individuals to society as a whole. The construction of a special neighbourhood in Maastricht to re-educate ‘problem citizens’ under the daily supervision of a team of experts, was the epitome of this development. The discussion following both papers was rewarding, for example stressing the innovative importance of ‘weak ties’ and relating the scientific developments to other practices like law and history.<sup>18</sup>

### *Planning Progress*

A notable trend at *De Glind* was the attention for Dutch governance of science in the post-war period. Three talks on policy concerned with science, typically developed in the 1960s–1980s, tackled the social-democratic impulse to plan, deliberate, and evaluate the ‘maakbare’ (malleable) society.

Jorrit Smit (Leiden University) discussed the coming into being of the first explicit science policy in the Netherlands and how this led to an ‘identity crisis’ at Leiden University.<sup>19</sup> Rather than turning the coordination of science into a political topic, he claimed that the policy depoliticized science. The slow top-down bureaucratic process in which the political vision was cast, made political discussion or democratic accountability a matter of form. The universities, in the meantime, actively presented themselves as ‘open to society’ at various academic ceremonies, to resonate more with the rapidly changing surroundings. The bottom-up activist efforts by researchers were used to this end as well by university governors, while a connection to national science policy was lacking. A similar tension between autonomic expertise and democratic accountability

17 See Annemarie Mol, *The Body Multiple: Ontology in Medical Practice* (Durham 2002) for discussion of knowledge as ‘doing’ in science studies. In that respect it was regrettable no PhD candidate was present from the ARTECHNE research project at Utrecht University on re-enactment of technical expertise in early modern science and arts. See <http://artechne.wp.hum.uu.nl/> and Sven Dupré, ‘Materials and Techniques between the Humanities and Science: Introduction’, *History of Humanities* 2:1 (2017) 173–178. <https://doi.org/10.1086/690577>.

18 For weak ties, see Mark Granovetter, ‘The Strength of Weak Ties’, *American Journal of Sociology* 78 (1973) 1360–1380, 1361. <https://doi.org/10.1086/225469>. For parallels between science, law, and history see Barbara J. Shapiro, *A culture of fact: England, 1550–1720* (Ithaca 2003).

19 Forthcoming as Jorrit Smit, ‘Geen waardevrij bolwerk van de vrijheid meer: De ‘identiteitscrisis’ van de Universiteit Leiden in de jaren 1970’, in: L.J. Dorsman and P.J. Knegtmans (eds.), *Universiteit en identiteit. Over samenwerking, concurrentie en taakverdeling tussen de Nederlandse universiteiten*. Universiteit en samenleving 14 (Hilversum, forthcoming in 2017).

was visible in Noortje Jacobs' presentation on research ethics committees. These 'obligatory passage points' appeared in the 1970s to control human experiments in science: as internal safeguards against atrocities through detachment of scientific practice from state involvement, and as external accountability to society.<sup>20</sup> As such, they mediated an expertocratic solution to the role of science in medicine, and a democratic solution to the role of medicine in society.

The relations between science, governance, and activism in the twentieth century were again of significance in a session on animals. Anne van Veen (Utrecht University/RIVM) showed that the 1970s were also a turning point for the development of Dutch legislation on animal testing. While activist opposition towards animal testing was growing, legal structures were formalized. With an exciting post-humanist approach to lab practices, Van Veen hopes to make tangible the 'choreography of human-animal dyads' as they interdependently move around the lab in the process of knowledge production. The methodological challenge about how to make embodiment historically visible was raised in the discussion of Van Veen's paper.<sup>21</sup> Steven van der Laan (Utrecht University) explored the emergence of hybrid pig breeding and the relation between agricultural scientists and pig breeders.<sup>22</sup> He altered the linear view on scientific expertise by making the contingencies involved visible. The hype for the Duroc pig was not the result of conclusive experimental research, measurement, and quantification by science; rather the experiment was the product of existing practices, interests, and power relations. Ultimately, in the discussion, Van der Laan stressed that even the best intentions of scientists and practitioners can lead to bad decisions and undesirable consequences.

### *Dealing with Disciplines*

The question of disciplinarity of science and its continuation in history of science, took centre-stage in different ways. Four speakers discussed twentieth-century developments in psychometrics, cosmology, psychoanalysis, and pedagogy through different approaches. The notion of discipline in science is therefore still a binding concept in history of science: although the objects of research vary, we can discuss, understand, and compare the social institutionalization and epistemic development of a field.<sup>23</sup> Jaco de Swart

20 For obligatory passage points, see Michel Callon, 'Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay', *The Sociological Review* 32 (1984) 196–233. <https://doi.org/10.1111/j.1467-954X.1984.tb00113.x>.

21 Van Veen was one of the few who found methodological inspiration in critical and feminist philosophies, like Karen Barad, 'Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter', *Signs: Journal of Women in Culture and Society* 28:3 (2003) 801–831. <https://doi.org/10.1086/345321>; Judith Butler, 'Performative Agency', *Journal of Cultural Economy* 3:2 (2010) 147–161. <https://doi.org/10.1080/17530350.2010.494117>.

22 Van der Laan's project is part of *Scientific Innovation in Livestock Breeding in the Netherlands, 1900–2000* (Bert Theunissen). For more information visit <http://www.nwo.nl/onderzoek-en-resultaten/onderzoeksprojecten/i/20/8120.html>. For a recent study of this subject see M. Derry, *Masterminding Nature: The Breeding of Animals, 1750–2010* (Toronto 2015).

23 For the sciences, see for example: Timothy Lenoir, *Instituting science: The cultural production of scientific disciplines* (Stanford 1997); Daan Wegener, 'Wetenschapsgeschiedenis op lange termijn: flexibiliteit en fragiliteit van disciplines', *Studium* 4:1 (2011) 16–30. <http://doi.org/10.18352/studium.1530>. For the humanities, see: Jo Tollebeek, 'Disciplines en studies. Vernieuwing in de geesteswetenschappen', *Studium* 6:2 (2013) 79–90. <http://doi.org/10.18352/studium.9194>.

(University of Amsterdam) explained how ‘dark matter came to matter’ in the 1970s.<sup>24</sup> The positivistic assumption that the evidence accumulated and spoke for itself was refuted by De Swart, who instead showed *how* certain results became regarded *as* evidence. He pointed to a combination of institutional developments in the post-war American science system and interests of various scientific actors that made cosmology – and the theory of and evidence for dark matter – a binding element and a problem-solving factor.<sup>25</sup>

Lisa Wijsen (University of Amsterdam) also attentively studied epistemic developments within a field, namely the persisting use of the latent variable in psychometric explanations of the correlation between intelligence (IQ) and test scores. The ontological status of the variable has been controversial in the twentieth century, with a shift from realism to instrumentalism. Wijsen claimed that the observed shift in interpretation had to do with a broader development in the epistemic values in psychology, namely from understanding towards prediction. Interestingly both Wijsen and De Swart conducted interviews to chronicle the history of scientific disciplines in the last century. The use of oral history, widespread in many qualitative social sciences, is still rather underdeveloped in the historical study of science. It might even contribute to a more global history of science as it can make other kinds of interactions visible.<sup>26</sup>

Concerning psychoanalysis and pedagogy, Ivan Flis and Pieter van Rees looked into journals to make changes visible. Van Rees (University of Groningen) traced changing ideas about citizenship education in the twentieth century by examining *Pedagogische Studiën*, between 1920 and 1980. This topic combined knowledge from political, biological, and several social sciences, and is a reflection of contemporary societal issues. From its concern with personalism and fascism in the 1930s, citizenship education focused subsequently on democracy (until 1960s), organization of education (1970s), to a preoccupation with experimental statistics (1980s). Van Rees’s qualitative analysis of 60 years of publishing in pedagogy observed a shift from person, patron, and philosophy to politics, specialists, and social sciences. Ivan Flis (Utrecht University) used a ‘big data’ approach to devise co-occurrence maps of the content of psychological journals between 1950 and 1999. With the metadata of 700,000 journal articles, he visualized maps to discern sub-fields and developments between disciplines. Through this innovative approach, Flis observed that psychoanalysis ‘moved around’ in a conspicuous way in his digital visualization of disciplinary developments. Here a new methodology in a way created a new fact to be explained – assuming it is not merely an artefact of the method. Conclusively, Flis offered several ways of accounting for the observed development, either through existing

24 Recently published online as: Jaco de Swart, Gianfranco Bertone, and Jeroen van Dongen, ‘How dark matter came to matter’, *Nature Astronomy* (2017). <https://doi.org/10.1038/s41550-017-0059>.

25 David Kaiser, ‘Cold War Requisitions, Scientific Manpower, and the Production of American Physicists after World War II’, *Historical Studies in the Physical and Biological Sciences* 33:1 (2002) 131–159. <https://doi.org/10.1525/hsps.2002.33.1.131>; David Kaiser, ‘Whose Mass is it Anyway? Particle Cosmology and the Objects of Theory’, *Social Studies of Science* 36:4 (2006) 533–564. <https://doi.org/10.1177/0306312706059457>.

26 Chowdury recently proposed to use oral methods in areas where archival sources are lacking, demonstrating an intersection between methods and local histories: Indira Chowdhury, ‘A Historian among Scientists: Reflections on Archiving the History of Science in Postcolonial India’, *Isis* 104:2 (2013) 371–380. <https://doi.org/10.1086/670955>.

historiography or seeing it as the demand for new kinds of history.<sup>27</sup> Both the qualitative and the digital studies of disciplinary journals raised questions about the concept of discipline itself: is it useful and what are its boundaries?

The recently launched projects of Sjang ten Hagen and Emma Mojet (University of Amsterdam), reflected conceptually on this issue, by stating that the ‘circulation of knowledge’ approach largely failed to describe interdisciplinary interactions. As part of the larger project *The Flow of Cognitive Goods* they proposed to look at interchanges of virtues, techniques, language, concepts, and methods between disciplines to achieve a ‘post-disciplinary’ approach in history of science.<sup>28</sup> Mojet will look at a field that is interdisciplinary by nature – the cognitive sciences in the twentieth century – while Ten Hagen will focus on the transdisciplinary origin of a classical discipline – theoretical physics and its relation to philology around 1800. The proposal to drop Secord’s focus on communication and the historiographical omnipresence of ‘practices’ in favour of the yet undefined cognitive goods led to heated discussion.<sup>29</sup> Especially the assumption that too little work is done on interdisciplinarity in history of science was challenged, as many works trace concepts or methodologies that cross disciplinary borders without mentioning this specifically.

### *Research as Project*

As a whole, the contributions to the conference already surpassed a narrow disciplinary approach. Funding practices appear to play a role here. The earlier mentioned larger NWO projects are typically of an interdisciplinary nature, for example combining historical and biological research, or incorporating history of sciences and humanities.<sup>30</sup> Also the NWO programme *Promoties in de Geesteswetenschappen* has its effect, as it allows individual PhD researchers to translate their diverse interests and (academic) backgrounds into original projects in history of science. The examples of Jacobs, Leerdam, Post, and Smit demonstrate the ensuing range of topics, periods and approaches.

The great importance of funding of history of science research by research councils (the so-called *tweede geldstroom*, ‘secondary funding’) also streamlines research in less desirable ways. The ‘projectification’ of research leads to an emphasis on practical tenability and

27 Flis related to discussions within the history of psychology and between historians and psychologists. For example C.D. Green, ‘A Digital Future for the History of Psychology?’, *History of Psychology* 19:3 (2016) 209–219. <https://doi.org/10.1037/hop0000012>; M. Pettit, D. Serykh, and C.D. Green, ‘Multispecies Networks: Visualizing the Psychological Research of the Committee for Research in Problems of Sex’, *Isis* 106:1 (2015) 121–149. <https://doi.org/10.1086/681039>; N. Weidman, ‘Overcoming our Mutual Isolation: How Historians and Psychologists Can Work Together’, *History of Psychology* 19:3 (2016) 248–253. <https://doi.org/10.1037/hop0000042>.

28 See <http://www.flow.humanities.uva.nl/> for more information about the project *The Flow of Cognitive Goods. Towards a Post-Disciplinary Historiography of Knowledge* (Jeroen van Dongen, Rens Bod, Bart Karstens).

29 For the origin and historical use of ‘practice’ see Daniel J. Hicks and Thomas A. Stapleford, ‘The Virtues of Scientific Practice: MacIntyre, Virtue Ethics, and the Historiography of Science’, *Isis* 107:3 (2016) 449–472. <https://doi.org/10.1086/688346>.

30 For the history of the humanities see Rens Bod, *A New History of the Humanities* (Oxford 2013); and in relation to the history of science see Rens Bod and Julia Kursell, ‘Introduction: The Humanities and the Sciences’, *Isis* 106:2 (2015) 337–340. <https://doi.org/10.1086/681993>.

a demand for relatively short-term results.<sup>31</sup> Subsequently, many case studies focus on the Netherlands or traditional scientific great powers like Germany, France and Britain. Kapil Raj's demand that historians of science break Eurocentric frames and become aware how knowledge is altered when it travels, therefore, remains largely unanswered.<sup>32</sup> All in all, there was little attention for cultures outside of the American-European sphere. Usman Ahmedani's paper on Romantic nationalism in the late Ottoman Empire came closest to taking account of the political nature of knowledge transfer and ideals of science from a non-Western perspective. Although the mixture of scientism and romanticism in national – Turkish in this case – ideology and identity is a known phenomenon, Ahmedani's attempt to study appropriations and alterations was an appealing alternative.<sup>33</sup>

### Past & Future

At *De Glind* one could observe the materialization of previously proposed methodological innovations. Even the resurfacing of relatively old historiographical problems and sources – like the 1985 *Leviathan and the Air Pump* as most important reference in an unsettled internalism versus externalism debate – is in tune with current historiographical discussions.<sup>34</sup> But historians of science could also find new battleground and vocabulary by interacting more closely with other areas of science studies that employ and research concepts as facts, politics, democracy, ontology, and practice.<sup>35</sup> Some topics are perennial, however, as each time and scholar has to solve them anew: for example the relation of philosophy to history and the combination of activism and 'objectivity'. It is hopeful that the new generation is actively confronting the emancipatory narratives of the European post-war period.

To come back to the *History Manifesto*, and the many issues its writers raised; it appears a serious challenge for historians of science at Dutch universities to organize

31 Oili-Helena Ylijoki, 'Conquered by project time? Conflicting temporalities in university research', in: Paul Gibbs et al. (eds.), *Universities in the Flux of Time: An Exploration of Time and Temporality in University Life* (London 2014) 94–107.

32 Kapil Raj, 'Beyond postcolonialism' (n. 13).

33 Ahmedani based himself on the framework introduced by Joep Leerssen, 'Nationalism and the Cultivation of Culture', *Nations and nationalism* 12:4 (2006) 559–578. <https://doi.org/10.1111/j.1469-8129.2006.00253.x>.

34 Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton 2011, 1st ed. 1985). Recently, *Isis* revisited the reception and impact of this book in a 'Second Look' section with a response by the authors. See for example the contributions of two young Dutch historians of science: Azadeh Achbari, 'The Reviews of Leviathan and the Air-Pump: A Survey', *Isis* 108:1 (2017) 108–116. <https://doi.org/10.1086/691398>; Jeroen Bouterse, 'Comment: On Rereading a Classic', *Isis* 108:1 (2017) 130–132. <https://doi.org/10.1086/691416>.

35 For 'facts' and post-truth see Sergio Sismondo, 'Post-truth?', *Social Studies of Science* 47:1 (2017) 3–6. <https://doi.org/10.1177/0306312717692076>. For 'politics' see Mark Brown, 'Politicizing science: Conceptions of politics in science and technology studies', *Social Studies of Science* 45:1 (2015) 3–30. <https://doi.org/10.1177/0306312714556694>. For 'democracy' in debates about expertise, see Darrin Durant, 'Models of Democracy in Social Studies of Science', *Social Studies of Science* 41:5 (2011) 691–714. <https://doi.org/10.1177/0306312711414759>. For 'ontology' see Steve Woolgar and Javier Lezaun, 'The wrong bin bag: A turn to ontology in science and technology studies?', *Social Studies of Science* 43:3 (2013) 321–340. <https://doi.org/10.1177/0306312713488820>. For 'practice' see the contributions of Karin Knorr-Cetina and Joseph Rouse in Theodore Schatzki, Karin Knorr Cetina, and Eike von Savigny (eds.), *The Practical Turn in Contemporary Theory* (London 2001).

long-term perspectives and formulate complex singular narratives. This generation of young historians does embody many of the recent approaches that abandon disciplinary, geographical, and societal boundaries. In the same vein they could discard the delimitation history *of science*: the diversity of topics and approaches is better covered by *histories of knowledge*.