

1 | *A tricky equation*

On Saturday 2 June 1739, at nine o'clock in the morning, five men gathered for a meeting in the Auditorium illustre on the first floor of Riddarhuset – the House of Nobility – in Stockholm. Their intention was “to initiate the founding of a planned Society”.¹

Those assembled there had varying backgrounds. Mårten Triewald was *kaptän mechanicus*, captain of mechanics, at the Fortification Administration. As an enthusiastic pioneer in the era's experimental physics and its applications, he had held popular lectures about this new natural science at Riddarhuset. He had learned about it during the many years he spent in England, moving in the circles around the Royal Society, of which he became a Fellow in 1731 and regarded as a potential model for a Swedish society. In the autumn of 1738 he made the acquaintance of Carl Linnaeus, who had started practicing as a physician in Stockholm. Linnaeus had returned home after some years abroad, during which he published botanical works that quickly made him a scientific luminary. The Académie Royale des Sciences and other academies were keen to have him as a corresponding member. Even before his departure, Linnaeus had experienced what a learned society could offer, as the Society of Sciences in Uppsala had provided him with funding for a Laplandic research journey. With Linnaeus, Triewald discussed the possibility of founding a society that was focused on practical benefit, not Latinate learning. Triewald also brought an acquaintance into their discussions, Baron Anders Johan von Höpken. He too was an academic, insofar as he had been elected to an academy in Marseille during a foreign visit. But, most of all, he was a man of the state and a rising star among the Hats, the political group that had just come to power in the government of the Age of Liberty, 1719–1772. The Hats took a pragmatic approach to the realm's economy and everything that could be expected to contribute to it, such as science. In his position as a state official, von Höpken started to draft statutes for this intended society. Using his influence, he could work towards political support for their plans.



IN THE TRANSACTIONS OF THE ACADEMY OF SCIENCES, which were published quarterly from 1739, an allegorical vignette was depicted on the first page. This vignette from 1749 shows the construction of the Academy's observatory. The building was designed by Carl Hårleman and inaugurated in 1753.

The three men contacted the merchant and consul Jonas Alström, whose manufacturing business benefitted from the economic policies that prioritised domestic production. He was an old friend of Triewald, from their time together in England. The group met in his home to develop their plans. The fifth participant in the meeting at Riddarhuset, Baron Sten Carl Bielke, was an assessor at the court of appeal and keen amateur researcher in botany and “œconomy”. He shared these interests with Baron Carl Wilhelm Cederhielm. Some years previously, they had both discussed the possibility of founding an academy but concluded that they were in no situation to undertake these ideas. The plan was for Cederhielm to also be present at the meeting in June 1739, but he was unable to attend.

The meeting was so well prepared that, to some extent, it appears to be a confirmatory formality, although there were discussions about the name of the planned society. A proposal for its statutes had already been drafted and, after some amendments, they were adopted as the statutes of the Academy of Sciences.

The following presentation describes what evolved from this decision, and how coming generations have dealt with its consequences.

Institutionalist perspectives

Describing the history of the Academy of Sciences is a challenging task. Some previous attempts have covered the chronological span until their time of writing, resulting in the depiction being somewhat of a summary. General works of this nature often arise in association with some type of jubilee.²

Other attempts are instead characterised by the rich detail of their accounts but are confined to a specific era. One example is the historian Bengt Hildebrand's account of the prehistory, founding and early years of the Academy, which was written for its bicentenary in 1939. Another is the account written by historian of ideas and science Sten Lindroth, which was published in 1967, and covers the period from the Academy's founding in 1739 to 1818, when Jöns Jacob Berzelius was appointed secretary. Their depictions have much in common. For example, both encompass multitudes of actors and factual information that make them very comprehensive – Lindroth amassed 1,500 pages over three large volumes – and thus also somewhat difficult to digest. It is as if the authors' ambition and calling was to present *everything* that could be linked to the primary object of study, as if they had chosen not to adopt a perspective that would have made it possible – or necessary, if one wishes to take that view – to deselect and focus. But it is also clear that, beyond the multitudes, they are labouring with varying perspectives. Hildebrand marks himself as a historian of ideas in that he searches for ideational inspiration and antecedents, leading him to start the narrative with Plato's academy. Lindroth works with a wider cultural-historical perspective, preferring to relate actors and events to cultural, political and other circumstances in the Swedish society of the time. If these approaches are viewed from some distance, they can be perceived in terms of two working modes or explanatory models. In the development of an explanatory context it is possible to focus on ideational influences from a diachronic perspective, but one can also start from more material factors in a synchronic perspective.³ The approaches do not need to be mutually exclusive.

A third, broader category comprises the studies that have a more thematic perspective and are thus limited to a specific aspect or area of all the activities that can be linked to the Academy of Sciences. One example is the most recent major contribution to the Academy's history, *Science in Sweden*. This anthology, edited by historian of science Tore Frängsmyr for the 250th anniversary in 1989, encompasses a string of studies which, from differing perspectives, explore themes and events over a quarter of a millennium. At the same time, English versions were published of the history of some of the Academy's institutions, including that of the Kristineberg Zoological Station, written by Carl Gustaf Bernhard. He later wrote an autobiography that describes, thoroughly and from the inside, the transformational years in

which he was first president and then secretary, 1971–1981.⁴ There are more biographical accounts of interest in this context. There are also many studies of themes associated with the Academy of Sciences, for example the administration of the Nobel Prize, and of influential actors such as Linnaeus and Berzelius or, more recently, Svante Arrhenius and The Svedberg. The relevant literature is unevenly distributed. At the same time, it is practically impossible to gain an overview, a circumstance that raises the question of how to delimit and grasp the Academy of Sciences as an object of historical study.

Overall, it can be said that these differing depictions bring to the fore basic problems of balance in the writing of history, such as the tensions between breadth and depth, chronology and theme, diachronic and synchronic approaches.

OUR ATTEMPT to solve this equation uses a particular perspective on the history we will narrate. We have found inspiration in the tradition within humanistic-social science research that is called institutionalism or new institutionalism, using it as our point of departure.⁵ One common element in this multifaceted theoretical tradition is the claim that institutions matter. They subsume human behaviours and activities into specific patterns, so conditioning the outcomes of superindividual processes. At the same time, these greater processes form the institutions that the actors maintain through their activities. The institutions are reproduced through people's actions, which are influenced by their ideas and convictions, which are affected by the institutional order of which the people are part.⁶ This order is a result of previous actions and precedes the individual's entry to the stage. Its institutions are bridges between societal structures and individual actors, they are remnants from the past with an influence on the future through the elusive now. They may be informal, such as a code of conduct or a socially accepted norm, or formal, such as a law or an organisation.

We will view the Academy of Sciences as an institution in accordance with this interpretive framework. Our idea is that this brings focus, making it easier to deal with a long period of time, but does not impede thematic depth and analysis. Even if the history of the Academy could be said to belong to its members, or perhaps its secretaries, this perspective requires us to focus more on institutional circumstances than on individual actors. To be more specific, we divide the overall perspective into two strands.

One strand in the institutionalist tradition has laboured with the notion of path-dependent development.⁷ Path dependence means the tendency of successors to follow previously beaten tracks, thus recreating and fixing the path once taken. An institution that has accrued its own momentum, so to speak, may in the past have appeared to be a solution to a problem at a

formative moment, i.e. at a turbulent stage when the future appeared uncertain and bold actors were able to chart a new course. As we will see, an academy of sciences is an example of an institution that is slow to change and strongly inclined to reproduce itself and the established order.

Another strand has developed the notion of institutional isomorphism.⁸ This concept refers to the tendency among organisations active within a specific organisational field, such as the international field of academies of science, to mimic each other and become increasingly similar. As part of a larger system, there is a tendency to take over institutional forms from established neighbours in the field, a pressure on the institution to incorporate organisational elements that contribute to creating legitimacy and maintaining credibility in the eyes of adjacent actors on which it is dependent. Legislation and other forces can also promote similarities of form. One example of the impact of this pressure towards isomorphism is the academies and similar institutions that were founded in western Europe in the mid-18th century, all of which display a striking degree of organisational similarity.

The two perspectives illuminate an institution in different ways. If the differences are emphasised, tensions appear, for example between continuity and discontinuity. Path dependence explains stability through repetition, which can make the institution appear as a form that reproduces itself – trapped in continual replays. Isomorphism explains change, through imitation and adaptation, which can make the institution appear to be a reflection or function of external circumstances – a reed quivering in the gusting winds of change and fashion. Our idea is to explore the opportunities for adding something interesting, latching onto the tensions at the intersection of these two strands of institutionalism.

In other words: within the overarching framework provided by the concepts of *circulation of knowledge* and *knowledge organisation*, we work with institutionalist perspectives that are associated with images of *path dependence* and *formative processes*, as well as tendencies to *isomorphism* in relation to other actors on an *organisational field*. The idea is, quite simply, that what the Academy of Sciences is and does at a particular point in time – say 1780, 1880 or 1980 – is largely determined by the inherited institutional framework and by adaptations to contemporaneous perceptions of the way an academy should be, what it should do and in what forms. The institution works at the intersection of diachronic and synchronic forces of influence.

Using this conceptual framework to bring perspective, the first two chapters below deal with the institutional framework of the Academy of Sciences in two fairly narrowly focused longitudinal surveys, both covering the history from 1739 onwards. The first explores the development of the formal framework, in terms of mission and organisation. The second investigates a more material framework, in terms of members, property and

finances. The subsequent chapters then depict activities within these frameworks, the content of the institutional forms in relation to external circumstances that have changed over time. They work with a broader perspective than the first two. Their presentation is basically chronological, but also includes more detailed discussion of specific themes. The final chapter closes with a summary, bringing together the various threads and offering a discussion in terms of the different organisational fields in which the Academy has worked and gained influence.