PhotoEssay: Making Things Invisible

By Staffan Bergwik, Center for Gender Research, Uppsala University

Back in 1960, Ebba Hult (1882-1969) reminisced about working with her husband, Swedish geology professor Gerard De Geer (1858-1943). On sunny Sundays they made excursions to geologically interesting sites on the outskirts of Stockholm. Hult brought paper and pencil, and De Geer dictated a couple of pages while they enjoyed a cup of coffee in a park.(1)

Image 1: Gerard De Geer dictating to Hult.

Hult's work rarely appeared under her own name – it was incorporated into De Geer's books and scientific papers. Several pictures of the couple exist in Ebba Hult's archive at the Royal Academy of Sciences in Stockholm. I do not know the origin and purpose of these pictures, but they stage the couple's collaboration in interesting ways. The images indicate a certain texture of knowledge, order and authority, illustrating the nature of the partnership and Hult's work as an assistant, but also, partly, her role as a researcher in her own right. Furthermore, the visual representations display processes of making things invisible. Speaking about invisibility when discussing pictures might appear contradictory, nonetheless, the photos reveal Hult's geological research and how it was hidden.(2)

Gerard De Geer and Ebba Hult met in 1907 when she took his class – they married the following year. For the next 35 years she worked as his assistant.(3) During the early 20th century, De Geer, born into an aristocratic family, had a salient and highly visible position in Swedish society. His father, Louis, and older brother both served as prime ministers, while De Geer served as a member of parliament between 1900 and 1905.(4) His scientific career began with the Swedish Geological Survey, where he worked from 1878 to 1897. Subsequently, he accepted a professorship at the Geology Department at the University College in Stockholm (*Stockholms högskola*), where he worked until his retirement in 1924. Between 1902 and 1924 he also served as the vice chancellor of the college. He was both an influential geological researcher and a spokesman for geology.

Image 2: De Geer at his desk.

The picture of De Geer at his desk with a map of Sweden in the background (image 2) elucidates an important link between geology and the nation. He was part of a generation of researchers that mapped the geological history of Sweden. His field of quaternary geology and, more specifically, geochronology led him to study late quaternary deposits and landforms. Above all, his research on layers of clay, called “clay varves,” proved most influential. Since varves – laminated sediments deposited in glacial lakes at the margin of the retreating Scandinavian ice sheet during the end of the last ice age – closely resembled tree-rings, De Geer argued that they were annual deposits. Using varves as a vehicle to determine the passage of time since the melting of the inland ice, he formulated a geological dating method with the year as a unit. The resulting varve chronology, called the Swedish time scale, became influential.

A powerful figure in contemporary academic settings, De Geer was also visible in a more literal sense. He received several prizes and medals, and was elected a member of geological societies around the world. In 1930 he was selected as a foreign member of the Royal Society, only the fifteenth Swede in 250 years. At the turn of the century, an interest in the ice age dominated geology and geology itself became a public science, formative for Sweden’s self image. Furthermore, the eleventh International Geological Congress was held in Sweden in 1910, presided over by De Geer. In his inaugural speech in front of 700 attendees, De Geer announced his dating method under the title "Geochronology of the last 12,000 years.”(5) Sweden’s mass media reported on geological studies and events like this, strengthening notions of Sweden as the land of the ice age, and reinforcing a northern identity.

In a newspaper article from 1928, the leading daily paper in Stockholm stated that every Swedish school child had heard of Gerard De Geer and his clay varves. But, the newspaper asked rhetorically: “how many know something about the great professor’s able assistant, the most loyal guardian of his work – in short about his wife.”(6) Ebba Hult held no academic degree, but she proved a crucial help in collecting data on clay varves during excursions. She also assisted in synthesizing observations and provided secretarial assistance. Between 1910 and 1930, the couple mapped annual deposits of clay as empirical groundwork of the geochronological dating method and the Swedish time scale. They went on excursions around Sweden and Scandinavia, but also to the Swiss Alps and the U.S.(7)

Image 3: De Geer and Hult in their home

Among the pictures found in Hult's archive, some clearly frame their collaboration within private settings (image 3). Indeed, home was of great importance and also provided a place for geological research, especially after 1924. At that time De Geer retired from his professorship and created a geochronological institute located in the family apartment in Stockholm. Their home became a place for living and an international center for geochronology. Hult and De Geer worked together at the institute and received visitors and also data from field workers in Europe, the Americas, Asia, and Africa. The institute interwove domestic and scientific life, and its semi-private character enabled Hult to do geological work despite being a woman without formal scientific credentials.

Marriage propelled Hult into scientific work, though she labored in the background while De Geer received official acknowledgements. Her work in drawing clay varves, gathering data in the field, and taking notes was invisible to a great extent. Of course, assistants collecting large quantities of data in the field for their geology professors was business as usual at the time. De Geer used several assistants, primarily his students, and there was an uneven distribution of influence. However, the working order between him and his wife was also structured by contemporary gendered norms about family life. Early 20th-century society, especially the bourgeois context in which Hult and De Geer lived, was founded on a sharing of labor, with the wife in the domestic domain and the man in the public.

Image 4: De Geer and Hult before a cross section of a tree trunk.

In a picture portraying the couple in front of a cross section of a trunk, De Geer appears to instruct Hult about tree rings – an elaboration of their dating method (image 4). Even though the picture frames a partnership, it also suggests how the collaboration was structured. De Geer's authority and work subsumed Hult's labor. In fact, both entered the marriage with already articulated ideas about her working in the shadow of her husband. In his marriage proposal, De Geer explicitly asked Hult if she wanted to help him. She replied that she "wanted to help the professor," and spoke of a five-year plan, which entailed an academic degree. Because of De Geers' heavy workload, these plans never materialized.(8)

This distribution of authority and influence repeated itself in other kinds of representations of their work. In an article on Hult, the Swedish newspaper *Svenska Dagbladet* reported that the empirical results obtained by the couple on excursions in the U.S. were to be published by "Professor De Geer" in a "scientific forum" and that "his theories" were confirmed by the empirical findings.(9) De Geer had the position and credibility to represent the scientific results; Hult's work was incorporated into the work of her husband.

Between 1927 and 1929, De Geer's health deteriorated; a cataract made an eye operation necessary. In the meantime, Hult did her own work, e.g. on clay varves in Iceland. On her own, she worked towards maintaining the geochronological method and her husband's research program. In her paper on Icelandic clay varves she emphasized that "Professor De Geer entrusted me with the problem of teleconnecting some clay telegrams from Iceland."(10) Indeed, their partnership – as well as Hult's work – was defined by De Geer's research orientation.

In the 1930s, De Geer's research opportunities diminished because of his age (he was now in his seventies). After his death in 1943, Hult continued their joint work. As suggested by image 5, Hult now became a researcher in her own right, building on articles she published in the 1920s and 1930s, in, for example, the *Scottish Geographical Magazine* and the annals of the Swedish geological association.(11)

Image 5: Hult as independent researcher?

In 1933 the Science Association in Stockholm elected Hult as its first woman member. This event received some attention in the Swedish newspapers, which described the election as recognition of Hult's work as her husband's "untiring assistant" and also of her own "published scientific findings."(12) Collaboration with her husband had generated enough scientific merit to give her access to an important part of the scientific infrastructure of the Swedish capital.

Women in early 20th-century Swedish science were typically marginalized outsiders. Held back by laws, scientific ideals, and academic mores, they occupied a position in the outer circles of the male community of academe.(13) The scientific family provided a resource in the face of these difficulties and obscured the border between private and public. The partnership with De Geer partly gave Hult access to official contexts, such as the science association, from which she would otherwise have been barred. She stated that her position as De Geers's wife enabled her to conduct science in a way that would have been impossible otherwise.(14)

Nonetheless, Hult's work was made invisible through norms about family and scientific collaborations, and she gained limited recognition in the official system of science. After her husband's death in 1943 she tried to pursue her own research, with little success, and throughout her life in academic science her research was placed squarely in the tradition created by him. Women like Hult had gendered trajectories through academic institutions. Her position entailed tensions and was not static. On the one hand the family partnership advanced her work, making her temporarily part of geology. On the other, through the gendered structures of science, she remained an outsider, and her work was included in that of her husband.

The photos of the De Geer-Hult partnership display some of these issues through the way they are framed. They do not literally obscure Hult's work. She is present, but the images reproduce the hierarchies and cultural schemes involved in the partnership. Other representations of their work added to Hult's ambiguous status. Reporting on her entry into the Science Association in 1933, one of the Swedish newspapers claimed that "The wife of the professor is herself a 'Professor.'" The quotation marks indicated the difference between Hult and a regular professor. In a congratulatory remark the newspaper also claimed that she was a type of "professor's wife who in an ideal way combines the virtues of being a house wife and a

scientist."(15) Being both meant working in a gendered order whose processes simultaneously emphasized and obscured Hult's work and blurred her scientific status.

Notes

1. "Gerard och våren" [Gerard and the spring], unpublished manuscript by Ebba Hult, December 6, 1960. The manuscript is found in Ebba Hult's archive at the Center for History of Science at the Royal Academy of Science in Stockholm. This research is part of a larger project titled "On the outskirts of science: Women as outsiders within early twentieth-century science," which is funded through a grant from the Swedish Research Council. The images are reproduced with the permission and courtesy of Anne Miche de Malleray, archivist at the Center for History of Science, Royal Academy of Sciences in Stockholm.
2. The topic of invisibility in the history of science has been addressed in influential books on women in the history of science. See Margaret Rossiter, *Women Scientists in America. Before Affirmative Action, 1940-1972*. Baltimore: Johns Hopkins University Press, 1995; Londa Schiebinger, *The Mind has No Sex? Women in the Origins of Modern Science*. Cambridge, Mass.: Harvard University Press, 1989. In this essay I draw heavily on Steven Shapin's work on invisible technicians. Steven Shapin, *A Social History of Truth: Science and Civility in Seventeenth-century England*. Chicago: Chicago University Press, 1994.
3. *Stockholmstidningen*, March 3, 1933. The newspaper articles referred to here are collected in Ebba Hult's archive.
4. Christer Nordlund, *Det upphöjda landet: Vetenskapen, landhöjningsfrågan och kartläggningen av Sveriges förflutna, 1860-1930*. Umeå: Umeå University, 2001, pp. 72 och 99-105.
5. *Ibid*., pp. 148-155
6. *Stockholmstidningen*, March 16, 1928
7. Nordlund, pp. 72 och 99-105. See also *Stockholmstidningen* March 3, 1933 and *Svenska Dagbladet* March 3, 1933.
8. Draft to an autobiography by Ebba Hult. The draft is found in her archive, vol. F:3.
9. *Svenska Dagbladet* March 3, 1933; *Stockholmstidningen* May 16, 1928
10. Ebba Hult, "Late Glacial Clay Varves in Iceland," in *Geografiska Annaler* (1928), vol. 10, p. 297.
11. Ebba Hult, "Prehistoric Bulwark in Gotland Biochronologically Dated," in *Geografiska Annaler*, (1935) vol. 17, pp. 501-532; Ebba Hult, "Jahresringe und Jahrestemperatur," in *Geografiska Annaler*, (1936) vol. 18, pp. 277-297.
12. *Stockholmstidningen*, March 3, 1933.
13. Hanna Marklund, *Som isolerade öar: de lagerkransade kvinnorna och akademin under 1900-talets första hälft*. Eslöv: Symposion, 2003.
14. *Svenska Dagbladet*, March 3, 1933; *Stockholmstidningen* May 16, 1928 and March 3, 1933.
15. *Svenska Dagbladet*, March 3, 1933

Archives of *HSS Newsletters*