TECHNOCULTURE

Collaborative couples in science

Episode 47

Full transcript

Guest: Annette Lykknes [Annette]
Host: Federica Bressan [Federica]

[Federica]: Welcome to a new episode of Technoculture. I am Federica Bressan, and today my guest is Annette Lykknes, professor of chemistry education and historian of chemistry at NTNU, the Norwegian University of Science and Technology. Welcome, Annette.

[Annette]: Thank you, Federica.

[Federica]: Today, we talk about collaborative couples in science: that is, men and women who work in science and sometimes are partners or husband and wife or lovers, maybe. So what drew you to consider collaborative couples in science? What was interesting to you about it?

[Annette]: As historians, we always want to go beyond the popular anecdotal story. To understand or to study couples is a way to understand the dynamics between partners who work together, and there is this particular dynamics, we believe, when people that work together are also married or lovers.

[Federica]: Are there many collaborative couples? We find them a lot in history, or not so much, or maybe we don't know about them yet?

[Annette]: I think the more we dig, the more couples we find. We know already a lot, or we have many examples. People have been studying couples since the '90s, and we always find new couples from different centuries, and also when I studied local history here at NTNU, I found many couples. So I think if we look for them, they are there.

[Federica]: Is it... I start from like a bias, a cliché, a question, probably, but is it true that most of the times you find out about a couple because the man was already famous, we didn't know that his wife helped him, for example? Is this how the story goes most of the times?

[Annette]: This is maybe how some people started researching couples, because they wanted to also look into the wife's story and maybe make her more visible, but as we dig into these stories, we see that, of course, this is not the whole picture. It's not always like that. There are many cases where women have been less credited than their male husbands in collaborative work, but it's not always like that. In the volume that I co-edited with Brigitte Van Tiggelen in 2012, for example, there was one chapter about Jane Marcet, who was a 19th-century textbook author. She authored a textbook, actually more than one textbook, but there was one that was particularly popular in chemistry. And in this chapter, those who studied it, our historian colleagues, they found that actually, this time it was the husband that was behind the scenes. But first, the book was published anonymously, but after some additions her name appeared, but when they studied the notebooks of the husband, Alexander Marcet. They saw that he had been very much involved in the work, so this is an example of the contrary. And of course, there are examples of couples where they have helped each other to be visible, and there are different shares of credit and division of work between couples. So our point was to actually always look at the context and look at every case differently and not put up these general trends.

[Federica]: Yes. I would like to ask you what period of time you have considered, and if you found a pattern in the collaboration of these couples, or each couple is unique, so to speak?

[Annette]: I would say each couple is unique, but there will always be some general features that you will recognize from other cases, that's for sure. I have been investigating with my colleague Brigitte Van Tiggelen a German couple in the 20th century, Ida Noddack and Walter Noddack. She was actually a PhD chemist, chemical engineer, who entered industry, chemical industry. He was a university-trained PhD chemist. At one point they met and decided to take up a joint work on looking for new elements, new chemical elements, because at that time, there was the periodic table of chemical elements which we use today that is a overview and a system of all the chemical elements we know – it had gaps, so there was a race actually to find the ones that still had not been discovered. This was the first joint project of this couple, and they both invested a lot of time, but Ida, the woman, she decided actually to invest so much that she left her job in industry to do this full time, and the beginning was actually to do this literature review. It was necessary to even start to look for these new elements. So for nine months, full time, she went to the library in Berlin to read literature, what other people had researched about elements near these, the ones that they were looking for, and also what other people had tried, all the chemistry that was known at the time, so they should be prepared for the practical work. So it looks from the beginning and from the outside that, okay, she

left her job, she became dependent on his positions because it continued like that. As he had new jobs, she moved with him to different places in Germany. They were in Berlin at first. They went to Freiburg, to Strasbourg, and to Bamberg, and every time, she came with him and she collaborated. She was part of his team, so to speak, at university. But when we go into the details of how this collaboration worked, we can see that it's not as simple as that. It's not like she left everything that she had, but she actually also got a lot out of it, and also it's interesting to see how they shared the work and what kind of contracts, so to speak, they established between them.

[Federica]: They both... I see that they both were born in the 1890s and they died, Walter in 1960, and Ida in 1978, so they were a generation and a half, say, after Marie Curie, for example, that is more known – maybe more people know about her story. And not focusing on her relationship with her husband now, but just as a woman in science, back then we know the struggles that she faced sometimes. Nonetheless, she successfully engaged with science. Do you think that at the time, being married to – first of all, being married, and number two, being married to also a scientist, validated a woman as a scientist? Ida was happily doing her work in science, or do you think that she also struggled and was not always taken seriously, or she needed to rely on her husband to have access to certain universities, libraries, or so? You know, how was it perceived then?

[Annette]: Well, she went to the Technische Hochschule, so the engineering study. She was among very few women, so this was just the beginning when they were opening for women, but it had opened so the opportunity was there. She had only for a very few years work in industry. We don't know about her ambitions to university research, but actually at that time in Germany, being married was not a benefit, even if you were married to a scientist, because as a married woman, you had to step back, and they didn't allow double income at the time, so when she married, because they started collaborating before they were married even, and then she left voluntarily, but she could not have the chance to go back to paid work in the – at least in the 1920s and '30s in Germany. But then, so that, you can see it from that perspective that, okay, by doing so, she lost some opportunity, but on the other hand she had other opportunities when she got married to Walter. He had a university position. He had a laboratory. He had collaborators. So through him, she got access to all of this. She was also accepted as an unpaid guest researcher, so she had the formal possibility to come every day to work with the group, access to, of course, all the literature that was there and also to publish together with these people. In the case of Marie Curie, it was a little bit early, but, as you know, she left her native country, Poland, to have the opportunity for education, so already at that point, it was different. But she too could work, but she had... It was only after his death that she got a professorship at university.

[Federica]: And not easily, by the way. You said that in Germany, when Ida Noddack went

to university to the technical Hochschule that they were just opening up. Do you mean that before, it was just not done that women attended those classes, or there was a rule that they were not admitted?

[Annette]: Yes, I mean, I did some comparative history on this, how when women was admitted in different countries, and I believe it was around 1909 that at least all states in Germany had opened to admit women. Before that, they could be auditors for a period, but not to formally have the degree.

[Federica]: Wow. So how was the workload divided between the Noddacks? For example, what did you find there?

[Annette]: So first, we looked at the publications, many publications they did together and also saw each of them with others or individually, and then you get one image. You can see that he had more publications than her, and you can have an idea about what they did together and what they did individually, but then we also have the laboratory notebooks, and this adds to this nuance. Then we can recognize the handwritings of Walter and of Ida, and we can see that it's not as simple. We can see that they are working very much together, and we can also see that there are some areas taken up, or there is a special area for each of them. For Ida, for example, it was the spectroscopy that they needed to do to identify these unknown elements, but we also see that things change over time. So what was started as something they did very much together, the work on new elements, and also an area we labelled as geochemistry, it was gradually taken over by Ida. So it's very interesting when you go into these details that it's not always what it looks like in the beginning, although in their case it seems that it's not that she was refused credit or anything like that. They were a couple who supported each other. And actually, to describe their case, we used the term 'work unit' or Arbeitgemeinschaft, as they use themselves, that they were always considering themselves as a work unit, and whatever they did was to protect that unit, and the honour or the credit of the unit, not the individual people in it. So we see, for example, that sometimes when there were daring hypotheses to be presented, it was beneficial to the work unit that Ida presented these results because she didn't have anything to lose in terms of formal positions, and in other cases, it was also when they were, for example, presenting in a conference, they were presenting both of them, and when we looked, go to the manuscripts, we see that this is actually something Ida did, but that was helping each other, so it didn't matter who did the work first or... But they were doing what they thought was best for them at the moment. When he was fully loaded with his teaching or things related to his position, he could have help from her in that respect, and yeah, and she could also present more varying hypotheses, as I've said.

[Federica]: Would you be interested in looking into some couples that work today, or because science has become more institutionalised, more than it used to be, so it's a little bit more

impersonal, and women have easier access to careers in science, so this work unit would have a different function within the ecosystem, or, you know, would you be interested in looking into collaborative couples in science today?

[Annette]: Yes, definitely. Ever since we started this, I've been looking for couples when it comes into the context that I'm studying. And in Norway, for example, we have the Moser couple, who were awarded the Nobel Prize together in medicine. So I have been thinking many times that, yes, it's really interesting to go also into couples that are alive or more recent couples to look how, now that we have all this knowledge about historic couples, if we can find some changes, some new aspects to the story that we can see from the present point of view and maybe cases where women also have the full position and where they enter their relationship and the collaboration on a different term than they did in the past.

[Federica]: I know that you and Brigitte, in that volume and in your current work, consider a couple in a broad sense, so could you give some example, giving names or without giving names, of couples that are not the traditional husband and wife work unit?

[Annette]: Yes. At least we have one example of a homosexual or same-sex couple that were living together but at that point, of course, were not able to get married formally, but apart from that, most of the couples are married because it's from a historic period when that was the norm.

[Federica]: Are there cases where the couple explodes, there is a divorce, or even without a divorce? You know, working together is not easy. There are ups and downs, and when you work together and you get along and you love each other, probably that boosts your capacity to be productive, and then when you have a fight, it's not so easy? Was there enough material in the archives that you studied to see how their interaction unfolded across a number of years?

[Annette]: Yes. There is an example there about a couple that got divorced. It's Astrid Cleve and Hans von Euler-Chelpin. So this actually, they called the chapter 'Married for Science, Divorced for Love,' because it's... It was, in that case they call it a strategy from Astrid, from the wife's side, to enter science through marriage – which was not uncommon at all at the time – and when they had a fruitful collaboration and many publications together until the point there was tension, until he found also another woman that he married and continued to work with, but for Astrid the divorced wife, it was the end of her scientific career because she was dependent on his projects. She was preparing experiments and giving input to his projects, and when there was no such connection any longer and she also did not have the institutional affiliation, that was also the early 20th century, when it was not so common. She was actually the daughter of a chemistry professor too, which also helped her in the beginning, but when she divorced from Hans, it was very difficult for her to establish anything in science. She was

trying by doing dissemination work, translations. She was respected to a certain extent in geochemical circles, but in the end, she gave up on science.

[Federica]: Is it fair to say that Marie Curie, Pierre Curie, are the only couple where the wife, the woman, is the most known, most famous between the two? Because I just cannot think of any other, right off the top of my head.

[Annette]: I cannot think of any other example right now either, but of course, it's an exceptional case, since he died very early, and this was her opportunity. It's difficult to imagine that she could have such a status or so many opportunities if he was still alive when they were continuing this work. So it's a very special case, but of course there are many couples we have read about, who have received equal credit. The Noddacks is one example. They also got Nobel nominations several times. There are also other successful Nobel couples, among them the daughter of Marie and Pierre Curie and her husband, that the wife is more famous. That's rare.

[Federica]: In literature, sometimes women, like the Brontë sisters, started publishing with a pseudonym, with a man's name. Has that ever happened in science that you know of, that, you know, we see an article or an essay signed by a male, and it was actually authored by a woman?

[Annette]: Yes. I have heard about that, yes. I wonder if that was not the case with Jane Marcet. I am not sure, but I have read of cases like that, yes. They had to do that, or they wanted to do that to be on the safe side, to submit it under a male pseudonym.

[Federica]:To wrap this up, I would like to ask you, in all your work that started many years ago now on collaborative couples, what was the finding that you expected the least or that warmed up your heart, that you said, 'Look, I never had expected this. This is really not something that the wide public would imagine what's going on behind the scenes'?

[Annette]: I was a bit surprised to read about the, Jane Marcet and her husband Alexander where he was the one who had, he is less known. I mean, he's known for many things but not for this, this book that she's famous for. That surprised me a lot, but what warmed me is to see cases where these couples really support each other, and there are many cases like that. You know, with the Noddacks it was such a special relationship that when she, when Ida was receiving medical treatment and he was trying to reach her and didn't succeed, he thought she had died, and then the story goes that he died because he thought she had died. So it was a little bit like a Romeo and Juliet story, and we can see that also in there, when they talk about their work it's always 'we'. It's always mein Mann und ich, 'We did this,' and he was also... When she was in some controversy over, for example, nuclear fission, she was in a discussion with Lise Meitner, Otto Hahn, who were the one who discovered this, but she, Ida Noddack, had come up with a suggestion a few years before and had been ridiculed then. Her

husband Walter, he was approaching editors and other people and said, 'You should cite Ida on this, that what she has done is relevant to this discussion.' So these kind of things. It's good to see that in past times we have these examples. And like Pierre Curie, when he got the nomination for the first Nobel Prize, they got together, that he wouldn't accept the nomination if she was not also included.

[Federica]: That is definitely a positive message to bring this conversation home. I would like to thank you very much for your time today. Thank you for being there and thank you again to Brigitte for putting us in touch. I encourage the audience to go and listen to Brigitte's interviews on this podcast on Marie Curie and on the rhetoric of science. If there is anything else you would like to say to conclude, you have some time left.

[Annette]: It's been a pleasure to be here, and this is something I have been doing with Brigitte for many years, so I would also like to acknowledge that collaboration.

[Federica]: Thank you very much. All the links, names, and details will be in the description of this video and on the podcast website. Thank you very much.

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