

## Awareness Raising through Exposure, Inspiration, and Positive Emotion: The Artwork of Svenja Meyer

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For those of us who study soil organisms and teach about the importance of soil biota and its many ecosystem functions, we often have the privilege of understanding these organisms at a deeper level than the average person through our work. For those who work on the frontiers of education and science communication, we seek ways of helping explain and raise awareness of these often minute and hidden creatures right below our feet. One of the most prolific artists in soil organism art and design is Dr. Svenja Meyer, a colleague in the lab of Stefan Scheu at the University of Göttingen, Germany. During university studies, Meyer became familiar with the researchers in the Scheu lab and found the work and organisms so fascinating that she chose to pursue her graduate studies with Scheu and colleague Mark Maraun. Her research elucidates the responses of microarthropods, specifically Collembola and oribatid mites, to drought stress in conventional and organic agroecosystems through examination of stable isotopes to determine changes in trophic niche (Meyer et al., 2021, 2022; Meyer, 2022). From here, Meyer's interest in soil fauna became a main focus of her artistic practice.

Meyer's artistic work spans the realm of soil-dwelling animals and microorganisms to insects and chameleons. Her art is inspired by what she observes under the microscope and she brings these to researchers and the public in a variety of different media – initially organismal silhouettes, now lino cuts, etchings, ink and watercolor. These have become decorative and functional items, such as stickers, t-shirts, and mugs, which she sells in her online store, SM Artwork, <https://smartwork.bigcartel.com/>. To get some insight into her inspirations and creative process, Meyer spoke with Monica Farfan, Communications Editor for Soil Organisms, over a video call at her home in Göttingen, Germany where she creates her artistic and design works.

**Monica Farfan:** So, what is the history of your artistic practice? Have you always been someone who draws or paints? Was this something that you developed early in life, later in life, and at what point did you decide to apply this to what you were seeing in science?

**Svenja Meyer:** I enjoyed drawing all my life, I guess. But when I started to study biology, I just didn't do it so much anymore. I was excited about all the other new

things I learned, and it was just not so present in my mind. But I always enjoyed when we had to draw something in a course. You know, we often had to do that in Zoology and Botany. Many people curse it, but I always loved this super accurate way of drawing. The turning point for my artistic journey was the Covid pandemic. Suddenly, I had so much time on my hands, and I started drawing again. Also, right before the first lockdown, I went on a marine field excursion to Ferroll at the Spanish

Atlantic coast. I came back home thinking of all the animals I saw there, and I just had to draw them. And then, well, there was the lockdown, and all this extra time, and I drew more and more. I drew this first design then that is so popular now, this circle of soil animal silhouettes. It was by coincidence, just for the fun sketching all these animals and then I thought, oh, what if I make the collection complete - almost all groups of soil animals in one circle - that's a nice idea. It was the time where social interactions within our working group were not allowed, and we were all starting to get a little depressed. I thought it would be nice to create something that many people in the (lab) group would enjoy. Next, I thought, why not print the design on t-shirts for everyone? The first prints I did myself, via screenprint. YouTube taught me how to screenprint - how to make screens myself and all about the printing process. That was very exciting and great to get paint on my hands again. I offered for people to bring me their own blank shirts on which I printed the soil animal circle. It was a way to share this passion about the animals and feel connected again. It went step-by-step from there. Actually, Anton (Potapov) came up with the idea - why not use these small icons from the design to illustrate scientific graphs? I added some more drawings to have all major players of the system. I think these icons filled a gap, at least in our (lab) group. Soil ecologists didn't have too many nice illustrations for their scientific graphs. They would find silhouettes from different sources, if any existed, so many colleagues were grateful to have these icons at hand. That made me happy and motivated me, of course.

**MF:** So, you have a huge fan base in soil ecologists. And many of these people know you for these objects that you create with your work - your mugs and t-shirts that you were just mentioning - prints and even some original artwork. How do you choose your subjects? Do you have a sketchbook where you kind of make plans for your oribatid (mite) mug, for instance, and thinking about all those different morphologies of oribatids and where does your inspiration come from to begin on a project?

**SM:** I think this is a super interesting question. My personal inspiration usually comes from exposure. When I spend time with certain animals, I often get very excited about them. I think, wow, these colors are so pretty or, it has such fancy armour. I think everybody knows this experience, right? So usually, it is the aesthetics that draw me in first. When it's a whole group of animals, my mind always tries to sort them. I love to look for patterns, make lists with assemblies of species that are sorted in some way - not only in the traditional way of phylogenetics but also visual aspects, you know? Like, sorting them

by color - that is kind of easy, but you can do that with more animals than you think and end up with a new perspective about the group. Or sorting by shape, emphasizing the different shapes that are present in a taxon. Or the very subtle color variations in earthworms (Fig. 1). I was blown away as soon as I looked closer! Usually, inspiration just happens. During the last years I was exposed to a lot of soil animals (and soil animal lovers), so this was the root of the inspiration of most of my current artistic output.

And, yes, of course I have a sketchbook. Full of ideas and there is so little time to realize them all. That is the hard job - to sort and to also give up on ideas or put them in the back of my mind. Just like ideas for research projects. It is easy to get excited about a new thought, but then you have to filter.



**Figure 1.** Meyer aims to reveal details of the organisms in her work, such as the fine color variations in Earthworms Photo credit: Johannes Michel Lux.

**MF:** In the same thread, in terms of showing soil animals and thinking about science communication, your design work is used by many researchers and educators - they wear your T-shirts when they're doing presentations or outreach. Would you speak a little bit to what roles you think science communication plays in the artwork you develop? Does this play into your design choices, for instance, what you choose to put certain designs on, whether it will be a sticker or a T-shirt? And if you think about the science communicators in soil ecology when you are also designing?

**SM:** I'm very happy to hear that my work is used that way. It is a big motivator for me to hear that it's used for outreach. But to be honest, when I'm creating things, I mostly have a group of fellow nerds in mind. They're a

grateful audience because they already are super excited about their animals, and they're just pleased to see them displayed in any possible way. I think that if the target audience would be the public, some things wouldn't work that well. When I try to emphasize the aesthetics of an animal, that may appeal to a narrower audience. It sometimes is a little hard to judge from the inside of the bubble what the outside of the bubble finds beautiful.

**MF:** So, when you mean inside versus outside the bubble, you're speaking of the soil ecology nerds versus the public? Is that kind of how you would describe this?

**SM:** There are different levels of nerdiness, I think. Inside the bubble, there are soil animal nerds and then outside the bubble there is a variety of people. There are other scientists, even other biologists, that don't know so much about soil animals and who you would encounter at a big conference or project meeting. And then there's the public. When I think about my parents for example, about what they see in these animals that I paint, it becomes very clear that we live in two different worlds and have a different mindset about little critters. It's SO different with soil animals, there's always this additional barrier of smallness. They are not visible in people's everyday life even if they are aware of the fact, that there are some cool animals beneath their feet. It's a challenge to make people see our animals. And I think a promising way to make people see and care more about soil animals, is to enlarge them in an illustration or in a nice photograph and just rub it into people's faces on every opportunity we get (chuckle). For many people, everything smaller than a butterfly is too small to notice. I mean, I cannot relate, but this is my experience. I am drawn to the small things, but I think most people are not. Not at all.

**MF:** So, in terms of raising awareness and showing how amazing some of these very tiny soil organisms that people probably won't see with their naked eye, do you see revealing charismatic aspects of these soil animals as a main motivator?

**SM:** I think it's super important when you think about outreach to emphasize the aesthetics of the animals we work with. Beauty can create positive emotions, and this is a powerful way to make people care about soil organisms and this is what we want, right? We want them to see things they haven't seen before, be positively surprised and then to remember what they've seen and felt. And then the smallness, might not be such a big barrier anymore.

**MF:** How often would you say you are practicing your art? Do you work it into your schedule, like, you have certain hours where you sit down and say, for the next four hours I am only painting *Collembola*. Because many scientists who are also artistically creative see their scientific work as taking precedence, which is great, but they sometimes see their artistic practice as secondary to what they "should" be doing. How do you fit this into your life as a practice, and as a job? Because it's also, now, making you some money.

**SM:** It's becoming more and more my actual job. So, maybe my situation now is a little bit different from that of a typical scientist. I am working in the Göttingen lab part-time, so I have some time on my hands, which I use now for a mix of paid commissions and my own artistic work. So, I have a bit of freedom to realize my own ideas, which is really a gift (Fig. 2). I think many people can relate, not only in arts but that it's such a wonderful thing if you are able to realize your own ideas. My work life is very dynamic now with lots of small jobs, but I cannot tell how it will be the next year. When I think of the time when I was a full-time scientist, then I would only draw in my free time. I see your point that many scientists think doing artistic work is a secondary thing, but maybe you shouldn't necessarily see it that way. It is a powerful tool when it comes to communicating your own work in, for example, presentations or posters. I think many of us have seen that posters with nice illustrations get a lot of attention. People are drawn to it. I think, it's always a winner if you include some kind of graphics and not only points of data. In working with soil organisms, we have the fortunate situation that we can show off our subjects of interest. We have something to show! There are many sciences that don't really have that, but we do! And we could and should do it more.

**MF:** Are there any "go-to" materials you use, for instance, watercolor, colored pencils etc., and any digital tools that you use (software packages or applications)? And how do you transition from a piece of work to scanning it or photographing it and then making it into a print or deciding on a product, like your new sticker sheets that you have, for instance?

**SM:** I've become more and more comfortable with watercolors, combined with India ink (Fig. 3). I love the feel of the fountain pen on a rough paper and enjoy the bright, but light, quality of watercolors. The choice of materials depends on what I want to show.



**Figure 2.** A. From her office, Meyer works on arthropod paintings from reference texts. B. Meyer's typical art workspace. Photo credit: Johannes Michel Lux.



**Figure 3.** Meyer typically employs watercolor and ink or colored pencil, depending on the level of detail she wants to convey in her designs. Finished designs, such as these, are used for t-shirts, mugs, and prints. Photo credit: Johannes Michel Lux.

When color plays the major role in the initial idea, I go for watercolor; when it should be super detailed, it would be colored pencils. I started, however, with these not-so-colorful silhouettes and, also, black-and-white linocuts. With printmaking, you can emphasize more about shapes and the variety within one taxon, for example. I always loved that people who know their animals very well can tell you species names just by glancing at a shape. They don't need details; simplified shapes are often enough. Linocut is a great method to force yourself to simplify and find this very core shape of an animal.

**MF:** So, after you've completed a work, take us from feeling a piece is finished to digitizing it to then deciding on a design.

**SM:** Well, I bought a good scanner, which I learned is necessary to get the colors right. Then there's a bit of cleaning the background in Photoshop. I'm a bit of a messy artist. If it's going to be a postcard I may add (scientific) names or other text. Using software made for producing printable output is maybe not mandatory, but a big help in streamlining the process. I invested in Affinity Publisher (Serif Europe, Ltd.) and I am glad I did.

**MF:** There are many scientists who use their creative talents to highlight their scientific practices, either do it or aspire to do this. Is there anything you with you knew before going down this road that you would share with the readers? Do you think that design work in the zoology field as a growing alternative career for people with a scientific background to continue with their love of the animals that they work with but also to make a living?

**SM:** I'm still figuring out myself if I can make a living of it. I would say a tip may be not to expect this to be a full-time profession from the start. Just play around a bit in the beginning and do it next to your regular work. I would absolutely recommend starting if you just enjoy creating things. It's healthy, I think. It's a way to digest not only excitement but also stress and to see again the beautiful things in your work. In general, I think that biologists already have great skill for creating illustrations because they are trained to observe very carefully. They are able to interpret what they see in an animal. Every illustration requires selecting the salient details for the viewer and, sometimes, you can see if the person who created it really understands the animal in front of them. I think this is a real problem with AI (artificial intelligence) illustrations; they are

still struggling to create correct illustrations of animals. I am sure this will improve, but arthropods seem to be especially tricky for AI models to grasp correctly. I think there is a lack of illustrators that have a background in biology. I cannot really tell if it is a career recommend. But, as arthropods are more en vogue these days and science communication has become more of a focus, why not? If you are considering this path for your career, I think you just need to take some time to find your style, don't aim to be perfect from the beginning, and don't be shy to use and share your illustrations early on! There is potential for positive feedback; we make more people interested in our beloved little critters and the demand of illustrations increases.

## 5. References

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