

Interview Transcript

Katharina Scheerer: Good morning and thank you so much for being here today Sue. We are very happy that you agreed to this interview as your work, *Semiosis*, plays a very important role in our exhibit, and it's a great opportunity for us to discuss some of our questions with you. For those of our participants today who don't know Sue Burke yet, I'll briefly introduce her before we start the interview. She's an American writer and translator, and began writing professionally as a teenager for her local newspaper. By then she was also an avid science fiction fan and has worked for newspapers and magazines as a reporter, editor and then she began publishing fiction in 1995. Today, we are here to talk about her novel, *Semiosis*, which came out in 2018. Sue, in your novel, a group of idealistic settlers escape a conflict on Earth and then arrive on a distant planet that is called Pax, and they plan to build a new and ideal society on the planet. On the spine of the book, I have it right here, it says, and I quote: "The world they discover is rich with life, but this is not the Eden they were hoping for. The plants on Pax are smart, smart enough to domesticate and even slaughter its many extraordinary animals." Could you briefly introduce us to the smart plants that populate Pax and maybe talk a bit about their intelligence, if you want to call it that way?

Sue Burke: Well, thank you for having me, this is a pleasure. The first plant that the people meet is called Snow Vines, so that's what they call them. And what they discover is that these plants are using animals in a fight amongst themselves. The reason I did this is that all of the plants in the book are based on things that plants do here on Earth, except they don't seem to think. There's debate on that. But plants do use animals to fight against other animals. For example, there's quite a few plants, because ants are very vicious, nasty little things. And they will feed ants, and give them a place to live, then the plants will chase away all the other animals that might want to eat them, other caterpillars or whatever. So the plants protect them. And they also use animals to spread their seeds, which is also what snow vines do. So the settlers realize that that's what's going on. But then they meet another plant, which seems to be the only one of its kind. Eventually they name it Stevland, and it's very intelligent. And it's intelligent in an animal-like way, that it can think ahead, it can make ideas. And because it's a plant that does some things only plants can do. For example, human beings are the same, basically all of us. Our brains are pretty much the same size, and that's all we're going to get. A plant can grow as big as it wants. Some are very, very huge. There's a tree called Pando in Utah that goes acres and acres. It's huge and old, really old. So Stevland can be as smart as it wants. As it grows, it just grows more roots, but what it needs is iron. When I was doing research for this, I discovered that we have a lot of iron on our planet. Plants need iron for photosynthesis, it's a necessary chemical for them. It's possible for planets to form, they have iron in their core, but not on their surface. And that makes it necessary for the plants to find iron somehow. Well there's a lot of iron in my body, my blood is red from that. And on Earth to seek nutrients, there are hundreds of carnivorous plants. Fortunately, they're very small. But they can hunt down animals in a way, and kill them and use their bodies for food. So here we have a very intelligent plant who needs a lot of iron. Animals have that and then there's a problem. So we have Stevland who is very intelligent, who needs iron from people and so he lures them to come and live with him. And that's chapter one and two.

KS: Thank you so much for this very brief introduction into your work. You already mentioned how you took findings from botany and implemented them into your book, and this is also something that we focus on in our exhibition. Especially on the fact how science fiction stories and films take different scientific discourses and our case, obviously, especially in botany, and then convert them into literature, or adapt

them in literature. As you probably know, I mean you've already talked about plants as intelligent beings, there's some very heated discussions that have been going on in the past years between botanists claiming the existence of something like a plant intelligence, or even something that they described as similar to the human nervous system in plants, and those scientists saying the plant intelligence and plant neurobiology is blasphemy. So we have like both sides, the ones that say there's something like this is present in plants and the other side saying that's complete blasphemy. I mean you, as a sci-fi writer, don't have to worry about scientifically proving what you write in your novels, but maybe you could tell us a bit more about what role science plays in *Semiosis*, apart from what you've already described.

SB: I started the book actually because I have a lot of houseplants, and some of my houseplants were fighting with each other. One actually killed the other and I started to do some research and discovered that plants are... They may or may not be intelligent, I can make that up for my book, but what we know about what they actually do on this planet: they're very aware of their environment. They know what's in their soil, they know what the temperature is, they know what time of day it is, they know what day of the year it is... Again, this varies a little bit from plant to plant. Some plants can do things other plants can't do. But in general they know what's going on, and they are aggressive. They have a hard time surviving and they, like us, will do whatever they need to do to survive. But what they can also do is they can see. Maybe not the way you and I can, but that tree there, this palm tree, knows where the sun is coming from, they know when the sun rises and when the sun sets. That's a form of vision. Some plants can count, and we know they can count, because we can watch them. A Venus Flytrap has these little hairs. You have to touch the hairs three times in a certain period of time and that's when they close. So they can count at least to three. We know that some species of bamboo on Earth can count above 100, because they wait over 100 years and then they bloom and they all do it at once, so they're all counting. They can taste, in the sense that they know the chemicals in their soil. They can smell because they know what's in the air. Because we know that sometimes they use that to communicate with each other and also understand what's going on in their environment. They can sense touch. Sensitive plants show that very well. Some of them, we discovered, can actually understand vibrations. There's flowers that, when they hear the vibrations of bees, they will make their nectar sweeter. So they can hear, in a way. They're very, very aware of their environment and they're aggressive. And so botany played a role in that I discovered that plants are really horrible, scary, nasty things, and dangerous, and they can do a lot. And if I just gave them a planet and let them go... Yes, they're very nice too. They feed us and sometimes intentionally, because it's good to give us food, because then we spread their seeds. But they can do a lot, and if I just gave them a planet where they could do what they are fully capable of doing. With a little intelligence, so they can plan ahead. That's the scary part.

KS: Yeah, this also becomes very vivid in your book. Don't want to spoil too much though. You also pointed out this very interesting fact, and I also realized that when I was reading your book, how much the characters sometimes struggle with having to learn that humans aren't the center of this new world, of this planet they want to inhabit. And that, in order to survive, they have to coexist and communicate with entities like the bamboo Stevland that you already mentioned. Entities that are completely different from them. When I was reading your novel, it called to mind especially posthumanist discourses that also emphasize that the anthropocene needs to come to an end and that it is, instead, necessary to develop a so-called response-ability, to speak with Donna Haraway. So the ability to respond to a non-human being and to find sustainable ways of living together on this planet. And usually, when we think of non-human beings, and Donna Haraway does this on her books mostly as well, we think of animals, but not necessarily

of plants. So what motivated you to choose a plant, maybe even especially a bamboo as an intelligent being and make it an essential character for the survival of the humans on Pax?

SB: There's something that's often called plant blindness. That is, we look at plants and we don't really see them. People are barely aware of the trees they pass on the street. But on this planet, if you added up the the bio mass of all of the animals and all the plants, it's 100 times more for plants than animals. They really run this planet and they use us for some things, but if all of the humans were to die, they wouldn't particularly notice. We're not important to them, but they're what keeps the plan going. They're the reason that we can breathe, that we can eat. They run the world. So I wanted to give plants enough agency that they could make it more obvious of what they're doing for us, as well as to us and with us. So, as I say, the plants are very active. Some of them are kind of aggressive, all of them are powerful and capable in their own ways and they communicate with us. They do that on this planet too, but we don't even think about it because of plant blindness. Now if you're growing a tomato plant, and it gets tomatoes and then the tomatoes get red, what happened? Well, the plant wants you to eat the tomato, because the tomato seeds can pass through us, and then they come out. And then they can grow somewhere else, so we can move their tomato seeds for them, and that's very important to them. But when is the right time to do that? It turns red to say this tomato is ready for you to eat. They have communicated with us. A lot of plants do that and we don't really think about that's what it is. But they know, whatever know means, and that's a debate, but plants know that animals are out there and they can use them to do things for them. They can eat them, they can have them fertilize their flowers, they can move around their seeds, they can even plant their seeds. Animals do a lot of things for plants, because plants have found a way to work with us. So, on a planet, we could make it more obvious what we and plants are doing together. That was my goal and I had a lot of fun doing that.

KS: Yes, that's I definitely noticed that by reading the novel. There are just so many ideas developing in it. And one thing that makes it stand out from other novels as well is, at least in our exhibit, is that part of the book is written from the point of view of the bamboo. So of course for us, as literary scholars, it's interesting to find out about what you found especially challenging when you were writing these parts of the book? Because it must be difficult to imagine how a bamboo might perceive the world.

SB: This is what you do with all characters: what does that character want? What does Stevland want? He's the plant. First, he wants to survive. So he needs a bunch of things, he needs iron, he needs water, he needs food... But one more thing was important, and this is what we know from plants on Earth, many plants are social beings. Trees communicate with each other, other plants communicate with each other. They have a social life. Many trees grow better and more healthy when they're in forests of their own kind. They help each other, tell each other about what's going on, if there are parasites or pests. So they are social beings. What do we know about social beings? We're social beings, we know that being alone is horrible. Solitary confinement is torture. We have to be around other beings. So Stevland, as it happens, is the only one of its kind. But then humans come along, other creatures come along, and they're intelligent enough that they can communicate with it. And now it has friends, it's not alone. He had been driven mad by loneliness and now he has creatures that he can be with. So, not only do they provide him with the food that he needs and the help that he needs to survive, the sort of physical things, but also the mental things. So, not to give anything away, but when those human beings encounter danger, Stevland will do anything to protect them, because he cannot survive without them. And there we have, I think, chapter seven. But that was the challenge the, one little thing I had to learn to figure out how to do

Stevland is how much plants care about each other, and work with each other and communicate with each other, because they're social. Just like us.

KS: Then I just have one last question, and that is concerning the title. Why did you choose the term Semiosis as the title for your book?

SB: Semiosis is a word that means communication through symbols. In our own species, language is semiosis, because if I say the word cat, that has nothing to do with the animal, but we understand it. In other languages we have that same verbal symbol for cat. Bees have ways that they can fly around, and those are symbols for things that they want to tell other bees. Plants, as I say, can change color and communicate with us. So semiosis is a way of using using symbols to create meaning to communicate, and that was chapter three. Communication between plants and us animals was key to the story.

KS: This is also a topic that plays a huge role in the exhibit, how to communicate with an entity, where you don't even know how they perceive the world or how they can express themselves. This was a really, really nice interview! Thank you so much for being here, for answering all our questions, and we are really glad that we came across the novel and are able to share it with our visitors in the exhibit.

SB: This is my pleasure and I'm glad to be part of this exhibit. It sounds wonderful and fascinating. Thank you.