

Courtesy of Hei-Jung Kim. Used with permission.

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Write about an interesting or surprising experience you had while experimenting with StarLogo software.

As a kid I enjoyed watching the movements of the ant colony. The ants climbing up from their cavern, then rapidly iterating through some frenetic pattern of turning, sensing, and moving, and then returning to their cavern, held my 6 year old attention. And I have to admit, it was horrifying and a little breathtaking to think how easy it would be to destroy their home by one swipe of my hand.

So it wasn't a surprise to me that I was most interested in the ant colony project in [StarLogo?](#) and I spent most of my time experimenting with this simulation. The sample ant project was as captivating to watch as the ant colonies that I watched as a child. The ants in the simulation were almost identical to how I remembered ants moving and again, I found myself enjoying the patterns of movement. The scenario of ants and food, led me to theorize on what would be the outcome of the simulation. I expected that the ants would eat the closest food source to the anthill first. However, the first simulation showed that a food source farther from the anthill was what attracted the most ants and thus was eaten first. I ran the simulation several times at the preset values for the diffusion and evaporation rates, and I was surprised to see that only once of six simulations did the closest food source attract the highest number of ants and was eaten first.

I then tried iterations with different values for diffusion and evaporation rates (ie. both turned off, at extremes, and at various combinations) to see how they affected the ants' behavior. What I found interesting was that not all of my predictions were true. And when my predictions weren't true, it motivated me to experiment with theories of why and I found that [StarLogo?](#) helped me with this.

[Mindy Johnson: I really loved this aspect of the [StarLogo?](#) programs. Most of them encouraged exploration and hypothesis-testing, something classroom labs can do, but not as efficiently (time, materials, and other logistics prevent testing multiple hypotheses within traditional classroom labs). The programming language may be too difficult for students to create their own programs, but working with the pre-fab programs was helpful and exciting in itself, mostly because the user can change the variables and make it "her own". Do you think being able to change the variables in the pre-fab programs gives enough power to the user to sustain a constructionist model of learning?]

[Hei-Jung: Well for me, the pre-fab ant project had enough there for me to relate to and experiment with, and I think I was doing constructivist learning. My entry point was my interest in ant movement which connected me to the ideas of diffusion and evaporation which affects movement, and from playing around with the variables, I was able to construct some theories and explanations for the ants seemingly erratic movements. And by the end, the ant world made a lot more sense to me.]

My experimentation with the ant project gave me a starting point from which to think about other decentralized systems. I started to program a dunkin donuts morning, but I didn't get far because I lacked fluency in the [StarLogo?](#) language, however it excited me that I could with more investment model this problem and test my theories.