

Interview with Robert Lang

By Jan Polish

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Robert Lang is a prolific author/creator and an articulate interpreter of origami. His new CD-ROM, The Secret Life of Paper, has received major computer magazine awards. I met with him recently in California.

Jan Polish: How did you get started in origami?

Robert Lang: About the age of six I found a book with some instructions for the talking dragon (which is a cootie catcher turned inside out), folding bird, traditional frog, and a spider made from--horrors!--cutting the frog. Of course at the age of six you don't worry about cutting and later I redeemed myself by designing a version of the same subject that doesn't use cuts.

As I grew up I kept doing origami. My folks bought me another book--which I've lost, but I'm pretty sure it was by **Honda**--and I was getting stuff out of the library. But the big change came at the age of 11, when I got **Robert Harbin's** *Secrets of Origami*. That was the big revelation: there was a whole world out there of origami! I folded everything in the book.

JP: When did you start creating?

RL: It's hard to say, because designing models evolved out of tweaking existing models, so where do you draw the line? When I go through my diagram notebooks, the earliest I can find is about age 13, but that's not the earliest designed, just the earliest written down.

JP: Did you realize that you had an unusual talent?

RL: I never realized that designing origami was unusual. After all, everyone listed in *Secrets* designed models, so I just assumed that everyone doing origami came up with their own designs. I knew that I had something to aspire to at 14, when there was an article in the *Atlanta Journal* about this college-age guy who had designed 500 origami animals. I thought, wow, that's pretty good--I've got some catching up to do! I picked a tough target: the article was about **John Montroll**. Twenty years later, I still haven't hit 500, but I've pretty much given up sheer numbers as a benchmark of progress.

JP: So you were folding in isolation at that time?

RL: Well, no. I had the *books--Secrets of Origami, Best of Origami, Art of*

Origami, The Art of Chinese Paperfolding. That's not isolation. There were probably 20 to 30 designers represented in those books, all with different techniques. I really liked the stuff in *Secrets* by **Neal Elias**. So at 14 or 15 I wrote a letter to him, and sent him some of my stuff. He wrote back and sent instructions for some of his box-pleated models. They were awesome; not much had been published in books back then. The Grand Piano, the Crucifixion, lots of two-part models (meaning two subjects from a single sheet of paper). They got me turned on to multi-subject models, box pleating, and using rectangles. A lot of my early work was from rectangles because the coolest work I'd seen was Elias's, and it was all from rectangles.

JP: When did you first meet other folders in person?

RL: I had corresponded with other folders for several years and had started writing for *British Origami Magazine* without having met anyone in person. Then I came to New York in 1984 and met **Alice Gray** and **Lillian Oppenheimer**. The meeting with Alice was pretty memorable. I met her at the office at the Museum and she had a container that was full of black widow spiders. Except it wasn't full anymore because there was a hole in the side of the box! She said to me, in her inimitable way: "Oh, yes, they nest where you're sitting."

JP: What folders influenced you the most?

RL: Neal Elias early on was the biggest influence. Also **George Rhoads**, and everyone in *Secrets* and *Art of Origami* had an influence on me. I've borrowed techniques from them all--I'm a big believer in borrowing--and later on, the largest influence was John Montroll.

JP: When did you start working with the computer?

RL: Well, I started diagramming with computers in 1988 when John and I began *Sea Life*. Computer diagramming was initially controversial for reasons that don't make sense to me, but it's widely accepted nowadays.

More recently, I've been using it for designing. I have long used geometric techniques in designing, and used math for little calculations of dimensions of various geometric shapes that show up in crease patterns, proportions, and so forth. It wasn't until the last couple of years that I started using a formal methodology that lends itself to computer implementation.

JP: Does using the computer reduce the amount of creativity?

RL: It's funny: people worry about that, but the computer is irrelevant to the question. It's like asking does using red paper reduce creativity? The computer is just a tool that speeds up things I would normally be doing in my mind or

with pencil and paper.

A lot of origami people apply the term "creativity" to the process I call design. For me the term creativity is much broader than design--it's deciding on the subject and how you're going to abstract the subject and then what kind of paper and folding style you'll use--a wet-folded model is designed differently than a tissue model--and all of those aspects require some level of creativity. Design itself--figuring out where the creases go once you've decided what it should look like--is only a small part of the creative process.

So computers don't enter into creativity. When I talk about using the computer for geometric techniques, those are techniques for design. I wouldn't presume to tell someone how to be creative, but I can tell them how to design.

JP: Do you think creativity is something that can be taught?

RL: I sure don't know how to teach it! I think it's something that can improve with practice and I think you can suggest exercises that will help someone improve on their own, but, no, it's not something you can teach.

JP: John Montroll suggested in a recent interview that it had something to do with spatial ability. What do you think?

RL: Design ability does. When I visit DC, I'll stop in and see John and we sometimes talk about design issues. It's really fun to share this verbal shorthand for design concepts because I know that his mind is working somewhat in the same way as mine. Now I don't always have a clear vision of how things work three-dimensionally. Much of my mathematical design work is a tool to fill in the gaps in my ability to visualize. I figure John doesn't need these tools because he doesn't have those gaps.

JP: Some people have spoken against the use of computers to create origami.

RL: Some folders have said that they don't see a way that the computer brings value to the design process. I think that might be for one of two possible reasons. It could be that anything that the computer could do they already have in their heads--I think this is probably the case with John. As for the others, most people don't even know what the computer is doing and don't understand the geometric concepts, and therefore can't even begin to appreciate what it could bring to their design process. It's easy to criticize something you don't understand.

JP: What about the "minimalists," who imply that anything that's technically detailed is not art?

RL: Even "technical" origami is still an abstraction. You're never going to duplicate an animal. You're trying to get the essence of the animal, but for me the essence requires more technical design than for some other people. And I think if you have the technical ability to get flaps or feathers in the places you want them, only then do you have the freedom to put something in or leave something out to get the desired effect. On the other hand, if you can't make a flap when you need it, you're sort of limited in the things you can do.

There is a second, often-overlooked level of appreciation of origami, which is the geometric design: how the layers stack up, how the paper is distributed, the lines and angles and usage of the paper. Purely geometric technique can be aesthetically beautiful in itself. People who like to fold technical stuff appreciate that aspect. Some people don't have that appreciation, and since they don't have the appreciation they think that it doesn't have much value. It's their loss.

JP: Do you consider yourself an artist?

RL: For the folded model, yes, I guess so. The finished model, whether my own or someone else's, is a visual effect. I'm trying to achieve a certain collection of lines, trying to recreate an effect that art creates in other media. When I design a model it's because I want to create that feeling in myself, and if I'm fortunate, it also creates that feeling in other people.

JP: Why do you design what you do?

RL: When I see a nice model, whatever it is, the thing that really gains my admiration is something that surprises, something that sends my thinking in a new or different direction. It intrigues me when I stumble into a region of origami I haven't explored. It makes me want to do something different myself; there's no point in doing the same thing as someone else. The "insect wars" were an example, when a bunch of us technical designers were trying to add more and more detail to our insects, and challenging each other. It was fun and friendly, and everyone involved was having a good time and discovering new things because of it.

JP: Which contemporary origami designers do you admire?

RL: The person whose designs I appreciate the most from a mathematical basis--they're complex and subtle--is **Fumiaki Kawahata**. He is the most sophisticated designer out there today. Sophisticated doesn't mean "greatest number of creases," but in terms of how all the parts of the crease pattern go together--they're mathematically rich. I really admire **Herman Van Goubergen's** work because of his unique approach to each model. There are very surprising things in the work of **Jeremy Shafer** and **Chris Palmer**. And

when I saw pictures of **Eric Joisel's** work, I was blown away--it's completely different from anything else I've seen.

JP: Where do you see origami going?

RL: In all directions at once. The cutting edge is on the edge, not in the middle, so I see nothing wrong with people exploring different areas. People have asked who's the next Robert Lang--there shouldn't be a next Robert Lang. There should be someone else who does something that Robert Lang never thought of, and indeed that's what these guys are doing.

JP: What are you working on now?

RL: I'm getting ready for the sequel of our CD-ROM *Origami: The Secret Life of Paper*, finishing a new book, *Origami in Action*, and have been playing around with business card modulars. And I still work with computer algorithms. The big problem I'm working on now is that what I've got so far will compute the crease pattern for a model, but not one with a linear folding sequence. It would be much nicer to have the folding sequence and reference points. I have an idea for an algorithm to do that. It's taking a ton of programming, but fortunately, I like programming as well as origami. I like the process of persuading a computer to do my bidding, and persuading it to design origami is hard to resist.

JP: Where is your design work going?

RL: Oh, I don't know--I'm sitting on this tiger, and just riding it wherever it goes!