

Interview

Seeing the world as visual patterns of connectivity

Richard Saul Wurman interviewed by Gerlinde Schuller for her book 'Designing Universal Knowledge', 2009

His own curiosity and lack of understanding are Richard Saul Wurman's motivation to make the complex clear. Gerlinde Schuller talked with him about his insatiable thirst for knowledge and the transformation of data into understandable and useful information.

Gerlinde Schuller: For more than forty years, your passion has been to make complex things understandable. You have written and designed more than eighty books on information theory, information architecture, healthcare, cartography, sports, children, and finance. Where does this diverse interest come from?

Richard Saul Wurman: My passion is, in the simplest term, to make things that interest me understandable to myself. However, that is to make complex things, which I don't understand, clear. To bring clarity, not simplicity. In my mind there is a big difference between clarity and simplicity. There is this movement of making things simple as being better, that's often the dummied down of things. My passion is driven by my interest. I don't care about universal knowledge. I care about selective things that I don't understand. The things I want to make understandable are big, general subjects – cities of the world, healthcare, understanding children – they're big generic subjects. Therefore it takes in a lot, but it's not driven by the great washed and unwashed out there. It's driven by my own stupidity.

What was the first trigger in the 1960s that got you to deal with making information understandable?

I had a moment of deepest terror, where I realized I didn't understand anything. That was just before I graduated from architecture school. I was probably twenty-one. I do remember it because I reflected back on it continuously. It was terrifying, and it still is. You don't lose your terror, what you do is to understand it better. I know what I'm terrified of so I can survive better. I accept my terror and most people do not accept their terror. I try to understand my terror. Patterns that exist, patterns that don't exist. It's this nothingness, this zero that I am at every day and certainly at the beginning of any project.

Louis Kahn said: 'Beginnings, beginnings, beginnings, beginnings, I love beginnings'. I feel that to my soul that it is this beginning of things when you know nothing is what I love. He loved the beginnings because they were empty, they were void, and there was no preconception. The fundamental rule I have is how to understand what it is like not to understand.

Is it this diverse interest, which made your work so interdisciplinary?

You write, you design, you organize conferences.

I can look back on my life and say 'Yes, I guess that's why I did it', but I wasn't conscious of doing it. I don't have this plan; I did things because they interested me. I am much simpler than a question like that.

If I get fascinated about the growing of tomatoes, I would do a project about that. In fact I am a little fascinated with the growing of tomatoes because I sat next to somebody on a plane a week ago, who told me very interesting things about tomatoes. This is a good example because it doesn't have anything to do with my life at the moment. Everything has the potential to be equally interesting. You know, we have approximately 100 trillion cells in our body, and only half of them are human and half of them are animal, yet we call ourselves a human being. I refer to myself as a zoo, because there are so many other animals that are depending on me to live and I am depending on them to live. There is an arrogance of calling any species a species when these little things are called species when you study them separately. So if half of these little species that Larousse Dictionary of Life Forms calls a species and they just happen to be in here or on my eyelids or some place, I can't say that I'm a species. I am a zoo!

The way of looking at the same thing in a different way fascinates me. That permission-giving to not accept the simplest things about our life. I was led to believe that all life on Earth was dependent on a cycle of photosynthesis, with the sunlight as an energy source. In 1977, more than a mile down in the Pacific, they found black smokers, a type of hydrothermal vent. These tubes are 10-40 meters tall, heavily pumping out super heated water filled with sulfuric acid, laden with gases. Out of these smokers come worms that live there with no sunlight and no oxygen. They're living in poison. They're the fastest growing creatures on Earth. It happens that in the Caribbean there are other smokers coming out filled with methane gas, freezing cold, under pressure with the sea above them – poison again. And the worms that live there are the oldest living creatures on Earth. So we have the fastest growing and the oldest creatures on Earth and neither of them are living on the sun. Completely different than we ever knew. Well, do you know how exciting that is?

That says up is down, down is up, everything can be different! Another example is what we thought we knew about the universe. All the way through our schooling we learned that in space there is a great vacuum, the vacuum of space. In the meanwhile we know that 96% of the space is actually Black Energy, so there is something. It's called Black Energy and it's not a vacuum as thought of. That was completely wrong, too. And the Black Hole is the densest part of the universe. How can you call something which is dense a hole, like if there would be nothing?

Everything we do is backwards and the opposite. The things that are wonderful about Venice are the spaces between the buildings. The experience of Venice is the spaces between the buildings, the experience is the opposite. That map over there is Nolli's Map of Rome from 1748. The interesting thing about that map is that everything white on the map is not only the streets and the piazzas, but the ground floor of every public building is there. That's a public environment map; it's a map of every place you can walk. It's a very different map. I love this map of Rome, it's one of my favorite maps. So, I look at everything the opposite way. I challenge everything and look at anything to find a pattern that's not there. I am interested in everything and I can talk in this way for a long time.

When do you make a big project of a certain subject that interests you?

I know how lazy I am. It's this laziness that I developed a plan for myself to tell everybody that I am going to do a project before I am doing it. Because if I don't, I won't do it. So everybody expects that I am going to do it and this pressure makes me do it. Humiliation is a great motivator.

Is there a social plan behind your projects, like Neurath developed in the 1930s?

I think it's wonderful to have these plans. I am not against that, but it doesn't drive me. What drives me is trying to understand things. I know that when I try to please people, I don't please me. If I don't please me I don't know anybody else I can measure what I'm doing.

I don't know what's going on in your mind. What you think is going to influence what you put down, what questions you ask, whether you understand me. The only person I somewhat know is myself and I somewhat know what I am thinking.

How can I judge anything what I am doing based on what someone else is thinking, when I don't know it? It's a very simple proposition. It's arrogance. I am not arrogant. It looks like arrogance but it isn't. It's the opposite. I don't try to understand target groups. I don't have a social concern.

Information designers design complex information that must first be collected, researched and edited. It has to become qualified information. What is the difference between data and information?

Data is everything, a chair is data by itself, it doesn't have to be numbers or words to be data. Big part of the word 'information' is the word 'inform'. Most information in newspapers, for example, I wouldn't be able to explain it to you, because it didn't inform me. It is very difficult to do so. If you would make this so it can inform you, you can call it information.

There is a thin line between information, understanding and knowledge. The premise is that it's not an information explosion, because that should make us feel bad. There is an explosion of data! Things that we can understand, I don't think that there is a limit of what we can take in. If it's something which is really understandable I can keep on taking it in. If it informs me I don't go after it unless I am interested in it. If I am interested in it and it informs me it becomes knowledge and understanding. Understanding, for me, is a more grown-up term. In my mind, I can see patterns when I understand things. I see the world as visual patterns of connectivity. I think pattern recognition is a fundamental part of the creative mind. But this is not my big theory, a lot of people think that.

Does data recognition include for you data mining?

No, it's just having an empty brain and being able to put a pattern in there that I have never seen before. Maybe it exists in some place, but I haven't seen it before, so I come up with patterns. I see everything as patterns.

You have published two books on 'Information Anxiety' (1989/2000).

What does the title refer to?

I thought in that time and still today that the public at large is anxious about what they think is this explosion of information, and since it is information they should understand it.

The anxiety is caused from the gap between being able to understand it, thinking you should, and actually understanding it. If I tell you there is not an explosion of information and that the reason that you don't understand something is that it hasn't been put in an understandable form, it's not your fault. Get rid of the anxiety!

How was the book developed?

I did the book like I am doing this interview. I talked to Loring Leifer, who is a good writer, and I made up the chapters, which we organized later. I designed the form of the book with the possibility of placing comments in the margin areas. I spoke to her and it was tape recorded, transcribed and edited. The book is basically a long conversation with myself.

I value conversation above almost everything. It's the most wonderful of human inventions and the most complex thing we do. It has so much nuance. I am sitting here and you're

nodding your head, which tells me that you understand what I am saying. We don't have a computer that nods, therefore we don't have any interaction really with the computer and anybody else in e-mails. We don't know whether what we are writing is understood at the other end. There is no sense of communication. Nothing is better as far as communication goes than a conversation between two people. When there are three people I then tend to be giving a speech and I only say what I've said before. If there is one person, I am capable of saying something I never thought of before because you don't have an audience really.

Is this the basic thought behind your concept of the TED conferences which you established in 1984?

Yes, I tried to simulate, in the design of the conference, the speakers having a conversation with the audience. There is no podium, somebody talks from the very center front of the stage. I often had the house lights up, so that they can see the people. I have protected four one-hour breaks and an hour and a half lunch where everybody meets everybody. There are no private dinners. And what people appreciate most are these conversations, more than the speakers. That's what they take home with them. It was a new form of conference then and it worked well. It gave people permission to access information differently. All of my projects are just ways of looking at the same thing again.

You have designed atlases, travel guides and guidebooks on healthcare, sports, and finance. To what extent were you involved in the editorial work in these cases?

Always. The medical guide 'Understanding Healthcare' is based on seven hundred questions, which I came up with the questions. A good question has in it the answer and the whole content. Good questions are always the starting point. Never the answer. When the author Gertrude Stein was dying, people around her bed asked her: 'Gertrude, Gertrude what's the answer?' and she responded: 'What's the question?'

Is this really true?

No. (*laughs*) It might be true, it's an anecdote.

So during a book process you do the editorial work by asking questions first and then start designing?

In a certain way I do everything and I do nothing. I do both ends of the scale. I do everything because it's my idea. I get it financed somehow, if it's a good, fundamental idea. I develop the table of contents, which is the whole idea.

I did a whole book about table of contents in the seventies, because that's the fundamental question about every book. It's called 'Guidebook to Guidebooks'. When you do a guidebook everything is about the table of contents. The table of contents implies a question. How you organize those questions is the book. I set the size, the style and the grid, what's going to be on each page, how it's going to be written, the length of everything. By choosing who's going to do things, I'm designing the book. As a casting director has a lot to do with a movie by which he chooses the actors. So I guess it's a lot like a Hollywood picture.

I keep the overview, I do design some pages but not all of them, and there is no doubt that the people who work on it make it much better. Without terrific people working with me, my books wouldn't exist. Most people who work for me make everything I do better than I would not be capable of doing myself. I am not a great designer and not a great writer and I need people that fill in those huge gaps. But it's my book. I feel absolutely fine for two reasons to have my name on the cover of every book. One, because I am a brand, and two, because it wouldn't happen if I wouldn't do it. But everybody who works on my books gets credit as they well deserve.

How does the teamwork look like and what role does technology play?

I am working with people on a distance. We have a couple of meetings, but I won't meet with people who know me so well because they worked for me for years. A lot of my books are done virtually. I did a TED conference in 1993 in Japan. I could not have done that conference without fax machines. Fax machines had just come in then. It was a different language and a different time zone. So this whole conference depended on a machine. I couldn't have done 'Understanding USA' 1999 and everything else since without the Internet and the possibility to send good visuals back and forth with files.

My first ten 'Access' guides I pasted up myself. I cut everything and designed every page with waxed galleys. After these books we could start setting type on a computer and that changed my life. The technology really helped me, I always embraced it.

How did the Internet change our attitude towards information?

The Internet gives us easier access to information. It didn't really change the amount of information we're dealing with. You can walk into a big library and there is lots of information, but you don't have access to it. The computer freed up some of the access to what's in a library. The Internet is a world library.

I am so happy that, for this moment in history, I've been allowed to live when there was television and there is the Internet. I can fly through information that I can find out about much more now. So we will be able to find out much, much, much more in the future and much easier.

But we have to sort it out ourselves?

Yes, but why not do something? To put something together is fine, there is no arrogance about that.

Do you believe in universal knowledge as Google, Yahoo or Wikipedia promise us?

We will have an increasingly better way to find out things. A fundamental part of our society is a finding society. When I redesigned the Yellow Page phone directories of the West Coast in the 1990's, I thought it was interesting as hell how to find something. Finding out things is very much part of our world and the increasing ability to find things is something we are enamored with.

But the possibilities of how to find things is not very diverse.

I ask myself, why not use LATCH, the five most common ways of organizing: Location, Alphabet, Time, Category and Hierarchy? Why can't I organize my search results by when they were done, when they were entered. Why can't you organize them from where they come from? These are written in Germany, these in the United States. But it will get better. We are on the track. We are thousands of percent better than when I was young and we will be another thousand when I die. It's a natural progression.

Why don't the search companies make these improvements?

They are busy with other things, but they will get around to it. If it is such a good idea it eventually will happen. These are obvious things, so they will do it sometime.

Universal knowledge will never happen, we will just have better ways of finding what's around. Because there is always a better way of doing it. Universal knowledge sounds like it's an end and that we'll get there. But it's one of these things that, if you get very close, it has already moved further. It's a moving target.

Will there be tools or services on the Internet that distinguish for us high quality information from junk?

Some of the search engines feel that they do that, ask things and you can ask a better question more normally to find something. They all feel that they're selling the issue better, information with less clutter. And people keep on going to Google, because it's comfortable. There will be some breakthroughs. There is always somebody who breaks through the obvious and the obvious will be challenged and somebody will do the opposite of it.

Another trend intensified by the Internet is that information researched and edited with great effort is offered for free. The BIFAB, the largest encyclopaedia publisher in the German-speaking countries, operates encyclopaedia portals, where their encyclopedic information can be retrieved free of charge. In 2007, Rupert Murdoch announced that he plans to offer the online content of the Wall Street Journal for free. Advertising revenue would then be expected to replace subscription fees. Can we still appreciate valuable and edited information if it is offered for free?

To accompany information with advertisement is the Google model. They are also giving me a service for free, I don't pay for it. Look at the model of the new TED conferences. They put all the good speeches, the TED Talks, for free on the website. To go to TED can cost you approximately 10,000 dollars, but it's free online. This doesn't mean that nobody goes to TED.

For the AIA National Convention Conference in 1976 called the 'Architecture of Information' I wrote a fable. In this fable the 'Commissioner of Curiosity and Imagination', which was me, did everything in the city the opposite. He changed, for example, the law of copyright to the right to copy. The only thing you could copyright were bad ideas, the good ideas were public ideas.

Will the copyright issue be resolved?

Yes, it's going to be resolved. It will slowly be resolved by people making it free. It's the right thing to do.

The price we pay for information will no longer say something about its quality?

No, you can pay for it sometimes and you don't pay other. I think it's ok to pay for a TED conference and have it free, too. It's for different markets, different experiences. You can't make the TED conference free, because that doesn't make sense. What you do has to make sense. It doesn't have to be fair and equal. Only your intention has to be fair.

What topics would you still like to research and edit for the public?

My next big project is 19.20.21. I like to understand the big cities in the world. I like to understand how you develop a methodology for understanding where everything takes place. Basically everything in the world takes place in cities. Now that's an exaggeration, but more than half the people live in urban agglomerations and a huge percent of all business is done there. A huge percent of everything in the world happens in these agglomerations.

Communication goes on between cities and we don't understand them relative to each other. I am curious about this. I'm going to use 19 of the largest cities that will have more than 20 million people in the 21st century to develop this methodology of understanding.

At the moment I am working on the 19.20.21 exhibition, which will be opened in Singapore in 2010. Maybe there will be a subset of that exhibition in all 19 cities in the world. That might

end up being a worldwide exhibit. That would be new, to show 19 exhibitions simultaneously, live and permanently all over the world. There will be also 40 books on the subject and 19 conferences going on all over the world. My parallel work is raising the funds for doing the whole project. It's a huge project.

How does the exhibition concept look like?

I didn't work on it really, the idea for the exhibit layout just came to me. I know it sounds corny but that's the way I always work. I think of something in a moment and it all comes clear. So I just made a drawing of the room. There are seven screens on each wall, 21 screens in total, 19 of the cities and two on Singapore and a globe in the middle. The screens will show at the same time demographics of the different cities and live web cam images. You will always have the sense of this comparative moment. At one time in the program you will be able, as a visitor, to interact on the screens yourself. Every exhibit I've been to, if it's been about cities, was about boring statistics and charts. You cannot stand in front of a chart and read it in an exhibit, you don't put a book on the wall.

This is an eighteen-minute experience, in which you're not bored and you can come in anywhere. I really do think it's a different way of showing information. And the catalogue is a breakthrough idea for a catalogue. When you leave you tell somebody at the door what language you speak and they give you a memory stick with everything which went on that day, the live web cams and everything you saw. A memory stick in fifteen languages. So no paper for the catalogue. 19.20.21 is a large project, it's going to be probably a thousand people, each doing a little bit.

Should the project be understood as an educational tool?

No, I only offer clarity. If I realize that I am not a smart guy and that anything that I can understand it just so happens a lot of other people will. I don't have to make it for them. I make it for me and some people will have some interest to it. For me, learning is remembering what you're interested in. Now, take that sentence apart and if you can't fault any piece of that sentence then that is the most discrete definition of learning.

If you don't remember something, you haven't learned it, and I contend that if you do not remember anything, you're not interested in it. If you want to learn, you have to be interested in something to remember it and to learn. Therefore the whole educational system is completely wrong because it is not based on choosing things from your interest and making interest connections. I contend that you have taken courses in school in your life that you were not interested in, that you did very well in and you don't remember anything about the course, that's memorization. That's why the educational system is so fucked.

What would you propose?

I think you should have a guide that helps you with choices. If you're interested in a certain subject he should advise you what connects best to it. Everything connects with everything, it doesn't matter where you begin. I'm not cutting out any courses like math, physics, chemistry, design, and history. But I'm starting from their interest to make interesting connections, and then the pupil will remember everything.

You don't learn linearly, but you rather build up a knowledge network for yourself?

Exactly. Because linearity is a dead end and they go back to zero again. You're not allowed to think in tree connections because the lecturers know only one subject. Another mistake they make is asking students to take notes. So, they don't even listen, they just put everything on paper but not on their minds. They should rather listen, listen, listen!

Richard Saul Wurman, received Bachelor's and Master's degrees in Architecture from the University of Pennsylvania (USA) in 1959. He chaired the National AIA Convention in 1976 where he coined the term 'information architecture'. Wurman created and chaired the TED conferences from 1984 to 2002 and the TEDMED and eg2006 conferences. He has been awarded several grants, among others the National Endowment for the Arts, a Guggenheim Fellowship and the Chrysler Design Award. His more than 80 books focus on the topic of making complex information understandable.
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