Episode 2
Space and the Work Experience: Building Better Workplaces

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Alex LoPilato: Welcome to the Work Science Center Podcast, brought to you by the Work Science Center of the Georgia Institute of Technology. I am your host, Alex LoPilato. You can find more about the Work Science Center at our website www.WorkScienceCenter.GATech.edu. In today’s podcast I talk with Dr. Sonit Bafna, an associate professor of architecture at Georgia Tech, about the intersection of architecture and organizational psychology.

To start the interview off, Dr. Bafna, could you please tell us a little bit about yourself and what drew you to the field of architecture?

Sonit Bafna: So, I decided to become an architect at a very early age. Maybe, I was about ten or eleven when I first understood what the profession is. I thought that would be a very cool thing. Since then, it was almost like I knew I was going to be an architect. I think it was also true that I always was interested in buildings. Even before, I remember looking at buildings and wondering about their shapes, and trying to understand what had been done. So, both of those things, the idea that you could do a profession doing that, but also the natural interest in buildings both came together. And, from that time I almost had no doubt that that was the main thing that I wanted to do. Even though I had friends, and we were all very much interested in popular science. There was always a sense that I would be interested in going into science, but I had been mostly focused on becoming an architect.

In the beginning, I was very much interested in doing design. But, since then, since my graduate studies, I realized that what really interested me about architecture, was just trying to understand architecture as a practice. What is it that makes it a separate discipline, a distinct discipline in its own right? Why is it that architecture is not just reduced to building or civil engineering or something like that. So, over time I have become a little more focused on what you might call, the subject is technically called architectural morphology. The study of forms of buildings. The central question in morphology is, studying the variation in the shapes of buildings and the way buildings are shaped. For me the question is to understand the reciprocity in the way that we understand how we shape buildings, but also part of the way we shape buildings is because the buildings shape many of our perceptions, our cognition, understanding of behavior in it. The reciprocal thing is really the focus of my interest now. Because of that, obviously psychology comes into play at various times.

AL: Yeah, how do you see your research incorporating or overlapping with research in work psychology?

SB: So, one of the interesting environments, I think, that we have studied in morphology has been work environments. Work environments, at least to my mind are interesting, because they are a relatively new environment. The idea that there is place specifically devoted to working as an entire building, not just a room within your house or something like that, and where you only go for a part of the day and then you come back, but you spend a greater part of the day. That is obviously not historically a very common thing to do. It has happened in some conditions in some parts, but mostly the idea that a majority of a population would get up, leave their house and go somewhere else to work, then come back again is within the late 19th century. I think because it came with modernity the idea of a work environment is significantly associated with
what we think of modern life. To study work environment, partly is to understand the shaping of particular types of buildings. But also, for me, the important thing is that is where architecture begins to come and help us get a sense of ourselves as modern beings. People living and going about the modern life. And that is where my interest lies. In studying the relationship of the two things.

**AL:** You have written on a topic called space syntax. Could you explain that a little bit? How it may affect our own workplace interactions and so forth.

**SB:** Space syntax was developed as a research program. That is the best word to use for it. Because it is not quite sure what it would be. It was a community of researchers addressing a very specific question. It was called space syntax because the idea was that the spatial organization, the organization of space in our buildings, had what you might metaphorically call a syntactical quality. That means that the quality of how units of space are put together is, in of itself, interesting over and above the semantics, and by that you might think of uses you might put to it.

If you think of a house, it is one thing to say there is a bedroom, and a living room, and a kitchen, and to understand how those come together to make a house. But, even if you remove the labels, a house has a kind of distinct structure that is recognizable. If you go to an empty house, you would know what kind of use the bedroom might potentially have. Understanding buildings at that level of abstract spatial organization was the focus of space syntax studies. The idea was that kind of study would reveal, stripping away all the other kinds of features, just understanding the basic spatial organization would reveal significant properties, specific typological properties in architecture, but also people discovered very soon that they could discover significant aspects in which buildings shaped our perception and behavior.

**AL:** OK, so to build off of that could the way a building is shaped, could you tell a person’s status purely by the room they inhabit in their work environment using space syntax?

**SB:** So, in some cases, yes. It is very easy to do that. For example, if you take this building and you take a very simple measure of the space that you are in within the building, it can be simply the number of doors that you have to cross in order to get in from outside. Although this building has maybe 50 or 60 rooms, actually no room here is more than 3 doors away from the outside. So, the building is relatively quite flat. That is very common to public buildings. Now if you think of the number of doors crossed as a measure of status, for instance, you realize that the more important people in the building, the dean’s, the chairs’ of schools offices are all located three steps away. Whereas, everybody else is located maybe one or two steps away. By steps I mean the number of doors you would cross. So that is one simple measure in which you could basically assign.

It also works in other cases. In a temple, for example, the Indian temple, you go through a series of thresholds, the deeper you go, the more sacred the space becomes, the more restricted your entry becomes, and the more difficult to access it becomes. So, various kinds of things can be measured directly as a simple property. This can be built up in more complex ways and then you can say many more things about the way people are organized.
AL: Do you think space can have a deeper impact on a person’s actual mood or emotions?

SB: So, that is a new area for me to study. Space syntax has traditionally not paid too much attention to that. It is something I have been pursuing slightly on my own. What I want to say here is that the answer is a little less clear here. The first answer should be no, because if space really had impact on it, it would become too doministic. It would not be a good work to live in. I think it can basically fine tune your emotions in different ways. And it can do it, I think, by working not directly, but indirectly.

So, one thing that space helps do, especially in larger buildings and more complex buildings, is to develop habits of use. If there are many doors, then generally people end up going through one door on their way to work, or something like that. Or, to give an example of this building, I have a habit. Every time I come in in the morning, I first do a few things. I check my computer and my mail, things like that. Then, after about half an hour, I go down to get a cup of coffee, and I choose a particular route to do that. So, now that has become a habit of mine. And, I sometimes do it even without thinking too much about it. But, that exposes me to certain kinds of people. If everybody else is doing that, then the building begins to develop what you might call a spatial culture, a particular way that people behave in that building. And that will create a kind of overall atmosphere in the building. Either the building will feel as if you are aware of everybody or the building might feel as if you are a little bit separate from everybody. And that spatial culture can have actually a very strong effect on your emotions. Or fine tune your emotions. So, the effect would be a bit indirect. It is because of the intermediate effect of the kinds of patterns of culture that develop within the space.

AL: What do you think architects and psychologists can learn from one another in this respect?

SB: In some ways, the answer should be very obvious. If we are understanding how people behave in space, then psychology is the obvious answer to that issue. For me, I would frame the question slightly differently. For psychologists, architecture, or buildings, or even environments are a domain of behavior in which the behavior might have different characteristics than they would in a natural environment, we might say. The field of environmental psychology has been about studying psychology in this particular domain. For architecture, the problem is likely the opposite, in the sense that psychology is not a domain for architecture, but psychology is a place where architects can develop some intuitions about buildings that can be useful for designers or for understanding how buildings work. So at one level, the relationship is simply that psychologists produce theories and we are the consumers. You know, psychologists are the producers, and we are the consumers. Because architecture is an end use thing, from various sciences including psychology, we sort of develop a basic understanding of things and then we put them in application. So that is the very obvious reciprocal relationship.

But, my feeling is that it can be taken one more step further. That is that when people think of psychology, when I think of traditional work, let’s say thirty or forty years ago, when I-O psychology really became a big field, people were making theories about using buildings and building environments which were part of the general theories. So if you want to understand, for
example, how do people navigate in space, people can say “oh what kind of clues are available in built space” and how you can do that. But I think that even more interesting is that built environment may so phenomenally different, they may get psychologists to think of theories which they have not thought about before. Or, questions they have not thought about before. So, it is not simply a place where you have a restricted domain in which some variables need to be tweaked. It may be that you ask questions that otherwise would not have come into being.

**AL:** OK, so you are talking about how architecture, the built environment that we live in, can actually inspire and help us come to new ideas.

**SB:** Yes. And, discover new domains for psychology to think about. Not simply built environment but new ways about how psychologists picture the human person, the psychology of the person.

**AL:** And, is this similar to the book you are starting to write?

**SB:** It is. That is exactly where it goes. The issue in the book that I am interested is that it comes to the point where architecture is not simply about the physical making of built environments for use. In which case, for psychologists who are studying it, they could think of built environment as being an unspecialized domain. But it has a second thing that comes into play, and that is at least in the book I am thinking about, it what I would call the imaginative environment. When somebody is designing a built environment it is not simply to make people do something but to work in the same way that a novel, or poetry, or a painting might work, which is to transport people into a different world. We have not fully understood this. It may happen with unconsciousness or it might happen with, you are actually diverting your attention and it made you think about the way the building is made. Then it is simply about how do you use the building or how do you navigate it.

Because, humans do create these very special things, special series of artifacts, we can call them art or maybe there is a wider category for that, which basically their job is to remove ourselves from our present here and now and take us somewhere else for a while. And, I think that we have not really understood the psychology of that, of what happens when you are, what part, is a separate faculty for imagination involved there? Is there something else that comes into play there? And, buildings, I think, really are a very distinct category of environments which allow to do that, while at the same time, making people very strongly anchored in their here and now. So, this paradoxical quality of buildings is, I think, a very interesting question for a psychologist to address, because it talks about the capacity that we have, which is I think not completely theorized, as a psychological theory.

**AL:** Very interesting. What would you recommend reading-wise for work psychologists, or psychologists in general who are interested in the effects of built environments. Just a general book or few.

**SB:** I think it maybe would be useful for some psychologists to maybe read a little bit of the space syntax books. Bill Hillier and Julian Hanson had co-written a book which was almost a founding document, it is called “Sociological Space.” And it was a kind of freewheeling book. It
discussed parts of morphology, it was very influenced by anthropology, it was written early 70’s and some of the flavor of the book was very structuralist. So the ideas are a little bit freewheeling, they are not very concrete. But they are a number wonderful intuition in that book about how we use space. And, the idea of thinking of space as networks of presenting as mathematical graphs and applying network theory to understand buildings was developed kind of strongly there. So, some of the books on space syntax are very useful for that.

There is of course a lot of work in what is known as environmental psychology, there is a whole domain its heyday was really in the 60’s or 70’s but since then there has been continuing work but has now become more specialized. And, I think one of the most interesting work we have coming out of there is actually not done so much by architects but a little more by psychologist who are looking at, for example, way finding practices. So if I think a lot about actually, I spend more of my time reading psychologists who talk about architecture than architects who are writing about things that are interesting in psychology. So, I don’t know what other books. I think most of architecture literature is, to be honest, a bit derivative. They are repeating theories that could come from anywhere. People still think of architecture as an application domain, so there are few architectural theories developed which are finding their way out. This is one of the issues, I think, at least that I would like to address.

**AL:** So that is kind of to push architectural theories into psychology as opposed to taking psychological theories and applying them to architecture?

**SB:** Exactly. Or, I think the better thing is because I am not sure if architectural theories would be of direct service to psychology, although yes, they could help us discriminate why, for example, for a psychologist who is studying architecture or buildings thinks of architecture as a discipline. So for them the idea that there is a building that architects considered wonderful and a great building and other buildings that architects are not enthused about for psychologists I am not sure if there is any theory for which that difference is relevant. So, I think that they could read some books on architecture just to understand and ask questions, of why is that within at least the architects of the world, we make a distinction between those two types of buildings, and does that difference have anything of relevance to psychology?

**AL:** Great, very interesting. Thank you so much. This has been very interesting and really useful information.

**SB:** Thanks for giving me the opportunity to talk to you.