SCAFFOLDS FOR BUILDING EVERYDAY CREATIVITY

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Abstract:

A human-centered design revolution is taking place. Consumerism is no longer enough. The everyday people we serve through design are becoming proactive in their demand for creative ways of living. New design spaces are emerging in response to people's needs for creativity. The role of designers will change significantly in the near future.

Keywords:

adaptation, communication, convivial, creativity, design, experience, human-centered, participation, scaffold

Where is communication design now?

It is 2003. New information and communication technologies have changed the ways in which we live, learn, and play. How we communicate with one another has been particularly affected. We can reach others and be reached by them anytime and anywhere. And this is not always a good thing.

The new information technologies afford nearly instantaneous feedback. Consequently, communication design has moved from being a one-way transmission of the message to being an interactive scenario that unfolds rapidly over time. But we, as designers, do not yet have the knowledge, processes, or tools to deal with the unfolding of the interactive flow of information.

The design education system is struggling to keep up with the demands of these new challenges. Students want to be prepared to live and work in the interactive world, but those who teach them are struggling even to learn the new tools. How can we teach the next generation of designers when we don't understand the tools or the media?

We are at a crossroads in communication design. Design and marketing professionals sell "experience design." Some Web design firms proudly claim to be able to "manufacture experience." Do they really think they have the ability to design or to manufacture an experience for someone else? Do they think they have the right to determine what other people experience? Unfortunately many claim to be doing so.

Who are we serving through design?

The people who buy and use the products of design are the people that we serve. I will refer to them from here on as "everyday people" to distinguish them from others such as designers or engineers who have been specifically trained to design and develop goods and services.

The labels we use to refer to everyday people have been changing. We are slowly becoming sensitive to the fact that they are first and foremost **people,** as opposed to users or consumers.
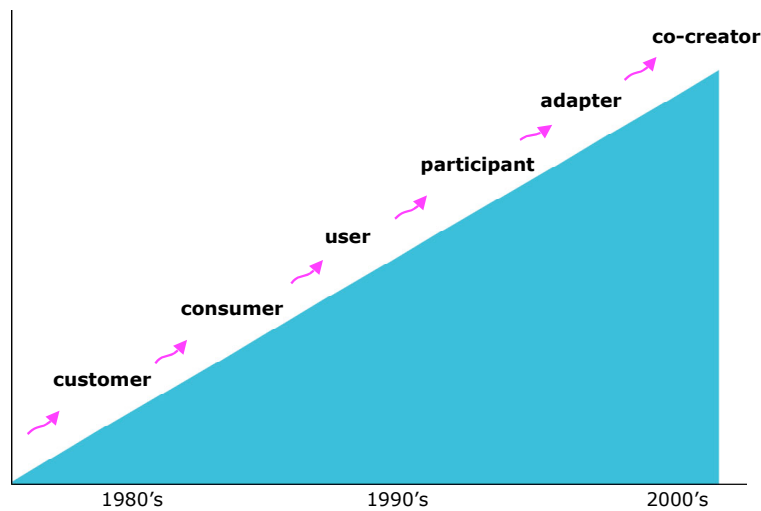
Figure 1: A human-centered design revolution is underway

Looking at Figure 1, one can see how the labels we have used to refer to the people we serve through design have been changing over the last 20 years. For many years, we referred to them as the "customer" or "consumer" (*i.e.,* the recipient of the "product" at the end of the design and production process). We changed to thinking of them as "users" in the 1980's and 1990's as the move toward user-centered design processes gained acceptance in response to more advanced products of technology. As users, people are still recipients of artifacts of the design process, but they play a more active role in their interactions with such products. The user-centered design approach is still prevalent today in communication design circles.

In other areas of design (*e.g.,* software in particular), there are preliminary signs of other ways to see the people we serve through design. We are beginning to see them not only as recipients of the artifacts of the process, but as active participants in the design and production process itself. We see that they are capable of adapting products to better meet their own needs.

The need to be directly involved in the creation and production of goods and services is pointing toward a human-centered design revolution, with the act of co-creation between designers and everyday people being the end goal.

The emergence of more creative ways of living

In the generative research I have conducted over the last three years for many different clients, it has become increasingly evident that everyday people are no longer satisfied with simply being "consumers." They want to be "creators" as well.

This unmet need for creativity is being expressed through the use of participatory toolkits (Sanders and William, 2001) whether we are conducting research with people about their home experiences, their learning experiences, or their work experiences. Their examples of what constitutes creative behavior are surprisingly varied. For example, some people say they feel creative when they are exercising or when they are cleaning out the closet. Others feel creative when making scrapbooks from family photographs. And others feel creative when they are cooking "freestyle," making up the recipe as they go from whatever ingredients they have on hand.

The interest in more creative ways of living can be seen also in the recent spate of new books dedicated to the topic. Two good examples include Ray and Anderson's *The Cultural Creatives: How 50 Million People are Changing the World,* and Florida's *The Rise of the Creative Class.*

New forms of creativity in art and design are emerging as well. *Postproduction* (Bourriaud, 2002) refers to the increasing number of recent artworks that have been created based primarily on pre-existing works of art. Artists today are interpreting, reproducing, and re-using the art originally created by others. Similarly, "adhocism" is the idea that describes the trend in industrial design whereby old products are salvaged and recombined to create new ones. The new products are often humorous, such as cheese-grater lamps and scrub-brush coat racks. (Thompson, 2003)

The need for convivial tools

Why are people expressing their unmet needs for creativity now? One explanation is that the tools we have made to "improve" our lives have, in fact, taken creativity away from us. A concern that this might happen was voiced over 30 years ago by Ivan Illich, one of the radical theorists of the 1960's.

Illich defined tools as anything made by man. "I use the term "tool" broadly enough to include not only simple hardware such as drills, pots, syringes, brooms, building elements, or motors, and not just large machines like cars or power stations. I also include among tools productive institutions such as factories that produce tangible commodities like corn flakes or electric current and productive systems for intangible commodities such as those which produce "education," "health," "knowledge," or "decisions"." (Illich, 1975, p. 20) In other words, all the artifacts of the design process are tools, according to Illich.

Illich described the difference between two basic types of tools. "**Convivial tools** allow users to invest the world with their meaning, to enrich the environment with the fruits of their visions, and to use them for the accomplishment of a purpose they have chosen. **Industrial tools** deny this possibility to those who use them and they allow their designers to determine the meaning and expectations of others."

He argued in *Tools for Conviviality* for the exploration and use of convivial as opposed to industrial tools. He described eloquently how a balance between consumptive and creative activities was necessary for human survival. "People need not only to obtain things, they need, above all, the freedom to make things among which they can live, to give shape to them according to their own tastes, and to put them to use in caring for and about others." (Illich, 1975, p. 20).

The need to balance consumptive and creative ways of living

Just as Illich had predicted, in 2003 we are feeling the weight of living for many years with the output of industrial tools.

Today

Industrial tools

Convivial tools
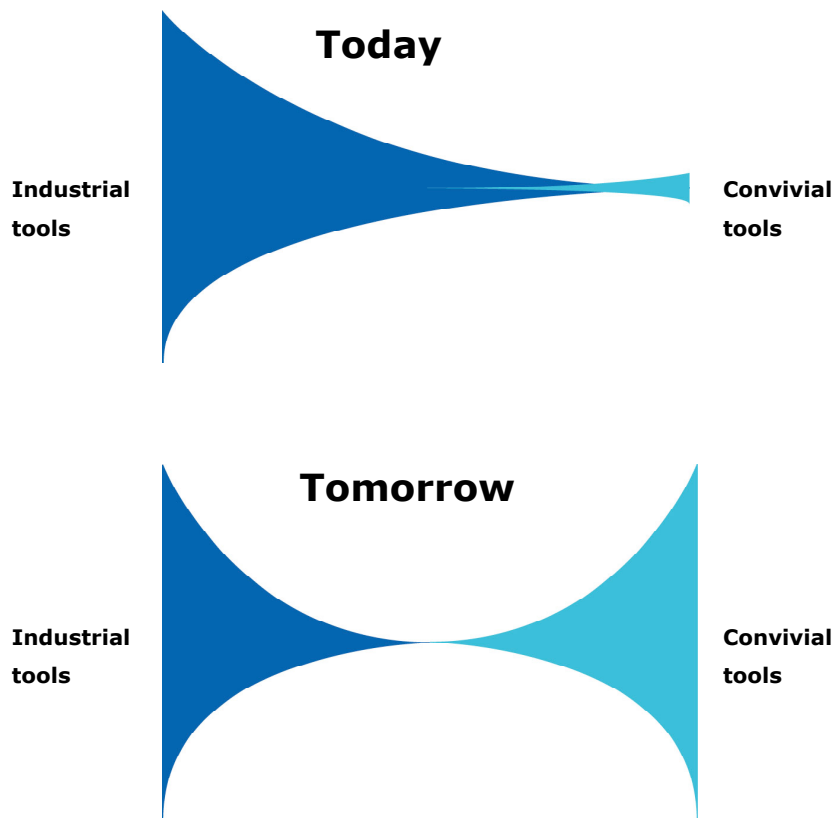
Tomorrow

Industrial tools

Convivial tools

Figure 2: There is a need to balance the use of industrial and convivial tools

The diagram at the top of Figure 2 shows how much the industrial tool mindset predominates today, overshadowing the convivial tool mindset. The diagram at the bottom of Figure 2 shows how the situation could be in the future with a better balance between the use of industrial and convivial tools leading, as you will see, to a balance between consumptive and creative mindsets.
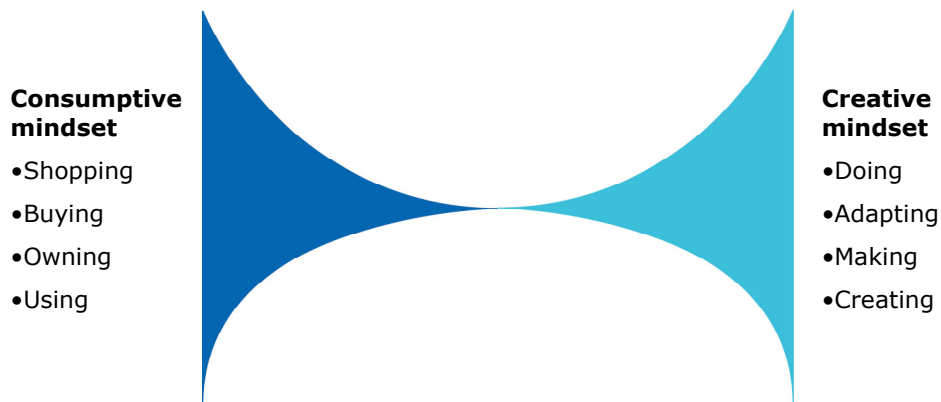
Figure 3: Everyday activities of consumption and creativity

Figure 3 shows the everyday activities that characterize the consumptive and the creative mindsets. The consumptive mindset is characterized by the activities of "customers and consumers" who shop for, purchase, and use goods and services. The creative mindset is characterized by a different set of activities that will be described shortly.

What does the contrast between consumptive and creative living reveal about the field of design? It shows that currently we are far better at serving consumption than we are at serving creativity.

We already know how to use our design skills to fulfill the demands of the consumptive mindset.

– We know how to design brands and create retail environments to promote shopping
and buying.
– We have learned how to evoke and sustain purchase behavior through advertising, naming, and packaging design.
– We know how to do user-centered design and conduct usability testing in order to make interfaces and Websites that are easy for people to use. In fact, we can even

make inhuman combinations of technology (such as a combination cell phone/PDA/video camera) somewhat usable.

– We know how to design objects, artifacts, and spaces that people desire to own or live in.

But we don't yet know how to use our design skills to fulfill the needs of the creative mindset.

– How can we use design to make people's productive activities more fulfilling?

– Can we learn to "underdesign" so that everyday people can continue the design process and make the product, artifact, or space suit their needs?

– How can we encourage everyday people to move to higher levels of creativity? Will they need to be encouraged to do so?

– How do we build scaffolds (Sanders, 2002) or frameworks on which people can make their own experiences? What is a scaffold? What does it look like?

– What are convivial tools? How will they be different from the tools we have on hand today?

– Will new technology be used in the creation of convivial tools? How?

– What will everyday people come up with when convivial tools are put in their hands?

The development of everyday creativity

There are at least four levels of creativity that everyday people seek. The four levels follow a developmental path from doing to adapting to making and finally to creating. The chart below shows the primary differentiating characteristics of each level.

Level of creativity	Motivations	Requirements
Doing	To get something done / to be productive	Minimal interest Minimal domain experience

Adapting	To make something on my own	Some interest Some domain expertise
Making	To make something with my own hands	Genuine interest Domain experience
Creating	To express my creativity	Passion Domain expertise

Figure 4: The four levels of everyday creativity follow a developmental path

The most basic level of creativity is **doing.** The motivation behind doing is to accomplish something through productive activity. For example, people have told us that they feel creative when they are productively engaged in everyday activities such as exercising or organizing their homes. Doing requires a minimal amount of interest. The skill requirements are low as well. Many of the goods and services offered to "consumers" today can be said to satisfy the doing level of creativity. They come to the consumer readymade. For example, in the food preparation domain, a doing activity would be to buy or select a prepackaged microwave entrée and prepare it for a meal.

The next level of creativity, **adapting**, is more advanced. The motivation behind adapting is to make something one's own by changing it in some way. People might do this to personalize an object so that it better fits their personality. Or they might adapt a product so that it better fits their functional needs. We can see adaptive creativity emerging whenever products, services, or environments don't exactly fit people's needs. Adapting requires more interest and a higher skill level than doing. It takes some confidence to go "outside of the box." In the food preparation domain, an adapting activity might be to add an extra ingredient to a cake mix to make it special.

The third level of creativity is **making**. The motivation behind making is to use one's hands and mind to make or build something that did not exist before. There is usually some kind of guidance involved, *e.g.,* a pattern, a recipe, or notes that describe what types of materials to

use and how to put them together. Making requires a genuine interest in the domain as well as experience. People are likely to spend a lot of their time, energy, and money on their favorite making activities. Many hobbies fit in this level of creativity. In the food preparation domain, an example might be to create an entrée using a recipe.

The most advanced level of creativity is **creating**. The motivation behind creating is to express oneself or to innovate. Truly creative efforts are fueled by passion and guided by a high level of experience. Creating differs from making in that creating relies on the use of raw materials and the absence of a predetermined pattern. In the food preparation domain, for example, making is cooking with a recipe, whereas creating is making up the recipe as you go and having to improvise along the way when you discover that you have run out of a key ingredient.

The path from doing to adapting to making and finally to creating develops in the individual over time and through experience. All people are capable of reaching the highest level of creativity, but they need the passion and the experience to do so. Consequently, people differ in the level of creativity they attain in different domains. In fact, they may find themselves at all four levels of creativity simultaneously in different domains. For example:

- Someone may be perfectly satisfied with being at the doing level in the area of food preparation, *e.g.,* eating take-out food or heating frozen entrées;
- While at work they have modified their workspace with many items that speak to their personality; and
- At home they spend much of their spare time building their own online gaming community.

The emergence of new design spaces

We cannot use the design tools and methods that have served the consumptive mindset for so many years to serve the needs of the creative mindset. New design spaces are evolving and are now beginning to emerge. Figure 5 shows this transformation.

Design spaces	Everyday activities
Design for consuming	Shopping, buying, owning, and using
Design for experiencing	Doing and using
Design for adapting	Adapting, modifying, or filling in
Co-creating	Making and creating

Figure 5: New design spaces are emerging in response to people's needs for everyday creativity

We are currently in, and have been for the past 50 years, a design space focused on consumptive activities such as shopping and buying which leads to owning and using. The **Design for Consuming Space** will always exist, but will be joined by new design spaces along a continuum of creativity.

Companies tend to be fixated at some point along this developmental continuum. Many manufacturing companies are positioned in the Design for Consuming Space, with a focus on producing products that people will choose to buy. In fact, this emphasis on consumptive activities has resulted in products such as multifunctional technology devices (*e.g.,* a cell phone/PDA/video camera) that have so many features and functions that they are difficult to use. In the Design for Consuming Space, it is important for your products to have more bells and whistles than your competitors' products, whether people will use these features or not.

A **Design for Experiencing Space** is emerging now most notably in the domain of interactive media. A new class of practitioners who call themselves user-experience designers claims to be able to *"design experiences."* Although this is highly unlikely (Sanders, 2002), the movement is nevertheless leading to the emergence of new design tools such as personas and scenarios. For example, personas are fictional people or user archetypes who can be used throughout the design development process to represent real people (*i.e.,* real "users"). Storytelling and scenarios are being used to bring everyday life experiences to

the personas. These user-centered design tools help the design team to keep the user top-of-mind and in the center of the design development process. Although the new tools often suffer from superficiality (*e.g.,* personas may be based on very little research), they are at least a step in the right direction.

At the edge of practice are the newer **Design for Adapting Spaces** that are being discussed mainly in research-based universities, large software companies, and on design-oriented Weblogs. Design for Adapting has been referred to as "underdesign" (Moran, 2002), meta-design (Fischer, 2003), and as "loose fit" design (Rapoport, 1990). The idea is that people can and will fill in the designed artifact to meet their own needs and dreams. In fact, the less you give them, the more they fill in (McCloud, 1999).

How do you design for people to "fill in"? This does not mean simply leaving a product unfinished and then putting it out as a Beta test version so that lead users can find and report the bugs. It goes way beyond that. It means learning how to build scaffolds for experiencing. A scaffold is a special type of communicational space, one that supports and affords creative behavior.

- How do we build scaffolds for experiencing?
- What is "enough" to serve as a scaffold?
- What is "too much" such that creativity is dampened?
- How can we use the inherent properties of ambiguity (Gaver et al., 2003) to serve the adaptation process rather than to confuse it?

Design for Adapting is a new design space that begs to be explored. It is a space where we must acknowledge the creativity on the part of everyday people.

Beyond the edge of practice are the **Co-Creating Spaces** where designers and everyday people work collaboratively throughout the design and development process. Co-Creating Spaces will be especially important in highly complex domains in the future. Designers can make a significant contribution toward these domains if they are open to new forms of collective creativity and if they respect the levels of creativity of the domain experts.

Frequently asked questions

When designers consider the emergence of these new design spaces, they tend to ask questions such as those that follow.

Are we losing control of the design process?

Yes, we are losing control of the traditional design process, but we are at the same time opening it up to others. We are entering new design spaces where we let go of our control in order to amplify the creativity of other people.

Designing in the new spaces will require new design processes and a new attitude about everyday people. We will learn to acknowledge that they are creative and especially so when they are working with us in their areas of expertise or passion. We must learn to be humble in our interactions with everyday people since they are the experts on their own experiences. We must become comfortable in our humility.

How much do we want everyday people to drive design?

Everyday people should drive the design process to the extent that they are capable and willing. If they are at a high level of creativity in a domain, then they should drive the design process. If they are at a low level of creativity, on the other hand, they will probably be content to consume what we deliver.

What will we need to know for designing in the future?

The design team needs to fully understand the experience domains of everyday people (Sanders, 2001). This understanding includes their relevant past memories and experiences, their thoughts and feelings about their everyday experiences, and their dreams and fears for the future. To the extent that we are co-designing with everyday people, however, they can represent themselves directly in the design process.

How will the composition of the design team change?

It is the attitude more than the academic training of the design team members that is crucial. If the team members do not believe that everyday people are creative and can contribute at the front end, the new design spaces will not grow. People trained in the social sciences are often more open to the potential creativity and abilities of everyday people. We can expect the proliferation and integration of social scientists into the new design spaces. This is already apparent in the Design for Experiencing Space.

If everyone is creative, then what is the role of the designer?

Designers will learn to use their own creativity to amplify the creativity of other people. Scaffolds are communicational spaces that support and serve people's creativity, enhancing the conviviality of their lives. In the future, designers will be the creators of scaffolds upon which everyday people can express their creativity.

How will the tools and methods for research and design change?

As we invite everyday people into the design process, the tools, rules, and methods for research and design will begin to blur. For example, personas and scenarios are tools both of research and design. In the future, research will become more creative; design will become more rigorous.

How will we evaluate the results?

The ultimate way to evaluate the effects of design is in the betterment of people's lives. If we, as designers, can improve the conviviality of human experience, then we will have succeeded in our efforts.

What is next?

We are entering new design spaces. The old design space will be surrounded by new human-centered communicational spaces. The communicational spaces of tomorrow will be filled with everyday people co-designing with us. These spaces will be living, thriving, diverse, and probably somewhat messy. And that is OK.

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