Hack the Experience: Tools for Artists from Cognitive Science

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Your Cognitive Toolbox

This section introduces a set of tools for shaping the way visitors conceptualize the designed experience.

Our conceptualization of an experience is tightly integrated with spatial and temporal organization. Modifying spatial and temporal elements will shape the way people conceptualize an experience, and the following tools relate directly to the cognitive processes at play as people move through time and space.

Tools like image schemas, cognitive simulation, mental imagery, viewpoint, embodiment, motion, and perception converge and integrate in our reasoning about time and space. These tools also integrate in our emotions and they structure the language we use to describe an experience.

These tools will help you structure the way you use attention in your intervention and will provide a way to blend together the spatial structure of your intervention with the content that you want to convey. Each of these concepts have their own dedicated descriptions, but they also each feed into each other. It makes sense to slowly incorporate these concepts into the text where they feed into each other. You’ll read about these tools before you actually come to their respective dedicated descriptions, this approach helps you slowly build up familiarity with concepts, and then the dedicated descriptions provide the answers to the questions that the gradual introduction of concepts raised along the way. So, use this overview as a glossary if you get confused by a term before you reach its complete description. With that in mind, let’s briefly look at these concepts before exploring how to use them:

**Language is a cognitive interface** that can help us see something about the way that a person processes an experience or piece of information. We can also use language to shape the way a person experiences the designed world. Language is one of the easiest ways that we can describe our experience and it is used for structuring our experiences through the use of embodied concepts. Language is particularly useful in translating abstract experience into concrete embodied concepts through the use of schematic structures and conceptual metaphors. Language also makes a good interface for penetrating the mind during the hacking activity by way of prompts and didactic scripts that frame the experienced scene. All of the following tools show up in the structure of our physical world, in our abstract experience of that world, and in the language we use to describe the physical and the abstract. Language is pervasive, and as a pervasive part of our ability to think and process the world, language lends itself as a ready tool for shaping the way people experience our designed worlds.

**Schematic structures** (Tool #1) provide a way to understand experience of concepts in the world. They help us form concepts to reason about the abstract world with concrete notions like direction, movement, containment, often represented with arrows, shapes, and lines. You can use schematic structures to plot basic narratives, flows of energy and sensory encounters.

**Cognitive simulation** (Tool #2) happens when some real world experience (e.g., motion) is simulated in the mind, providing a simulation framework that enables reasoning about the physical world or about abstract ideas. Cognitive simulation often involves schematic structures (e.g., directionality of motion) and involves attention patterns. Think of it as a moment of heightened awareness. Moments of cognitive simulation can serve to anchor an experience.
or to push the narrative of an experience forward. It is an emergent property of the organization of viewpoint.

**Viewpoint** (Tool #3) occurs with a major distinction between participant viewpoint and spectator viewpoint. Participant viewpoint is first-person and immersive, whereas spectator viewpoint is third-person and provides a vantage point for summary scanning. Viewpoint is different from perspective and serves as a framework for perspective. You can use viewpoint to shape a story, to create disorientation and orientation, or to build rhetorical effects into your design.

**Embodiment** (Tool #4) provides the basis for encountering and reasoning about the world. The body grounds our ability to reason about abstract ideas by relating them to our physical environment. It argues that we can think with our actions and that our bodies are part of our minds. If you can change something about the way someone experiences their body, you can change the way they think, because the body is a mode of thinking.

**Motion** (Tool #5) is a mode of being in the world. It is a skill that we use like an interface with the world around us. Motion gives structure to some of the ways that we reason about the world, and by intercepting those structures we can modulate experience along various dimensions, including orientation and disorientation, as well as viewpoint and attention. Motion also acts as a means of expression whether through meaning systems of gesture, body language, and dance, and is also, obviously, the way that people move through your designed environment.

**The Senses** (Tool #6) are the means we have for enacting **Perception**, and include visual (sight), auditory (sound), haptic (touch), olfactory (smell), and gustatory (taste) channels of sensory attention. Perception is the recognition of difference and variation in sensory data and we use it to identify meaning about the world and to understand symbolic content in the world as a relation of signal to noise. The senses oscillate data in figure-ground relationships as they are perceived. This helps us make sense out of space and time, influences memory, and contributes to emotional states and moods.

**Emotions** (Tool #7) are temporary experiences that we use to make meaning out of how we feel. They exist as salient elements of experience set against a pervasive background mood.

Some of these concepts might be new to you and you may be familiar with others. Take your time to let them sink in and refer back to these brief descriptions to clarify and remind you if you get confused. Ultimately, these concepts provide a set of tools that will help to structure the approaches you take during the design process of your experience. After working through these concepts you will be able to decide which ones are right for your project and which ones to save for later. These concepts will help you build your experience by enabling you to:

— choose a basic story and have a goal for your experience;
— provide your audience with a framework for inquiry into the sensory world;
— pair two or more sensory systems, viewpoints, conceptual models, physical systems, or elements of embodiment;
— couple that experiential pair with mental, emotional, or physical information;
— introduce a pattern of when and how specific sensory systems are active or activated;
— let your audience determine some element of their experience;
— create engagement points for triggers, feedback, openness, and bodily responses;
— use these engagement points to build your story or reach your goal;
— shape experience in the simplest ways for maximum effect;
— capture, focus, and direct attention through space, time, and information;
— use distraction appropriately by eliminating or creating it as it fits your story/goal;
— document your work as thoroughly as possible/necessary; and
— offer a memorable or insignificant experience (as determined by your desired goal).

Let’s now look at these concepts in depth.