Hack the Experience: Tools for Artists from Cognitive Science

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Story, World Building, and Belief

**Blending Concepts to Tell a Story**

A young mermaid has a problem. She’s in love with a human prince but she can’t be with him because she isn’t a human — she is a mermaid stuck in the water. To solve this problem, she seeks assistance from a witch who temporarily gives her legs in exchange for her voice and (depending on which adaptation of Hans Christian Andersen’s story you read) if the mermaid can get the prince to kiss her, then she can keep her legs for good. Now her problem is that she can walk on land, but she can’t talk, and the story keeps unfolding.

All of this story unfolds naturally because of one detail: mermaids are a blend of a woman and a fish. The entire plot of this story extends from this single fact, from the exposition to the rising action to the climax and the resolution. Each plot-advancing mechanism ties directly to the details of this hybrid blend.

Conceptual blending (Fauconnier and Turner 1998) brings insight into this story and gives us a framework we can use to tell our own stories through our engineered experiences. In traditional conceptual blends, there are two inputs that blend together to produce an output. The blended concept has some of the traits of each of the inputs, but not all of the traits carry into the blended space (just like you don’t inherit all of the traits of your mother and father). To get a little more technical, blends have two different types of input spaces: a regular input space and a reference space. The reference space is the dominant space that drives the structure of the blend.

We can think of the Little Mermaid as a blend with the input space of woman and a reference space of fish blended into a mermaid (Figure 12). This sounds simple. Vital relations between the input and reference spaces carry traits down into the blend and our mermaid has the characteristics of those relations. Surprisingly, in this case, the elements from the input and reference spaces that do not make it into the blend now become plot building spaces. The things that don’t blend work to advance the narrative. For instance, in the mermaid blend, the little mermaid does not have legs (because mermaids don’t have legs), and legs did not carry down into the blend from the woman input space. This fact that she does not have legs becomes a problem for her, and her limitations are what challenge her in her own life story. Legs do not carry into the blend (unless the blend is Magritte’s *Collective Invention*, in which case you end up with a different blend and an altogether different storyline) and their absence advances the plot.

This leglessness becomes a point for interesting things to happen in the story, and Hans Christian Andersen was probably thinking: “Okay, so she doesn’t have legs, so I’m totally going to put her in a situation where she can only succeed if she does have legs.” The point is that certain elements that don’t blend into the character of the story can be exploited later to make the story fit with the situational limitations of the character. And certain elements that do blend into the character provide character development in the narrative as well as the footholds for plot advancement that character traits often afford.

In designing experiences that have narrative elements to them, the way to make the story relevant to the audience is to enable members of the audience to see themselves in the story by letting them blend themselves into the story (think about role-playing games and first-person shooter games). Then, as the story unfolds, each audience member experiences the story in different ways be-
cause their inputs to the blend are unique to themselves and the resulting blend is an idiosyncratic match to that individual because of their life experience and how they interpret the story based on that life experience. If you’ve ever shopped at an IKEA, you understand how a retail space can blend you into some experience.

When you walk into an IKEA and climb the stairs to the display area, you walk into a domestic environment designed very much like a house in which all of the rooms are decorated like film sets, catalog displays, or even like your own house. You walk through the entire showroom, passing through living rooms and kitchens and bedrooms and bathrooms, the whole time imagining what they would look like in your house.

IKEA blends the real experience of shopping with the perceived experience of ownership and habitation. When you stand in one of the kitchens at IKEA, you are experiencing a possible future as if it is already present—the simulated kitchen performs a sort of compressed time travel that lets you experience the future for a few moments to help you see how you will be happy when this kitchen you are standing in is in your house. It blends the retail space with the domestic space, momentarily ascribing ownership of the kitchen to you and letting you elaborate on that idea in your own mind. Perhaps you think about entertaining guests and you begin to let your mind tell you a story about your life if only you had that kitchen. And it isn’t just you: other shoppers also blend themselves in with these same display scenes, so that everyone is collectively imagining how these showrooms can be part of their lives, and it is an effective sales tactic for IKEA.

Building experiences that feature blends gives audiences a place to enter the story. Each individual in the audience will experience their own version of the blend, and they do the work to contextualize your story within their own life experience. You’ll have to figure out where you will build doorways into the narrative, and you should also provide multiple entry points, but let the audience actually open the doors themselves. The audience can be asked a direct question about how your engineered experience fits with their lives or they can be subtly led into viewing how it fits with their lives by creating a scene that is relatable. Throughout the experience, the audience can be given choices and their preferences will be amplified in the story and experience, especially if emotive content and empathy-inducing elements build portions of the experience.

If something is believable and it is something that people can relate to, they will experience moments of empathy in which they can share other individual’s feelings. When I read Hemingway’s “Hunger Was Good Discipline,” I entered the literature empathetically because I know what it is like to walk around a city and I know what it is like to be hungry, and even more, I know what it is like to walk around a city while I am hungry, and what it means to smell food and be unable to have the food that I am smelling (smells wafting from restaurants, summer grilling in a park). So I join Hemingway as he walks around Paris trying to avoid good-smelling food throughout the day. My experience of the world blends with Hemingway’s described experience in reading his story, and because I can relate to it, his story has more meaning for me.
Everyday Blends
Blends are not necessarily extreme hybrids of two things like fish and women; they can be banal, like a blend of a married man in one input space and a bachelor in another input space (Figure 13). In the narrative that extends from this blend, there is a man who is married but still acts like a bachelor or who has loutish, prototypical bachelor desires despite being in a committed relationship. If these behaviors manifest themselves in his marriage, they potentially create strife between his spouse and his desires, or they build frustration in his spouse, or he neglects his spouse, or perhaps he is unfaithful to their exclusivity, etc. All of these points of tension can turn the arc of the plot in new directions, and all of those tensions stem from what was or wasn’t carried into the blend.

In critiques of blending (Gibbs 2000), one of the primary concerns is that blends happen everywhere and so they don’t have the ability to explain something unique about cognition—if everything is a blend, then blends are meaningless to science because they don’t show us something we don’t already know in a way that is falsifiable and which can’t be explained by other theories. Conceptual blending in this view can only be descriptive, and not explanatory. Gibbs’ description-only view of blends led me to begin to think about how I could use blends not just descriptively, but productively, as tools of creation that can model change, progression, and feedback loops. In this new productive view, blends seem more like a process engine ready to be harnessed into a process of combinatorial creativity.

Modeling Change and Narrative Progression with Blends
A narrative can be centered around a single blend, or it may be a combination of different blends, or it may be a sequential progression of blends that refine the original blend like a series of feedback loops. Blends also fit into temporal timelines and can chain together to model various changes in the narrative. In the bachelor-husband model, ideals from bachelor life were not discarded nor unlearned as he moved through his various roles as boyfriend, fiancé, and spouse, so he retains his bachelor traits. However, if something in the bachelor-husband’s life causes him to rethink his behavior, the blend can change.

Perhaps something happens in the bachelor-husband’s experience to cause him to reevaluate his behavior (it could be the consequence of one of the points of tension from something not carried into the blend), and he changes his behavior during this learning experience—perhaps he seeks advice from a counselor who helps him see that his behavior as bachelor-husband needs a different benchmark (e.g., a role-model-husband). At this point, bachelor-husband (with all of his baggage) is the input space, and role-model-husband is the reference space, and a new blend emerges that combines the two, and maybe in this blend, the bachelor traits don’t carry into the new blend and the fact that the bachelor traits don’t carry into the new blend represents a transformation in the story. The blend models the progression of a learned experience. If the original blend is changed so that the ideal husband is now the reference space and the married man is now the input space, then the
story that emerges is different altogether—that of a “responsible” husband. The point of this illustration is that blends change, they adapt to new information, they can learn and progress and evolve, they always generate based on the inputs to the blending process, and the resulting blend often is greater than the sum of its inputs. This adaptation capacity makes blends useful for dynamic experiences and user-driven narratives.

**Questions for building blends into your experience:**
- What is the overall story of the experience you are engineering?
- How do other people enter the experience?
- Will you have people bring their own emotions or knowledge to the experience?
- What relationships do you intend to form between the input brought from audience members and the reference space provided by the structure engineered into your experience?
- Which relations carry into the blend? For example, as people try to relate to your experience, which things will you permit them to carry into the experience? For example, your experience may require people to focus on the prototypical model of motherhood (birth mother) without thinking about other models of motherhood (nurturance, adoptive, biological mother, donor mother, genetic mother, etc.). Your audience will have varying experiences with their own mothers, some of them will not know their birth mother, some of them might know their genetic mother, but not their birth mother (as is the case with many surrogate pregnancies), some of them might consider a woman other than their birth mother to be the woman who nurtured them as if she were the mother. Since motherhood as a concept has many different models, it is important to clarify the model you are using in your blend. This applies to any concept with multiple models.
- How do the non-inherited elements contribute to plot development in the experience/story?
- Does the audience blend with the experience?
- If you are building an experience that blends two different ideas, how does the blend tell your story for you?

**Designing Blends for Your Experience**

It might seem difficult at first to design an experience around a blend, but think about it this way: you can turn a blend into a story, and it’s easier to think about designing an experience around a story. Because a blend can turn into a story that ties the experience together into a cohesive experiential narrative, it is useful to at least play around with how your concepts might be turned into blends, or how they might already be blends of two or more concepts. The way blends have been present here is slightly different than their traditional role in cognitive science which uses blends to analyze the world. In this context blends are being used productively to create the world. In this way, it is a kind of combinatorial creativity and it becomes a simple engine for a kind of generative art where the story line is the generated product.

In their most basic form, blends are combinations of elements that produce something novel—sometimes the blend is mundane (like a fork/spoon spork, or a retail space like IKEA) and other times the blend is pyrotechnic (like a mermaid, or an atheist megachurch). How you bring blends into the structure of your experience is up to you, but their inclusion should always be motivated by how they serve the story.

It is always good, and perhaps unavoidable, to have your audience members be one of the input spaces in the blend. They bring their identities and context to the designed experience and the act of engaging in the experience itself can become a simple blend. They come as inputs, you provide another input, and you help them create mappings between their experience and the input you want to blend with them, and as the experience progresses, they carry some of their own details and relationships into the blend with some of the details and relationships you have provided. As people continue on in their day-to-day lives, the blend created by your engineered experience will manifest itself in how those people encounter
elements of their existence apart from the engineered experience. They have been changed through the process of blending with your intentions in the experience. For instance, maybe someone thinks about owning a drawer organizer every time they open their kitchen drawer because they saw one in the IKEA showroom. The next time they go to IKEA, they buy one and organize their drawer. IKEA blended organization into the story of what it means to be at home in a kitchen and when that person went home to an unorganized kitchen drawer, they were struck by their lack of organization in a fresh way. This leads to a discrete action, and IKEA made a long sale because they sold you the idea of organization during your previous visitor experience in their blended showroom.

To get you started on thinking about ways to blend experiences for people, consider the following list of some basic possible combinations that you can craft. In order to create a blend, find some combination of the familiar and unfamiliar and start thinking about the possibilities. You can:

- provide familiar experiences (patron past experience blends with familiar experience);
- provide unfamiliar experiences (new to patron);
- provide unfamiliar experiences in familiar settings;
- provide familiar experience in unfamiliar settings;
- bring together familiar elements;
- bring together unfamiliar elements;
- bring together a familiar element and an unfamiliar element;
- and/or
- bring together elements that are different along some dimension.

If you provide a familiar experience, patrons know the general script of how they are supposed to behave. This provides a kind of comfort that might help to disarm patrons and drive them towards moments of openness. The IKEA showroom experience is familiar because it is laid out as a domestic space. Watch people in the store and you will see that they have no inhibition of “playing house” in the showroom. People will lie in beds, sit around dining room tables, pretend to cook, pretend to shower, and sometimes they will actually groom themselves in bathroom mirrors.

No one does this sort of thing in traditional furniture stores. The difference is the tight cohesion of the familiar domestic space offered in IKEA showrooms: this familiarity is comfortable and people let their guards down and move toward moments of openness where they try out products in highly personalized ways to see if they like them. IKEA creates openness in people by making them feel at home, and that openness results in more sales.

If you want to provide a ceremonial or ritualistic experience, choose between providing a familiar experience in an unfamiliar setting and an unfamiliar experience in a familiar setting. Consistency and formulaic order are components of ritual structure that separate the organization and intentionality of the ritual act from the way that we approach the rest of our everyday lives. Ritual is a practice that brings new meaning and order to the world of the everyday experience, and blends of the familiar and the unfamiliar can bring a ritualistic approach to an experience. A familiar experience in an unfamiliar setting rips the familiar practice from its context and places it in a new setting, which can make the familiar experience seem out of place and otherworldly. On the other hand, an unfamiliar practice in a familiar setting heightens attention to the new practice and may evoke states of mindfulness to the newly unfamiliar practice. For example, following a recipe for the first time often elicits mindful behavior with thorough attention to the precision of measurements and the temporal sequencing of activities. Although not an exact match, in many respects this attentiveness to details while cooking a new recipe looks very much like a ceremonial practice.

Other types of blend experiences might include giving people the experience of living somewhere else, of having a different sort of body, of having the sensory abilities of a particular animal, of having the viewpoint of another patron, of having secret knowledge...
about someone else (voyeurism, surveillance, monitoring), assuming a different lifestyle or standard of living, transportation through time (past & future), and switching roles. This is not an exhaustive list of ideas, because in the combinatorial blend, anything can be blended with anything else. The better blends for engineered experiences may be the ones that feature tighter integration between patron and the engineered experience, because they weave the patron into a tighter relationship to the plot structure of the experience story.

Entry Points in Story
The audience needs to be able to enter the story at some point. Building portals into the story will let the audience blend with your designed story, creating their own experiential blend. They will bring the context of their own lives into this experience blend. The touch-points for entry into the narrative could be as simple as giving people a choice as to where they start off in the story, or which character’s viewpoint they want to inhabit, or letting them choose a set of words that they relate to as a way of helping identify which character they might best empathize with, and then letting them enter the story world.

Basic Plots and Baking Story into the Experience
People recount their experiences to each other by telling stories. Stories are the medium for memories and they are the tool for sharing and communicating. If you want your experience to stand out and become a memory, try pre-scripting the experience to be easily told as a story. You can help people understand your experience if you help them experience it as a story. Experiences that make good memories also make good stories, and it is easier for people to tell stories about something that they experience in story form because you’ve pre-loaded the memory and the telling with the narrative arc or plot that you have chosen as the framework of your designed experience.

“The intelligent read, the wise read literature.” Supposedly Edgar Allen Poe wrote that, and the lesson I take away from this quote is that reading literature might give you a better chance at understanding how to make something meaningful, because you have better insight into the experiences of life as told in traditional narrative form.

With this in mind, learning about plots and learning about story are important parts of designing experiences. If you do not understand story, search the internet for examples of plots in film and literature and then watch those films and read the books to
see how plots unfold. You do not have to be a literary critic to design an experience, but it does help to know how plot can be used as a tool for storytelling. You may already have an intuitive sense of plots and may recognize plots by their names. Booker (2004) outlines what he believes are the seven basic plots: overcoming the monster, rags to riches, the quest, voyage and return, comedy, tragedy, rebirth. Tobias (1993) lays out twenty basic plots, including: quest, adventure, pursuit, rescue, escape, revenge, the riddle, rivalry, underdog, temptation, metamorphosis, transformation, maturation, love, forbidden love, sacrifice, discovery, wretched excess, ascension, and descent (and at the end of each chapter he provides checklists to use when writing these plots, which are useful in building stories that traditionally work well). Other researchers claim there are upwards of sixty basic plots. While you might know the general trajectory of a plot structure by looking at its name, do a little research and build lists of events that can happen in the specific plot type so you can see what kinds of twists and turns you can use in the storyline of your own designed experience.

If plots don’t seem to work for the story you are trying build into your experience, try to at least structure your story around the basic elements of drama (Burke 1969): five simple parts of story rhetoric that make it easy to break up the world of your engineered experience. The elements are act (what), scene (where/when), agent (who), agency (how), and purpose (why). They are similar to Spradley’s descriptive question matrix (Table 1) and account for the same content. Earlier, the domains were presented to help you figure out how to break up the experience into manageable layers. These dramatic elements and plot structures are presented to help you figure out how to make a story happen in the space, with the participants, over a stretch of time, toward some goal, using some story that ties it all together. This is a focused view on building story into the design of the experience up front.

Think about the general structure of traditional narrative: it is kind of like a linguistic Rule of Thirds. In the same way that an object of importance is highlighted in one of the points of salience in a photographic image, the climax of many traditional narratives happens two-thirds of the way through the book. Climax fits a third of the way through (Figure 14). On the surface, discourse structure and spatial structure share a pattern of salience. Nontraditional linear narratives enable you to move information around, placing the salient portions in other thirds—early or late, top or bottom—and then filling in the details according to the arc. Note that this is not the same as a non-linear structure, which plays with chronological ordering by creating disjunctions in time.

**Storytelling through Oscillation: A Case Study**

I remember the eruption of Mount St. Helens in 1980. As I watched the aftermath on a television screen, I did not yet know what I was seeing. Everything looked gray. Everything looked dirty. I did not know what pyroclastic ash was, and I did not know what a volcano was. I was not old enough to talk or understand words, but I was old enough to know something was wrong.

I recently spent five days in a photography gallery at the Cleveland Museum of Art looking at a collection of 47 photographs taken by Frank Gohlke (Image 18) and Emmet Gowin (Image 19) over stretches of time in the aftermath of the Mount St. Helens eruption. The curator, Barbara Tannenbaum, had brought together these two artists who had worked individually to photograph the aftermath of the 1980 eruption, and she had arranged them in a way that captured the confusion I experienced as a child. Originally, I set about analyzing the exhibit to figure out why it worked as such a visceral memory-evoking experience, but what I found is interesting because it is not just a case study of an exhibit playing with my memory. Rather, this exhibit leveraged people’s general perceptual and image-schematic experiences to evoke responses appropriate for the scale and scope of the disaster.

**Using Oscillation to Create a Sense of Instability**

The curator created a sense of disorienting instability by arranging the images in particular sequences, sequences which oscillated
between a set of dimensions including: authorship (who took the picture?), chronology (when was it taken?), viewpoint (was it primarily spectator or participant oriented?), subject (what precisely was in focus in the image), and composition (how the images were internally structured). Systematic oscillation between these dimensions produced instability that gave the exhibit a sense of constant dynamism in the overall narrative of the exhibition.

What became evident as I studied this exhibit was that the arrangement of works was key in highlighting the volcano as a force in creating an unstable scene. Inside this gallery, the volcano became an actor in a story that confused and disoriented its audience through the series of oscillations, and this became apparent to me when I collected data on the content and composition of the images and how those images were arranged in the gallery space.

**An Unstable Scene**

The Mount St. Helens exhibit presents a non-chronological arrangement of images, and the images were not grouped into categories in the way that a natural history exhibit might have done (e.g., images of eruption, images of flowing lava, etc.). Instead, the images were arranged in a loose sequence that highlighted the instability and unpredictability of the volcano. There were occasional clusters of images arranged around comparisons (of factors like time, location, and scale). What this produced was a storyline of uncertainty and continual destruction. The curator captured the disorienting effect of this instability by returning spectators to familiar scenes in an almost rhythmic sequence. The instability is evident in the constant oscillation between calm and chaos.

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**Table 7. Authorship:** Emmet Gowin (EG) vs. Frank Gohlke (FG).
**Table 8. Chronology:** 1980–1990.
The clusters of categorically related images return the viewer to the awareness that the exhibit is curated and that there is intentionality behind the presentation of images. These clusters act as points of departure from the continual sequence of instability, and also serve functions like advancing the narrative, zooming in, zooming out, and providing scope by means of windowing locations that are scattered near and far from the volcano’s crater.

**Methods**
Several layers of analysis were used to categorize each of the 47 images. These layers included the spacing and grouping of images, the chronological order of the images, how images were sequenced in the exhibit space, image titles, the direction of view within the images, the composition techniques, the use of the horizon line, the use of path and path shape, viewpoint, the use of image features to orient or disorient the viewer, the use of exhibit arrangement as a tool for orienting or disorienting viewers, didactics and maps, the use of figure-ground organization in the images, the use of the schematic directionality of implied motion or terrain structure in the images, the sequencing of images shot from air or ground, the presence or absence of the volcano in the frame, and finally, the agency of volcano (quiet, active, trace activity, or unknown agency). Following this data collection, informal interviews with the curator were conducted to confirm and refine the analysis.

**Overall Description of the Exhibit**
Approaching the gallery, the viewer encounters a floor-to-ceiling banner with a representational image of Mount St. Helens and the title of the exhibit (other text is visible, but not legible from this distance). Walking into the exhibit, the viewer turns to the left to see the first image in the exhibit.

The viewer moves from a summary view of the wounded volcano (1), to two photos that describe the slope of the crater (2, 3), and then a view of the valley, as if to set the stage for the story (4). Here is the main character, and here is the setting. The next four images are near views of debris flow and rivers (5, 6, 7, 8), followed by three images of veining braids of streams and debris flow (9, 10, 11), and then three images of different scope illustrating the massive treefall caused by the blast—first, a view of the side of a hill covered with dead trees (12), second, a sweeping view of a valley with treefall fanning out in a patterned trace of the direction and movement of the blast (13), and third, a near view of dead timber and stumps in an otherwise desolate landscape (14). These are all aerial images that are characterized by a distinctly spectator-focused viewpoint.

At this point, the viewer encounters the main exhibit banner as seen from the doorway. The viewer is now close enough to the banner to read the description of the exhibit and to view a CGI video simulation of the 1980 eruption compiled with archival images from the National Park System. This looped video gives a sense of the massiveness of the eruption and provides context for viewing the images in the show.
Moving past the banner, the viewer reaches a stretch of photographs depicting the devastation of Spirit Lake (15, 16, 17, 18, 19), and then the exhibit takes a turn: up until this point the exhibit has been seen largely from the spectator viewpoint (with the exception of images 12 & 14), but now the sequence of photographs begins to include strong concentrations of participant viewpoint. This new perspective is from the viewpoint of a person walking toward the crater (20, 21, 22, 23). With this change in viewpoint, the images have become larger and continue to increase in dimensional size until the viewer is standing inside the crater at the foot of the lava dome (24). This image of the crater floor is the most palatable image from the participant viewpoint, and immediately to the right of this image is a massive spectator view of the rim of the crater that feels like a hybrid of participant and spectator viewpoint (25). This juxtaposition of the participant and spectator view of the crater creates a dynamic sense of salience for the crater as topic.

The exhibit now begins to concentrate on the deforestation wrought in the aftermath of the eruption—a mix of comparison images (26, 27) and individual images showing dead standing trees, living trees, fallen trees (28), ironic patches of clear-cut forest from logging operations amid forest blow-down (29), a lush forest (30), and a freshly flattened forest (31). The visual scope pulses by providing contextual wide-angle views and then contracts to close-up views of broken trunks scattered in a ravine (32), a scenic overview of a logging area (33), and downed and standing timber covering hillsides (34).

The exhibit crosses again into a view of the volcano (35) and begins to explore concepts of flow while the viewer is presented with images of a river (36), flows of pyroclastic ash swamping huge swaths of land (37, 38, 39), before and after images of scrubby regrowth on ash covered ground (40, 41), and views of dense, wet ash blanketing the landscape under its massive weight (42, 43, 44, 45). The exhibit wraps up with two final views of the volcano (46, 47), the last one being of the intact back side of the volcano, which looks serene and peaceful (47).

**Charting the Sequencing of Images**

The following set of tables help to visualize the pattern of sequencing and oscillation at play in the exhibit. The image numbers are on the horizontal axis (numbered 01–47), and the dimension in focus is on the vertical axis. In all of the tables, the photographer is indicated by grade of color. The tables each look at one dimension: authorship, date, viewpoint, and whether or not there is a horizon line in the image.

**Table 7. Authorship: Emmet Gowin (EG) vs. Frank Gohlke (FG)**

Immediately it is clear that the exhibit is divided up into three segments: the initial segment features the photographs by Emmet Gowin (dark grey), the next segment features photographs by Frank Gohlke (light grey), and the final segment returns to featuring photographs by Emmet Gowin (dark grey). There is the beginning of a rhythm here, and it will be interesting to see how this plays out along other dimensions.

**Table 8. Chronology (1980 - 1990)**

The images were not presented in chronological order, but bounced around over a ten-year time period in a seemingly sporadic manner. There are pairs of images (and one triplet) that occur at the same time, but there are more occurrences of year-switching from one image to the next.

**Table 9. Viewpoint: Spectator (S) vs Participant (P)**

The most oscillation between viewpoints occurred within the set of Gohlke images while the sets of Gowin images were more stable in terms of viewpoint. It is almost as if there are three segments to this story: a long flight around the area (initial Gowin images), landing and walking around the volcano (Gohlke images), and getting back into the plane to get another comprehensive view before leaving the area (the final Gowin images). In effect, viewpoint oscillations in this exhibit provided a strong contextual background and told a story. Sometimes an image contained both viewpoints, and
this is indicated in the table with both the S box and the P box being colored (cf. 33 and 45).

In terms of hierarchy, we could say that there is the exhibit which is made up of image groups which are made up of images. At each level of this hierarchy, we can apply the rule of thirds to see what is salient for that level. This decomposition of the hierarchy also establishes the relationship that each level has to the level above it. If we look at the images in three groups: Group 1 (01–19 by Gowin), Group 2 (20–41 by Gohlke), Group 3 (42–47 by Gowin), it is clear that Group 2 is the salient group at the exhibit level because this group of images focuses most on the volcano from a participant viewpoint, and Group 1 and 3 are background information. At the image group level, the Group 1 and 3 each have bleeps of salience (where the viewpoint switches in 12–14 and 45), while the Gohlke image group is marked by not having any discernible salience (which I would argue is rhetorical). It might be fair to say that the oscillation in this group of images is not principled by the viewpoint variable, and that something else is structuring the oscillation (perhaps some other element of content). Finally, at the image level (not visible in these tables), each image can be judged by applying the rule of thirds grid onto the image and using the rule of thirds in the traditional sense.

The Gohlke images provided a strong part-to-whole relationship with their more frequent switching back and forth between viewpoints. Groups 1 and 3 have strong internal cohesion as stable image groupings where there is little change except for their own bleeps of salience. Group 2 has strong internal cohesion as an unstable image grouping where there is continual change.

**Table 10. Horizon Line: Present (Yes) or Absent (No)**

There is fairly rhythmic alternation between images with a horizon line and those without a horizon. It is as if the horizon line orients the viewer by showing them where they are in the contextual scene before pushing in (zooming in) to focus on an area within that contextual scene. There is a switching back and forth much like the way that people who are coordinating tasks will switch their attention back and forth between the two tasks. The switching is so frequent that the switch becomes an indicator that the change is meaningful. The switching is between two types of images and the rhythmic switching relates the first type of image to the second type as a connecting device in the visual story. In terms of horizon lines, the Gohlke images act as a kind of visual palindrome, having a patterned ordering that might even be chiastic.

**Conclusions Drawn from These Tables**

These tables show how the curator told the story by breaking the exhibit down into several slices or views, enabling something new to be gleaned from the data in isolation. First, the curator was able to create an unstable scene by sequencing the images in ways that built a multi-leveled story. Second, the curator built dynamism into the exhibit by making the most of participant and spectator viewpoints. Third, the curator established the image of the volcano as a topical agent in the story by using certain types of images of the volcano as points of departure into new chapters of the story.

**The Literary Qualities of the Exhibit: Volcano as Agent and Topic Moderator**

A recurring image in this exhibit is the scenic view of the volcano (it occurs in eleven times: 1, 10, 15, 19, 20, 22, 23, 35, 39, 46, and 47). Images 24 and 25 are dramatic views of the volcano mixing both spectator and participant viewpoint together in each image. The volcano image is returned to at several intervals, acting almost as a topic moderator to relate one topic to the next, to turn to a new topic, or to return to the topic of the volcano itself. The image of the volcano helps refocus the viewer in the oscillation between images of the volcano and images of the destruction caused by the volcano.

Moving through the exhibit from the first to last image, the story forays into the devastation in the surrounding landscape, returning to the image of the volcano and its crater to remind the viewer of the source of the destruction. The exhibit begins and ends with the
image of the volcano—the first image shows the “front” of the volcano, with the gaping hole blown away during the eruption, and the final image is of the “back” of the volcano, presumably resembling its symmetrical and undisturbed pre-1980 morphology. This book-ending of the exhibit with images of the volcano almost seems literary and acts to keep the salience on the topic: Mt. St. Helens (the actual volcano itself), rather than on the acts of destruction created by the volcano’s act of eruption. In this way the volcano becomes a character that has active agency in a story.

Other aspects of the exhibit contribute to this literary sense. For instance, throughout the exhibit, the viewer is taken off into the surrounding wilderness to see scenes of destruction and then the viewer is returned to the crater as if to maintain the topicality of the volcano in the discourse structure. It has the biographical qualities of an adventure narrative, and these forays to scenes of destruction serve as character development throughout this exhibit-story.

Perhaps this could be called an out-and-back approach that keeps the volcano as the primary topic, where the viewer encounters a scenic view of the volcano or a reorienting view of the volcano throughout the exhibit. The images used in reorienting the viewer on the volcano share similarities that are worth exploring: first, they all contain path elements and second, those path elements connect two salient points (or figures) in the composition. An out-and-back approach makes sense considering that the flow of information in the overall exhibit is an oscillation, a kind of back-and-forth. And the fact that the composition of the images conveys a path shape for the eye to follow out-and-back only reinforces that oscillation is a rhetorical strategy (both at exhibit level, as well as internal to the composition of images).

I intentionally did not read the description of the exhibit on the main banner (didactic) until the end of my analysis several weeks later. I wanted to see how the exhibit reflected the curator’s intent and wanted to see if the exhibit followed the “show, don’t tell” rule of thumb. After drafting initial findings from my notes I returned to read the banner. Below are two paragraphs taken from the banner (my emphasis):

For months after the eruption, the only access to the mountain was to fly over it. Mount St. Helens was Gowin’s first experience photographing from a plane; Gohlke had shot from the air for one previous project. Gowin, who went on to work extensively with aerial views, said that “seeing that landscape for the first time from the air was a revelation.” Aerial photography extends human vision to offer what seems like a divine or universal, rather than personal, perspective, evoking in the viewer a new relationship to the landscape.

Both artists explored dizzying downward angles where the image fills the entire composition, denying the viewer any horizon line to separate down from up. Many of Gowin’s images first read as abstract patterns, but this was not intentional. “What may look extremely abstract to someone else may look extremely descriptive to me,” he said. The newborn landscape, whether seen in macrocosm from the air or microcosm on the ground, reveals the tracks of the immensely powerful geological and climatological forces that continue to transform it.

This is important because it shows that simple perceptual elements in the photographs, and the arrangement and oscillation of differing types of images, achieved a thematic effect that mimicked the effects that the artists themselves felt during their creative process of “documentation,” or the production of the work itself.

**Discussion**

On one level, the exhibit puts the viewers into the minds of the two artists and creates intense emotional prompts for patrons who visit the exhibit with varying degrees of interest, such that a casual passerby might notice the destruction of the volcano and someone who spends more time looking at the exhibit as a whole understands the sustained destruction. Both the casual viewer and the
dedicated viewer experience a sense of disorientation, but it is not the same disorientation—the casual viewer may not perceive the decade-long time span and still feel that the destruction portrayed creates a sense of disorientation, while the dedicated viewer experiences disorientation over the decade of destruction.

These effects were achieved through the careful organization and presentation of work that other artists did. This is the heart of curation: being able to relate details in order to weave some sort of narrative about the collection and creating a viewing window into a story of some other world of experience. The curator’s use of the oscillation of viewpoint, agency, subject, path shape, and other features created a story of disorientation and sustained destruction in a collection of 47 black-and-white photographs.

At this point, it should be clear that the use of oscillation evokes emotional and cognitive effects in engineered experiences (like curated exhibits in this example), and that oscillation is a useful tool for shaping people’s experience of the world.

**Oscillation as a Tool for Experience Design**

What can be taken away from this case study that makes experience design easier? Oscillation can be used to effectively create disorientation, sustain attention by requiring vigilance to detail and by effectively creating figure-ground comparisons between different features of experience, and it can work to tell a story that both distances the viewer from and also immerses them in details. **In other words, oscillation gives and takes away clarity as a rhetorical tool for advancement on the story line.**

You can use oscillation with any kind of stimuli, and it doesn’t need to be pictures in frames on walls. Oscillation might be changes in light or temperature, or sonic variation in drone tones, or in levels of visual detail and access privileges to information that create participant and spectator roles.