**Abstract**
Rhythms such as traffic lights, our heartbeats, and the sun moving across the sky form the infrastructure and undercurrent of our lives. Because the human mind, in particular the subconscious, is highly attuned to rhythms, we can tap into and engage with them to connect more fully with our surroundings. Rhythms are both natural and artificial, and can provide moments of pleasure as well as more pragmatic applications of communication. The intersection and synchronicity, or lack thereof, of rhythms are critical to engagement. Holistic attention to the interplay between rhythms creates visceral awareness and intuitive connection. Using rhythms as a language of interaction can allow us to transcend our ordinary, everyday activities and bring energy and renewal. My work aims to create a resonance of meaning by building active participation with rhythms through interactive experiences.

## 1. Introduction

I believe that our world can be viewed as a complex landscape built on a series of ebbs and flows; large and small scale pulses of energy that create the background of our lives. These rhythms are the infrastructure of life as it moves. Rhythms are everywhere. They're born of nature, human generated, and can be found in the intersection between what is deemed natural and cultural. The human heart beat. Breath. Rain. Wind. Cycles of light. Blinkers. Traffic flow. Each of these rhythms is there for us to tap into in order to navigate our path of life. This thesis holds as its endpoint a fuller understanding of the world, revealing it as a teeming reality of rhythms based in textures, motion, sound and interconnectivity.

I feel that rhythms can be used as a language of interfacing, a form of synchronization. If seen, felt, or heard they set in motion a dynamic cadence connecting us to our bodies and opening us more fully to our surroundings. They can create a form of holistic attention centering on what exists below the surface of our awareness of routine occurrences. By actively engaging with rhythms, we can participate in them as part of our daily pattern. Rhythms are often revealed via their intersections with and relationships to other rhythms. Combinations of synchronicity and asynchronicity can bring clarity. If we can activate this clarity in day-to-day life, the nuances and details of our everyday activities – the walk to work, the trip to the grocery store, the same ride on the commuter rail – will be recognized, experienced and enjoyed rather than ignored. We can transcend our ordinary, everyday routine by revealing and connecting to the undercurrent of rhythms that surround us.

My design initiative is to bring these rhythms to the foreground through interactive experiences. Each interactive opportunity provides a window to stimulate wonder, ignite phenomenological awareness and challenge routine. If we can reveal, intersect, and change the rhythms, we can shift our awareness to see in a different and unexpected way. The challenge is to make the unseen patterns, rhythms and relationships visible – to take something we do over and over again and to view it anew, with a different sense or from a different perspective. If we create opportunities for new ways of seeing, these recurring events will move beyond the phenomenal level and can become resonant with meaning.

**2. Inter/play of rhythms**

To fully understand the role that rhythms can play, we must explore the nature and occurrences of rhythms. My investigations of rhythms have included observation, research and experiment. The fundamental qualities of rhythms are intervals, sequences, tempos, and durations. The passage of time is a crucial aspect to rhythms. Each rhythm is also a strand in a complex interconnected web of existence, one rhythm interweaving with another. Rhythms range from the very simple to the highly complex. A dripping water faucet establishes a rhythm; the interplay of weather systems and their effect on people's behavior form rhythms; the negotiations of traffic through city streets are also rhythms.

The human mind and body are very tuned to rhythms. We are constantly searching for them. Watching the rain, the snow, a campfire, or a flock of birds does not meet the standard definition of "fun", but the reason we enjoy them is that it connects to something much deeper in us. Rhythms are soothing to us and create a sense of normalcy (Venezky, pers. comm.). The responses to rhythms are basic in all living creatures – plants, animals, indeed nature itself. They are evident in human beings across cultures. "It must be part of our evolutionary heritage, with many of the responses pre-wired at the visceral level" (Norman 1988, 115). When a shift in pattern happens, we notice the rupture, and our awareness map shifts to refocus our attention. Because we connect to rhythms at such a basic, primal level, they seem to be a natural vehicle to explore when considering ways to subtly, naturally create awareness and

reflection.

*2a. Natural rhythms*

Our bodies are filled with countless rhythmic processes. Our heart, one of the most prominent bodily rhythms, beats at an average rate of 65-75 cycles per minute. John Cage discussed an experience in the "Silence Room" – a soundproof chamber. He claimed to actually be able to hear his blood flowing. This rhythm is fundamental to our existence. The rhythm of our heart is also tightly interconnected with other bodily rhythms: an emotional or physical activity will most likely elevate the heart rate, and as it does it will increase the activity of many other related systems. Our heart rate at a visceral level sets the sequence of our rhythmic participation. In addition to biological processes, at a primal level, behavior also follows rhythmic patterns. In the animal world, many types of rhythmic behavior are exhibited – migration, nocturnal hunting, yearly reproduction, hibernating. Circadian rhythms play into both human and animal hormone levels, sleep schedules, and energy levels.

Beyond biology, rain provides an easily recognizable illustration of natural rhythms. Rain can be soft, quiet and smooth, or hard, loud, and violent. Raindrops fall at a rate that is in relation to the amount of moisture in the clouds. More moisture leads to heavier and faster falling rain. The rain drops will cover every square inch of an area. Drainage forms puddles. If it's a slow rain, it may not be visible in the air, but in the puddles, we see circular wave patterns, that suggest the presence of the rain. If the rain's intensity increases, those simple wave patterns will disappear into a chaotic rhythm, but the structures in general remain, even if they are concealed. Beyond visual cues, the flow/rate of the rain can create a symphony of drain pipes, each pulsing to the rhythm of the rain. Because not all drains are the same size, shape, and material, multiple compositions are created, each supporting the other. Although not perceived as a musical composition, with imagination and possibly intervention, music can be created.

The effect of rain is often a literal and figurative slowing. Drivers may be unhappy about the rain. However, it can also be an invitation to sit down and curl up with a book, or sit by a fire, or just stare out the window while the rain taps gently against the

varied textures of nature and man-made objects. Rain, then, can create different effects depending on which rhythms it's merging with. When the rhythm of rain intersects with the rhythm of traffic, cars slow to react to the conditions. The drive is louder because the wet roads create more road noise. The sound of the water is in relation to the speed of the car. The wipers are on and create a persistent audio and visual rhythm. The traffic as a whole moves with a much different ebb and flow.

Now, contrast rain with a very similar natural phenomenon: snow. Snow may be more visually evident in the air than rain but is very quiet, muffling the soundscape. It quiets traffic, blankets and cleans the air. Each of these natural patterns, rain and snow, has its own qualities, resulting in different effects on us.

*2b. Human-made rhythms*

Of course, there are artificial rhythms as well as natural ones. We can choose the examples of music, architecture, and transportation systems as vehicles to explore the nature of rhythms.

Music has an ability to connect on a deep visceral / physical level, with rhythm being a key component of this connection. It taps into our own bodily rhythms. In music, rhythm is the recurring element in meter. It is a combination of two factors: first, the underlying pulsation of strong and weak beats, and second, whatever pattern of long and short tones is superimposed on the pulsation (Newman 1952, 49). Music can persuade us to feel, to relax, to move; we associate emotional states with its rhythms. Music shows us that rhythm can move us physically and emotionally. Contemporary musicians have deconstructed music into its formal components including rhythm. John Cage, for example, created music wherein a given underlying primary rhythmic element was repeated on many scales within the work, similar to the concept of mathematical fractals. The layers of this rhythm could be expressed by any sound and therefore created a framework rather than a proscribed outcome. Rhythm can therefore provide a structure and foundation for activities.

Rhythm also has a strong presence in architecture. Consider the architecture of Christopher Alexander. He centers his thinking and building around the patterns and

rhythms of usage of a space to bring people into relationship with the environment. Louis Kahn discusses the importance of bringing the rhythms of natural daylight and of the season to interior spaces. Kahn describes “the comforting feeling of knowing the time of day” (1975, 15) by allowing access to light: “Given a presence, natural light gives the mood of the day” (1975, 139). Architects can use connections to natural circadian rhythms to create calmness. This is very important because our context and environment influences our perceptions and therefore our actions. The interplay between architecture and urban topology also exhibits rhythms. Compare the flow and sequence of traffic lights in grid-oriented Manhattan with the more organically structured Boston. The differing structures have a conscious and subconscious impact on how we interact with the surrounding space. Each pattern plays on the various levels of our consciousness, emotions and perceptions.

Finally, transportation systems, a particular focal point through much of my life, are full of rhythms. The subway is filled with rhythms: the beeps of the train, the schedule of routes, the whooshing air movement, the lights on the track, the opening and closing of doors, people flowing on/off, in/out, left/right. Turning to automobiles, a basic example of rhythms is turn signals. They in their simplicity are fascinating to me, even though all they do is click and flash at a specific rate. All cars are different, especially different brands, each setting their own rate and tone. Blinkers serve a specific purpose – to inform and announce the driver’s intention to turn. Some people trigger them early, some late, some not at all. Each instance has its own rhythm and has an effect on the rhythm of the road. If a driver signals early, it makes the person trailing slow down, and in turn kicks off a chain reaction down the entire pattern. The relationship of relative speeds of different blinkers can be seen when multiple cars are in a sequence. This is an example at the simplest, syntactic/formal level of creating connections within and between rhythms. Blinkers contain two forms of sensory input: audio and visual. Our visual attention can be focused outside of the vehicle, but we can still be aware of the blinker by utilizing the audio component. We can listen to our blinker to observe its rhythmic relationship with other events outside the car.

Now, artificial and natural or biological rhythms are constantly interacting. A literal example of this interaction is the effect lighting has on our body. The wavelengths of

fluorescent light are longer than natural lighting and therefore contain less energy (Campbell 1993, 204). The body does not react well to fluorescent lighting. Our bodies need stimulation by the full spectrum of light, such as sunlight, to retain a harmonic balance. Since fluorescent bulbs do not generally emit the full spectrum of colors, our body is only partially stimulated, causing an imbalance, which in some cases may manifest as headaches or restlessness. On a subtle, subconscious level this affects our state of mind and behavior. We are biological creatures that respond to our environment in many ways. On a primal level, we are literally physically connected to rhythms such as light wavelengths and the percussive waves of compressed air that constitute sound.

These systems and other rhythms follow a sequence of their own inner momentum and can build to affect the larger whole. Seemingly small disturbances can ripple: a stolen base that shifts a game; the obscene gesture that triggers a high-speed race; the chance meeting with a friend caused by the little tremors in your routine. Connecting people to these patterns will allow a viewer to go beyond the limits of the interface to a level of more integrated and meaningful relationships.

**3. Elements and implications**

I propose that rhythms are the undercurrent, the electricity in our lives. They are always there, always available as tides and pulses that form the connective tissue between things. To reveal these rhythms is to see beyond the static surface of the everyday and realize the beauty within the ostensibly mundane. It is to enter a language of interaction. My work as a designer is to create linkages to these rhythmic patterns as a means to connect to the core drive of living. Rhythms are the conduits between the elements of our lives, our minds, bodies and our environment. To reveal these rhythms is to create a place of pause and pleasure. By building interfaces to connect to the rhythms, so that we can respond to, observe, and feel them, the opportunity will exist for patterns of energy and renewal to bring people to a place of reflection and resetting. We can create a “tuning in” – a method and opportunity to enter into and merge with the surrounding rhythmic conditions.

What, then are the components or aspects involved in connecting to rhythms? Three

major elements have reoccurred in my work. First, I believe that the subconscious experience of rhythms is as or more essential than the conscious layers of awareness. This fact can be utilized to direct information and create connections in our ambient layer of awareness. We must also be alert to the fact that rhythms create and regulate our feeling of normalcy and familiarity. Second, the concept of synchronicity and asynchronicity of rhythms is critical in creating interesting and meaningful connections. Third, a particular application that interests me is the idea of marginal or in-between spaces in the arena of transportation. Sitting on the train; commuting to work on the highway; waiting for the bus; such experiences seem idle and unused. I believe that applications of these thoughts on rhythms and connections can activate these spaces and moments in our lives.

*3a. The subconscious*

Rhythms are tightly integrated with our subconscious. Our conscious minds are often unaware of surrounding rhythms, but in the periphery we try to keep track. Have you ever said to yourself while you're on the subway, "I feel like my stop is coming"? Do you know, without thinking about it, how long the cycle is of the traffic light closest to your house? What about how long it takes the water to boil in the morning when you are waiting to make your tea? Your consciousness may not know these details, but oftentimes your subconscious does. As Robert Irwin pointed out in 2005 at a lecture at Brown University, "much human behavior is done subconsciously without conscious awareness." This subconscious awareness plays into our feelings of stability. Every day we process sequences of signs and significance that serve as indicators of normalcy. The level of our awareness of these signals varies greatly. Perhaps just one sense or a deep layer of consciousness may be aware of the signals. However buried, that information is fed into our minds, which are responding to numerous conscious and subconscious inputs. Our decisions may be influenced, with or without our awareness. "These complex daily routine rhythms become background," taken for granted (Venezky, pers. comm.). A blinker in a car may seem small, but it helps comprise the things that regulate our day. Each is essential to the overall sense of normalcy we seek in our lives. Because of this subconscious rhythm tracking, creating awareness or connection to rhythms can be on a small scale – the blinker scale if you will. From Malcolm Gladwell's work (2000) we see that creating moments of shift and

change may require only small intervention.

This fact of subconscious rhythm tracking can be used not only for poetic purposes but also for practical applications. Rhythmic information is particularly suited to affect the subconscious. Again from Irwin's lecture at Brown, "subconscious thought matches patterns. It operates, I believe, by finding the best possible match of one's past experience to the current one. Subconscious thought is biased toward regularity and structure." In this model, information can be communicated indirectly via ambient sensory clues. As an example, consider a commuter riding the same train every day. She no longer pays focused attention to the gentle thud of the separation between the sections of track. However, her mind and body are subconsciously keeping tabs. Suppose the train begins to slow. The subconscious recognizes that the train is at a section where there are usually no stops. An abnormal shift is sensed. The thud normally heard becomes less frequent. Suddenly the train is in a full-on braking event. The subconscious alerted the commuter to the fact of an unusual occurrence without the need for conscious attention.

A useful method of moving information to ambient layers of consciousness may be utilizing unusual senses to convey information. An example that illustrates this concept is an experience I had while driving. Stopped at a red light, I was distracted by writing a down a particular thought on some paper on the passenger seat. My eyes were off the road. While I was writing I heard the tractor-trailer next to me begin the process of putting its engine in gear. I knew this meant the light had turned green. The concept here is that my ears had, in a sense, become my eyes without my conscious direction – input that would normally be taken in visually had been transformed into audio input. This way, I didn't need to pay conscious (visual) attention to the light. I believe that we can find many areas to apply this phenomenon in which information is moved to unusual sensory and potentially ambient layers of our consciousness.

*3b. Holistic attention*

It is clear that rhythms surround us. Rhythms are constantly intersecting and affecting each other. Ripples of a single interaction can flow through the surrounding environment like a pebble's waves in a pond. Therefore, in order to most effectively

"tune in" to environmental rhythms, we must treat rhythms as parts of a larger whole, and pay holistic attention to them all at once.

To illustrate the ramifications and opportunities of holistic attention, consider a baseball player stepping up to the plate. During the course of a season, a batter will have hundreds of opportunities to take a swing at the ball. On the surface, the primary interaction is with the pitcher, who wants nothing more than to strike the batter out in a series pitches. However, beyond the immediate pitcher/batter relationship are connections with the bat, the ball, the field, the fans, and the conditions of the whole experience. The components may be visual, verbal, acoustic, spatial, temporal, and structural. Each time a player goes to bat he conducts a ritual of actions that set the scene for entering into a rhythmic exercise of mind/body. When we are in rhythm with these surrounding environment, we are in synch both in mind and body. We are connected. This doesn't guarantee that the batter will bat a thousand, but it does provide the opportunity to be fully connected to what is going on and see the relationships and the potential in the situation. We can use our mind/body as a point of synchronization to allow the many environmental rhythms to connect through us. Note that, the web of interactions here is so complex that many necessarily go unobserved. Therefore, seemingly similar surface conditions can result in multiple outcomes.

Another application of holistic attention is on the highway in heavy traffic. Many people "lane weave" – looking for whatever seems to be the fastest lane at a given moment. However, this ulimately disrupts the rhythm and flow of the whole traffic system. The person who can move the fastest through thick traffic with the least disturbance in their wake is one who can look far ahead and see the rhythms forming 10, 20, 30 car lengths ahead. Rather than fighting against the rhythms, if we connect with and flow with the pre-existing rhythms, we can use their momentum to help us achieve our goals.

*3c. Synchronicity/asynchronicity*

To make patterns useful and relevant on a mind and body level, we need to make them interesting and engaging. Now, in music there are five basic tempos – very slow, slow, moderate, fast and very fast. This suggests varying qualities of physical

movement that we can use to connect with our bodies' natural ability to recognize pattern and rhythm. The place of interest is the superimposition of different rhythms on each other. My studies suggest that single rhythms or rhythms comprised of mere repetition get tedious. But when one rhythm intersects with another, the resulting tension or contrast increases interest. However, at some point, the rhythms must come back into relation with each other. If not, we lose interest because we can't identify with the order within the rhythm. The real energy is created when rhythms come in and out of synchronicity with each other. As Richard Shusterman describes perhaps a bit strongly, "the moment of passage from disturbance to harmony is that of intensest life" (1992, 22-3). In order to create that living moment of insight, we need to have these patterns of asynchronicity.

When multiple rhythms come together, a dialogue is created. We can think of each individual rhythm as being distinct, or we can view the combination as a new, more complex rhythm. When the rhythms merge into synchronicity after a period of asynchronicity, the resulting sudden, unexpected emergence of a clear, simple pattern is beautiful and engaging. Then, as asynchrony returns, a new awareness of the interplay between the rhythms has been created and anticipation of the likely reoccurrence of synchrony builds. When anticipation is created, viewer engagement is necessarily increased. The simple pleasure of simplicity emerging from complexity is an end in itself.

*3d. Marginal transportation spaces*

This third element deals more with the location or arena of application as opposed to methods of application. During this thesis study I became particularly interested in the intersection of transportation rhythms and human rhythms. Because transportation contains so many rhythmic patterns, there is a large rhythmic pool from which to choose. And, this is a natural place for emergence of marginal spaces. During moments of walking, driving, or commuting our minds may fall into a state of reflection, curiosity, and absence, closed off from the outside world. Now, I am not suggesting that all idle spaces or time should be filled. Rather, I believe the nature of these spaces allows for the opportunity to create the connections to rhythms with which I am concerned. Our state of mind is open and empty with no pre-conceived

notions clouding our vision. These in-between spaces have the potential to transport us mentally and emotionally. Such a moment is a threshold of awareness, in which a potential doorway exists to step through and see what's on the other side. It's a moment to reconnect not only to us but to become aware of the bigger whole. When we can connect on this level, we move into relation to other systems, which deepen our connections to the entire world.

*3d. Design implications*

The design implications of the pervasive nature of rhythms are exciting. Utilizing rhythms can allow for subtlety in communication. I believe there is a need for this – to make some of the information inputs we have today less obvious, to remove things from our visual or conscious attention field. Information saturates us today. Billboards, TV commercials, stock quotes on our PDAs, audible email alerts – all fill our sensory system and, ironically, desensitize us to our environment. Additionally, today's technologies are new one day, and obsolete the next. Subconsciously, we are taught to never stay with anything past a pre-set life span. Rather than searching out experiences that develop and mature over time, we get used to looking for the hottest, newest thing. Between the vast amounts of information we are bombarded with, and the speed at which we are expected to embrace the "latest thing", we often become overwhelmed and end up moving through our lives without really seeing the landscape. The overwhelming nature of daily experience causes us to try to filter. For example, by wearing headphones, people shut out the exterior. But, when we choose to not engage in the present moment, we miss many of the most interesting details of our existence. Not only does this remove the possibility of simple moments of pleasure arising from observing embedded rhythms, there is also a vast amount of information contained in the undercurrent that becomes invisible to us.

Designers can therefore use rhythms in multiple settings. They can be used simply for play – to create poetry and beauty, to create an enjoyable or amusing experience. They can also be used to convey information – to indicate normal status, to create an alert when conditions change, to allow for nonverbal communication of data. An example of the pleasurable and informational aspects of rhythms is reflected in a runner's stride. A runner may enjoy the regular rhythm of his or her stride. However,

in addition to the pleasure created by the rhythm of the stride, listening to the sound of feet on the pavement can provide empirical information on the pace of the stride, the conditions of the surface, and the form of the runner. Being tuned in to rhythms, then, can provide in addition to pleasure a rich amount of information about the status and condition of the experience. This knowledge may be of particular interest and relevance to designers of experiences – public installations, interior automobile designs, time-based environmental design, any kind of information-mediated environment.

Unfortunately, rhythms can themselves at times be overwhelming. For example, the rhythmic flow of a city has a fast tempo. All the systems – taxis, buses, pedestrians, entries and exits to buildings and subways, traffic lights – are forced to interact with each other. This intense rhythmic scale consumes our senses. Horns, engines, beeps, sirens and cell phones bombard our hearing. Changes in scale and speed distract our vision. Smells of exhaust, bakeries, local soup kitchens and coffee permeate our nasal passages. Stairs, curbs, brick and concrete all contribute to our sense of direction and physical balance. The conflicting, intersecting rhythms can become overwhelming and cause us to shut down. Our sensory layers, and therefore our emotions, are on high alert. The line, then, between a complex rhythmic structure and chaos can be fuzzy. Any use of rhythms must be tempered by this knowledge.

**4. Studies and search**

My work throughout my graduate studies has reflected these principles of rhythm and connection. I've performed studies and experiments ranging from the extremely simple (recording and observing blinkers) to the complex (creating interactive experiences where rhythms are influenced by multiple audio and visual inputs.

In an collaborative independent study with Levi Hammett (a fellow student), we explored principles of rhythmic intersection, juxtaposition and synchronicity. By creating a simple visual rhythmic structure and pairing it with a different and more complex audio rhythm, in addition to the obvious creation of a new master combined rhythm, the two original rhythms become more pronounced based on the coincidence, or lack thereof, of their pulses. This illustrates the principle of synchronicity/

asynchronicity – as the rhythms came in and out of relation to each other, much more interest was created than if we had used the original audio and video together, or if the chosen audio and video consistently meshed. I also explored concepts of dimensionality as described in rhythms. One study involved a relatively flat visual rhythm (abstract marks of color on leader film) paired with rich environmental rhythms (traffic flows, conversation, etc). Because there were different dimensionalities involved – flat visuals versus richly textured and multi-dimensional audio – issues of embodiment and perceptual threshold were raised.

As my thoughts on rhythms matured, I began exploring simple translations of rhythms into digital experiences. Sounds were used as inputs to create and alter simple graphical images. This was used in two contexts: first, with environmental or ambient inputs, and second, with viewer or deliberate inputs. The viewer can simply experience the reaction on screen to ambient audio rhythms, or he or she can become an active participant in the experiment by adding his or her own sound creations to add on to or change the background rhythms. The images are a simple interface to either the ambient or directed environment. The experiment created connections between the viewer and environmental rhythms.

More recently, I have worked with dynamic generative systems. These are ultimately more complex versions of the simple digital translation described above. Light, sound, and motion sensors are used in various environments to create some sort of output. In one case, a light sensor was placed on the rear bumper of a car at night. When another car pulled up behind the wired car, the headlights triggered a change in the music being played, from a background slow tempo calm piece, to a high tempo jazz song conveying considerably more urgency. Or, instead of an abrupt change in music, there could also be a range of reaction depending on the level of light input. Volume could be increased, one piece could cross fade into another, etc. Note that by using audio cues to represent visual occurrences, I begin to access the idea described above regarding moving information to ambient layers of awareness. Driving is a highly visual experience. By transferring some of the informational inputs to audio, we utilize our subconscious and free our visual channel for heightened awareness of other issues. In a less utilitarian context, the car can be viewed as an interface to the

environment and a generator of artistic content.

These dynamic generative systems can become highly complex and can reflect not only the actions of the external environment, but also the rhythms of the driver's actions and the interaction between driver, landscape, and machine. For example, motion sensors on the brake pedal can create audio output to highlight the rhythm of slowing and stopping. This suggests that rhythms may be both public and private – generated and viewed only by us, or created as part of public spaces. Also important to these studies are control issues. Some rhythms we have complete control over; for some we have partial control; and of course there are many rhythms which are completely outside of our sphere of influence.

Another area of exploration has been installations. Public space installations provide an arena for an audience to discover rhythms through play and interaction. I collaborated with another student, Ashley Pigford, on installation experiments. We learned that one important aspect of such pieces, at least at the beginning of an experience, is an instant feedback loop. People are "hooked" if they can see a somewhat predictable response to their actions. For example, moving to a specific quadrant of a room may cause a video loop to crossfade between image sets. However, following this initial "instant gratification", users are willing to immerse themselves in the experience, and become a part of and a creator of the work. This shift allows movement from simple perception to a resonant connection with the content. The physicality of this type of installation (audience members' physical actions play into the visual and audio output) allows deeper, more intuitive understanding of the rhythms of the movements and proximity of other audience members and the environment. A harmonic relationship is created between body, mind, and context, allowing true integration with the rhythms of the surroundings.

**5. Conclusions**

In addition to creating beauty and driving aesthetics, we as designers should create awareness, thoughtfulness, and realization. Martin Venezky describes Robert Irwin's approach to painting: "to stop making pictures of things and to start considering the things themselves" (2004b). Viewed this way, design can become a window rather

than an object in itself. As a designer of experiences, I believe I am responsible to help inject moments of wonder, pleasure and pause into people's everyday interactions. I believe that opening windows to the undercurrent of rhythms that surround us can create such moments of wonder, and help us consider the details of our lives and the world as being worthy of reflection.

I believe rhythms shape our lives. They are a force and momentum that create emotions and influence our decisions. Rhythms are a conversation between many different elements, but on the whole they are a common denominator of our connection to the world around us. Recognizing and connecting with rhythms can free us of the feeling that we need to be aware of everything. They can help us trust the things that come naturally. They allow for information to be silent yet still have a voice. They invite us to participate instead of demanding our attention. They provide a window and doorway rather than a façade. They allow for a dialogue. As our awareness of how we fit into the greater whole grows, our attunement to the larger web of rhythmic pattern can help us use our bodies and minds more purposefully as a conscious communication device. This can make us active participants in the composition and language of rhythms. Connections to rhythms allow for the potential for life to be less routine and more dynamic and flexible.

By revealing and engaging with rhythms we can move beyond the factual levels of experience into deeper levels of meaning and connection. Beauty and awareness will blossom when the interface, audience/viewer, mind/body, materials, and sounds are all being influenced by each other. This is where meaning can be discovered and a doorway to the invisible can be opened.

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