

## Chapter 2

### Velocity or Activity-The origin of Space and Time



*He had been working on this series of paintings for years. Lying on his back reaching upwards with his brush. The movements of his body were as fluid as the freshness of the newly stuccoed plaster. It was in this living dynamic that he was now attempting to capture the single moment of humanity coming into a sleepy wakefulness: the moment where the sensual and conceptual first arose as a possibility. Before this, humanity was one with existence. Now, a new relationship was possible. Awareness lives in the tension between. The tension is what gives birth to the awareness. Was it two fingers or one tension? Now the possibility of clear consciousness had been born as a seed. Would the sensual ever reunite with the conceptual intention? He labored on in those purposeful willful strokes of his brush; he etched that moment of time in space as an eternity for all of humanity to see. Would those below who viewed this creation be able to experience the movement and dynamic activity that he had labored so hard to portray and express? Would they be able to inwardly move back into those early fiery possibilities of time and space? If not, then the whole labor was only a picture.*

In the previous chapter, we investigated the central role that sensation plays in our life and conscious experience of the world. It is being suggested that the present means of navigating our lives, by separating all experience into inner and outer elements, is not necessarily a given but rather a conceptual choice. This is not the only choice available to us. When we investigate the sense of touch closely, we find that rather than touch *resulting* from the interaction of inner and outer elements, touch is one of the key senses used to form the concept of *inner* and *outer*. We have shown that the origin of object-based causality – that the inner and outer meet and therefore sensation arises – is questionable because we must use our sense of touch to form the concept of inner and outer in the first place! While this may appear to be simply a game of semantics, nothing could be further from the truth. Nothing (no – thing) can be a causal element of experience if we must use our senses and thinking activity to form the concept of the causal element (a thing) in the first place. In Tibetan Buddhism there is a wonderful phrase used to describe such a condition. The term used for any element that is based on the integration or interaction of other elements is “dependent-arising.” According to the Tibetan Buddhist philosophical school known as madhyamika, all phenomena are dependently arising. This means that there is not an ultimate cause of all phenomena. The implications for this particular change in worldview are tremendous. The materialistic or object-oriented worldview is based on the premise that all existence can be ultimately explained as the interaction of material qualities. If these material qualities turn out to be dependent on other nonmaterial qualities, then a material basis for a worldview is impossible. This will be looked at more carefully in future chapters. It is important to note that just because nothing (no – thing) has an intrinsic reality separate from the rest of existence, it does not mean that there are no relationships in the world. An example of this can be found in one of the most basic elements of physics: the concepts of space and time.

Of the two sources listed at the end of this chapter, I’m not certain which was my first introduction to the idea that there may be a different hierarchy to the concepts of velocity (or activity), space, and time. In our present worldview, most of us simply think of these concepts as a given. These are the most basic elements that make up our entire world. It simply doesn’t get more basic than space and time. Or does it?

## **Exercise #2**

This exercise requires less preparation of the surroundings than the first exercise, but a careful following of the conceptual points is very important. To do this exercise, find a quiet, simple space without a lot of visual elements. Think of the type of space where Zen meditation might be practiced, the simpler the better. If there are too many visual elements, it will be harder to focus on just one or a few. Keep the visual environment simple. For example, I have practiced this exercise focusing on a small 4” hand made copper bowl on the middle of an empty wooden table. Be certain that the space is audibly quiet and that no

distractions are likely to occur.

*Close your eyes for about a minute to simply quiet your thoughts and then open your eyes and observe only the visual impressions in front of you. Upon opening your eyes, try to stay completely still and don't even move your eyes. Investigate the visual experiences that you are having and that you are integrating into a concept of an image that we identify as "copper bowl." Notice the variation in color hue, and where the hue appears lighter or darker. What are the visual elements that you are using to form a concept of space? Do you actually see the image in three dimensions or are you unconsciously adding to your image tangible experiences you have also had in the space to form a concept of an object? You are trying to connect directly with the image concept without adding any other sense impression.*

*Once again, the key here is not to necessarily find a final causal element behind the phenomena we experience, but rather to observe yourself in the activity of sensing and forming concepts from these sensations. Try to keep practicing "coming back to your senses." This activity is best done for a short period of time, say five minutes each day for a period of a few weeks. If it begins to get boring, try and reconnect to the original questions listed above.*

## **Commentary on Exercise #2**

If you work on observing phenomena for some time, a number of observations of your observing and sensation begin to become clearer. If we take the example of the copper bowl, the inner awareness and conversation might go something like this.

At first we think "I am looking at the bowl." We have the sense we see it "right there," and if pushed to prove this to a person questioning the bowl's reality, we would likely reach out and grab it and hand it to the person asking us such a question. What we are trying to accomplish here is not simply to deny that the above action can take place, but to look at what is necessary to accomplish the action in the first place. So there we sit staring at "the bowl." Or is it an image that we recognize as "bowl" and slowly we begin to see differences in the hue or color? We notice that one part of the image is perhaps brighter than the other side. We notice that the inner part of the image that is darker has a brighter outside part of the image than the other side. Small differences in color with linear patterns give us a clue as to how the bowl would feel if we ran our hand across it. By moving our eyes, we can imagine what it might feel like if we were to move our hand across its surface. In time, we also begin to realize how much we are

moving our eyes or moving our head to get a sense for the “size” of the bowl. If we move our eyes side-to-side a small amount, we assume the bowl is small or far away, a larger amount and we assume the bowl is larger or closer to us. If we haven’t actually touched the bowl or an object on which it is standing, we will likely be unable to properly estimate the “tangible size” of the bowl correctly. All of these subtle eye movements, the focal length of our eyes, and our memory of how large the image in front of us “felt” when we touched it with our hand(s), are all factors we integrate to create the concept of the object we habitually see as “out there.” Note that as in the first experience, it is only in the sensational experience that the concepts of “in here” and “out there” are arising.

This brings up the question: if I wasn’t able to touch an object or move my head or my eyes or feel the moving musculature in my eyes from the activity of focusing, would I be able to construct a concept of “in here” and “out there,” the concept of space? I suggest here that the concept of space is dependent upon our ability to move; that the movement is a prerequisite to forming a concept of space. If our environment was unchanging, either inner or outer, our concept of space would fall away and we would simply have an experience of pure vision. It is the change in the visual environment as we move or as the scene changes that result in us forming a concept of space. No change, no space.

### **The integration of the senses of touch and vision**

I can think of a few examples where we can put this concept to the test. I first began to integrate these various elements into a bigger picture by observing infants. It is interesting to see how when a child is really very young, they lack the ability to integrate their sense of vision with the sense of touch, two senses that are critical to integrating a concept of space. I once observed an infant in a crib having a diaper changed, perhaps in preparation for going to sleep. The infant had limited ability to focus her eyes. The focus of the eyes and the hands appeared to wander and wave all over the place. It was a magical moment when the flailing hands of the newborn came into physical contact with a mobile hanging over the crib, and thus had a sensation of pressure and awareness of a tangible sensation that corresponded with the image that was being observed. The child’s gaze was looking in the same spatial area and was focused on the image associated with the mobile. All of the sudden it was like a light bulb lit up in the child and the eyes and hands began to work together in unison. The sense of focus and concentration of the infant at that moment was one of the strongest types of focus I have ever experienced. It was as if a key had suddenly unlocked a conceptual door and the possibility of navigating the tangible world in a visual manner became a possibility. This understanding of the child shows not simply a given reality but rather a learned conceptual means of integrating different sensational experiences.

## Small Buffalo or Insects?

Another example of the conceptual nature of three-dimensional space can be found in Colin Turnbull's classic book *The Forest People*. In this book, Turnbull, an anthropologist, describes his time living with a tribe of indigenous people, the BaMbuti, deep in the Congo Rainforest. Most of their culture revolves around an elaborate celebration and creating of the "Molimo," the song or sound of the forest. Living deeply within the confines of the rainforest, the ability to *hear* what is happening nearby is much greater than the ability to *see* what is happening nearby. In the rainforest, *far* is never seen, as the plants grow so closely together. Distance is only experienced by hearing the sounds that are less loud or faint "off in the distance."

After spending a year with the BaMbuti, Turnbull convinced one of the leaders named Kenge to accompany him in a Land Rover on a journey to the plains of the Serengeti. After traveling for many hours with poor visibility, Turnbull describes Kenge's first glimpses of the plains and his questions concerning the images he experienced. At one point Turnbull describes Kenge's reaction to seeing a herd of "small buffalo:"

*Then he saw the buffalo, still grazing lazily several miles away far down below. He turned to me and said, "What insects are these?"...*

*When I told Kenge that the insects were buffalo, he roared with laughter and told me not to tell such stupid lies. When Henri (the guide) who was thoroughly puzzled, told him the same thing and explained that visitors had to have a guide with them at all times because there were many dangerous animals, Kenge still did not believe, but he strained his eyes to see more clearly and asked what kind of buffalo were so small. I told him they were nearly twice the size of a forest buffalo, and he shrugged his shoulders and said he would not be standing out there in the open if they were. ...*

*The road led down to within about half a mile of where the herd was grazing, and as we got closer, the 'insects' must have seemed to get bigger. Kenge who was now sitting on the outside, kept his face glued to the window, which nothing would make him lower. I even had to raise mine to make him happy. I was never able to discover what was happening – whether he thought that the insects were changing into buffalo, or that they were miniature buffalo growing rapidly as we approached. His only comment was that they were not real buffalo, and he was not going to get out of the car again until we left the park.*

Clearly, Kenge's problem was not a lack of intelligence, but simply due to the fact that he had never experienced the conditions under which visual images appeared to be so small because they were "far away." Note that his understanding changed once they got in the Land Rover and drove toward the "small" buffalo. Once Kenge could see the change in the size of the buffalo as the size of other elements in the landscape also changed, he was able to experience the "small" buffalo as very large buffalo only "far away" and becoming larger as he moved closer.

### **Have we landed yet?**

We should be careful to not be critical of Kenge as a "simple" person who is lacking in world knowledge. If any of us were transported to another world, we might also have difficulties working through the details of the visual scene before us. This problem occurred quite literally in the first NASA moon mission, Apollo 11. When astronauts Buzz Aldrin and Neil Armstrong were descending to the surface of the moon in their small lightweight lunar module, a problem began to occur in the computers that were supposed to land the module on the surface of the moon. Armstrong took over the controls manually but they still had difficulties determining their altitude above the surface of the moon as the altimeter was also not working properly. How high were they off of the Moon's surface? Were the rocks they saw below large and far below or small and close by? The moon is smaller in diameter than the earth so even looking at the horizon gave little clue to their altitude. Finally, Aldrin noted the shadow of the lunar module on the surface of the moon. By comparing the size of the shadow with the size of the physical lunar module, he knew how high off the surface they were. Aldrin made a mental note of this, and, shortly after, they landed.

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As we have seen, to have an experience of space we must have some element of change or movement in our surroundings, and it must be a movement or change that we are familiar with. For Kenge, the car needed to move, and, for Aldrin, it was the comparison of the changing size of the shadow of his spacecraft that allowed him to form a concept of space on the surface of the moon.

As stated earlier, the situation for time is similar to that for space. It is not an absolute system unto itself, but one that is dependent on the change, or lack thereof, in our surroundings. Two polar examples will help us to illustrate this point.

1. The Zen hall – Are we finished yet?

During adulthood, we often reach a point where we find a need to become more awake or more aware of our surroundings or our own inner lives. Meditation is often a key step in developing this quality of awareness, and often people begin by attending a formal meditation retreat. The retreat usually takes place in a simple space lacking in detail or activity. The Japanese Zen tradition, the Quaker Meeting houses or a Shaker building all exemplify this level of simplicity and stillness. And so you begin by sitting still for 20 minutes. A simple assignment when looked at from the outside? If you have had this experience you know what usually happens.

Most people find that their mind or inner activity does not react well to quiet and stillness. Often, the mind races, itches need to be scratched, coughs need to be suppressed. Many times people find they begin an inner conversation. *“Are we done yet? Can’t look at the watch? (Note the moving hands or moving numbers.) “I am sure it is more than 20 minutes by now, the person in charge must have lost track of time.”* This place of stillness can make us very uncomfortable, and time seems to have stretched on forever! We often continue to develop an inner dialogue to “pass the time.”

It is interesting to note that often meditation begins by learning to be still. Only then can one begin to stay awake to what is changing all the time. Until we learn to be awake in the changing we cannot experience the movement of the inner activity itself. In the Zen tradition, there is another form of meditation called shikantaza. In this meditation one focuses on a scene where change may be present, but the key is to simply note the change without trying to fixate any detail or aspect of the scene. Stay with the change. It is often described as watching a flowing river; note the movement but try not to fix on any one detail yet. When you do, you often lose track of the whole scene and forget to come back to your senses. The key in this meditation is to learn to control when you perceive and when you conceptualize. Many people have a habit of seeing something they recognize, naming it, and then they stop seeing and simply think about what and when they already have had a similar experience. Being aware within change, this is a key quality in learning to see the living dynamic aspects of the world.

## 2. Too fast To Too Slow

A similar experience can arise in driving an automobile on a highway or preferably the German Autobahn. I recall my first experience driving on the autobahn in a rental car while on a business trip. Once outside of the city, the speed limits fell away and there I was- fairly open road with no limitation by law. The rental car felt good up to about 160 kilometers per hour (about 100 mph). From there to the top speed of about 200 kilometers per hour (just under 125 mph) I began to become uncomfortable. Everything was happening so fast! It was only a matter of minutes before I saw the dreaded lights of a fast approaching Porsche in my rear view mirror flashing at me to move over. I

thought, “How am I supposed to change lanes and let this guy get by while driving at this speed?” I slowed down slightly, inched over to the right and in a moment he was by me in a flash. He was easily doing 240 kilometers per hour (150 mph) or more. “How does he drive that fast?” I thought. After about 10 -15 minutes, I became more comfortable with the driving and started to acclimate to the new situation. Soon we came close to a city and the speed limit reverted back to 100 kilometers per hour (just over 60 mph). It was horrible! I felt as if I was crawling along. I even checked the speedometer to be certain it was still moving and hadn’t somehow become stuck. Shortly, we arrived in the city and the 60 kilometer per hour limit (about 35 mph) felt like I was looking for a space in a parking lot. It too felt totally too slow. Until, after a few minutes, it all began to feel “normal” again. What is normal? Is this an objective state or is it related to a habitual set of conditions? If we are Kenge, are these conditions different than those of Colin Turnbull, or Buzz Aldrin, or even you driving a car on a business trip? Somehow, the world appears to be more dynamic and less static than we might have thought. And this is *exactly* what we come to as an experience when we find that velocity or activity precedes the concepts of space and time. Space and time are not given, but instead are conceptual relationships that we develop and become an overlay for our experience.

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Eventually, if we aren’t careful, we stop paying attention to the change. We see every experience as a series of objects interacting. We ignore the living aspects of the world. The living world becomes static and we find ourselves stuck, rigid, inflexible, bored (board) stiff.

### **Further Reading**

Steiner, Rudolf. *The Light Course*.

Kloetzli, Randolph. *Buddhist Cosmology*.

Turnbull, Colin. *The Forest People*.

Aldrin, Buzz. *Magnificent Desolation: The Long Journey Home From the Moon*