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## Time, Space, and the Kaleidoscopes of Occupation

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Time and space have been studied at many levels from cosmic, evolutionary, to human. Cosmic time and space is the story of the origins of the universe. Evolutionary time and space is that of living creatures on earth. Human time and space are understood in the course and activity of a human life (Tuan, 1977, pp. 132–134). Each uses a different set of kaleidoscopic mirrors through which we can view our occupations. Each results in a different picture, but all depend upon the basic elements of occupation for their design.

### **Cosmic Time and Space**

The cosmic level of time and space has engaged philosophers and theologians in every culture as it is intertwined with basic issues of humanity, represented by Paul Gauguin's 1897 painting, "Where do we come from? What are we? Where are we going?" The painting shows (from right to left) the life cycle—birth, life, death representing respectively our origin, our identity, and our destiny, human concepts that are linked to cosmic ones. Humans can trace our lives back through time and space, through generations, through animal ancestry, early forms of living matter, through the elements of matter in the universe, through the energy that is interconvertible to matter, that is both particles and waves.

Einstein's cosmology suggested that in the beginning was Oneness of time, space, matter, and energy; a Singularity, where everything was an infinitesimal point in space, an infinitesimal instant of time; everything was zero size. About 15 billion years ago, the universe, space, time, matter, and energy burst forth in a searing hot fireball of the "big bang" in which space, naturally dynamic, expanded with time, "carrying matter like driftwood on the tide" (Veneziano, 2004, p. 56). As the fireball expanded and cooled, tiny subatomic particles coalesced into atoms. Einstein's theory of general relativity equations were based on a four dimensional geometry including both time and space. Gravity was a curve or bend in the

time–space continuum near matter. Atoms thus merged under the action of gravity to form galaxies and stars. Some stars developed planetary systems, and some of these planets—at least one that we know about—developed life.

## Evolutionary Time and Space

In adapting to the environment across evolutionary time, animal species have relied upon adaptation through natural selection from variations in populations of a species *over time and space*. Edelman's theory (1987, 1989, 1992) of the development of the mind suggested that *adaptation of the individual brain* also occurs through a *selection process*, in this case, selecting from the *variety of the population* of neurons in the brain. He pointed out that from the moment of conception of the individual, time and place determine the formation of groups of cells as they divide and migrate and organize. Our individuality is determined by the temporal and spatial history of the developing cells, embryo, fetus. A primary repertoire or basic group of brain cells is shaped through our individual interactions with the environment time and space. This shaping occurs through neural synapses forming and strengthening. Successive stimuli are organized sequentially and in locations producing different patterns of neuronal discharge producing perceptions of change that become our initial perspective of time and space. These neural connections form what Edelman calls “local maps” of our experience with the world around us. These local maps are groups of neurons that linked together because the sensations of occupational engagement of the person with their environment was one in which the stimuli from the environment were also linked together closely in time and space. These groups of local maps, neural maps of instants of our experience, gradually organize, forming global maps. Living creatures' brain maps of the reality within and outside themselves allow them to begin to acknowledge self versus nonself. They also begin to recognize patterns in their actions in the environment and patterns in the environment itself, patterns in time and space.

Paul MacLean (Former Director of Brain & Behavior Lab at NIMH) developed a model of the human brain as triune or three-part (Jacobs, 2003; MacLean, 1978). The triune brain is an evolutionary model that describes the ancient reptilian brain (brainstem), the early mammalian, emotional brain (limbic system), and the higher mammalian, cerebral neocortical brain developing “on top of” each other. To assist in understanding its anatomical structure, Ornstein and Thompson (1984) ask us to picture a rambling house, added on to over the years. In contrast, Caine & Caine (1991) suggest that, to understand the complex functions of the triune human brain, we think of it as three family members living together, working together. I like to think of the Brain family of three sisters.

The oldest sister Brainstem Betty is in charge of maintenance: providing food and waste disposal, attending to general security and comfort of their home place. She functions in an automatic way, loves order and security, and resists change and novelty. When she attends to sex, it's for reproduction. She never truly thinks of herself as separate from the others, nor from the home in which they live. In her concrete world, time is now and place is here. Since she doesn't use language, she's the strong silent one.

Betty (and early humans) were so directly immersed in the world that objectivity was not likely because there was little distinction between one's self and the outside (Jacobs, 2003, p. 13). These differentiations are made possible by Edelman's global maps, which are the beginning of conscious awareness—distinguishing self from nonself, developing boundaries between self and nonself, inside and outside, developing concepts, abstractions, and categories of knowledge of time and space of the world inside and outside of the self.

The second sister in the Brain family is a "Sensitive, New Age" kind of woman. Limbic Louise is deeply emotional and shares her feelings with a variety of facial expressions and body language unknown to Betty. Lou treasures affiliation, ritual, and celebration. She has emotions related to time and space, bringing the feelings from past experience into her present location. Lou vacillates between competition and cooperation. Her sexual focus is on romantic feelings or occasionally the pain of rejection. She is afraid of being alienated from the group or cut off from the emotional satisfaction of membership in the group or with important "others." To Lou, time means past feelings and future anxiety, space means being near or far from people and things she cares about.

The youngest and largest of the sisters is Neocortical Nell. She's the Brain family's pride and joy. She has creative skill in language and art, and yet is capable of complex scientific analysis and high level abstract thought. Nell wants meaningful occupation, challenge, novelty, stimulation. She deplores boredom, occupational deprivation, stagnation. Her sisters occasionally wish she were not quite so self-aware and introspective, or at least that she didn't talk about herself and to herself so much. It's as though Neocortical Nell concocts her own version of internal and external reality, of time and space, in contrast to their sensory or emotional perceptions of the external world. She keeps track of the family history, the past, and places they have been, but most keenly focuses on the future and the potential to turn the family homestead into a model place. She can anticipate, plan for the future, and carry out plans for the entire Brain family, although she shares the decision making with the others. Whereas the sisters are proud of what Nell can do, there are times when they "downshift" to Lou's emotional control of situations or even let Betty loose, with her less smooth, more aggressive behaviors. Those are times such as when Nell is bored with routine or habitual occupations or deprived of meaningful occupations, when Lou makes them feel anxious or stressed, or Betty's alarm goes off warning the others that their safety is threatened!

The abstractions that are so natural for Neocortical Nell produce filters, substitutions of concepts for sensory perceptions, thus a loss of immediate experience putting her somewhat out of touch with the real world. Humans in Western culture, like Nell, came to see themselves, not as part of natural selection, but as dominating nature. As we separated self from all else we began to observe the natural world rather than participate in it. We began to see things—nature, others—in terms of their utility and purpose relative to us. We can shut out actual experiences of engagement with the outside world—we may miss seeing the sunset because we're driving and fretting over our day at work; we can disengage from what we are doing and from fully "being" in and experiencing the moment, the place, and the occupation (Jacobs, 2003, p. 14; Langer, 1989).

Occupation is defined and described in many ways: those that emphasize the external, observable nature of occupation, the ordinary and familiar things that people do everyday (American Occupational Therapy Association [AOTA], 1995) and those that emphasize the experience of engagement in an activity (Pierce, 2001, 2003). Human time and space also have two aspects: an external or locational one, such as clock time or a geographical position, and an experiential aspect that is “lived space” (Parkes & Thrift, 1980) and time. This experiential aspect is subjective, one in which “the experiencer lives and moves and searches for meaning” (Buttimer, 1976, p. 282). When we include this experiential definition of occupation, it reminds us to also consider the experiential aspects of time and space.

### **Time/Temporality**

Traditionally we have thought of time in its cosmic sense: the indefinite or unlimited extent in which events have happened, are happening, or are going to happen; every moment that has ever been or ever will be. We have studied the external locational dimension of time: clock time, the moment at which something has happened, is happening, or will happen, the duration of an event or between events.

Christiansen (1996) reviewed traditional concepts of occupational balance in our field and their relationship to time, including time use. Time use studies have reported international results, occupational patterns of how people spend their time in many countries (e.g., Robinson & Godbey, 1997; Szalai et al., 1977; Szalai & Andrews, 1980) and discussed appropriate research methods for data collection and analysis (Pentland, Harvey, Lawton, & McColl, 1999). All of these have used locational views of time as the measure of occupation. In this tradition, Minato & Zemke (2004) studied the time use of persons with schizophrenia living in the community in Japan to explore the stresses of their daily occupational patterns and their strategies of occupational choice related to stress. We found that although the participants chose to spend time in stress reducing occupations as a short-term strategy, they also chose to use their time in stressful participation in worklike activities within the day care program, a co-op sheltered workshop, or a part-time job because of the long-range skill development and practice in controlling their reactions to stress. Erlandsson, Rognvaldsson, & Eklund (2004) offer a more recent method to study occupational patterns in time as they transformed “yesterday diaries” into time-and-occupation graphs and analyzed the complexity of the patterns described by the graphs. They cited the need for further development of a process describing patterns of occupation in terms of other occupational characteristics, such as the value and meaning of the occupations and their relationship to health and well-being (Erlandsson, Rognvaldsson, & Eklund, p. 12).

Perhaps a better match for the concept of occupation that I wish to explore today, that of the experience of engagement, might be the concept of temporality; the experience of time, the perception of time, the meaning of time. We are familiar with the temporal aspects of occupations—“the rhythm (patterns of tasks within the occupation), tempo (rate or speed [of the process] of the occupation), synchronization (with other coparticipants), duration . . . and sequence (ordering of tasks),” which contribute to the patterns of our daily occupations

(Larson & Zemke, 2004, p. 82). We experience time in occupations, not in identical clock or calendar units. I believe that our focus in occupational therapy and occupational science should be on occupational temporality, the experience of time as shaped by engagement in occupations (Larson & Zemke, 2004; Zemke & Clark, 1996, p. 92). For example, some occupations must be continued to completion and thus determine the pace and amount of time that will be required, such as childcare occupations, in which the child's tempo may be more important than the adult's schedule (Krieger, 1996; Larson, 2000; Larson & Zemke, 2004).

Human perception of time shows the blend of characteristics of the Brain family. We must "perceive succession, simultaneity, and duration within each sensory system; integrate these perceptual patterns; organize this information to give a clear sense of present in relation to past and future; and organize these aspects of time within the sociocultural milieu" (Blanche & Parham, 2001, p. 188). Beginning with infancy's awareness, similar to that of Brainstem Betty's, of discomfort—hunger, thirst, fatigue, cold—and of duration as the time satisfaction and comfort are obtained. The accompanying internal and external reactions to discomfort and comfort are formed into the basic emotional repertoire of Limbic Louise, who shows increasing complexity, but reacts strongly to time's meaning as conditioned by those around her. Neocortical Nell is the clock reader of the family, cognitively perceiving the rational concepts of a temporal world of supposedly equal units of seconds, minutes, hours, and years, using her PalmPilot™ calendar and schedules. Together they shape our experience of time within engagement in occupation throughout our lifespan. Cottle and Klineberg (1974) discussed the lifespan development of our experience of time, our temporality.

People experience a variety of temporalities shaped by occupational engagement. How is our view of time affected by our occupations? We perceive time to move at different rates within different occupations. Sometimes we lose track of time completely because we are so involved in a challenging activity that we focus on the occupational experience itself, not on external time.

Flaherty's studies (1999) have discussed the underlying qualities that might produce three temporalities: Temporal Compression, Temporal Protraction, and Synchronicity. Temporal Compression occurs when we experience less time is passing (has passed) than clock time indicates. Sometimes, as we say, "time flies when you're having fun"—as though the clock has speeded up its movement. In contrast, Temporal Protraction occurs when we experience more time passing than the clock time indicates. At times, when we are bored, for example, we feel that time drags—as though the clock has slowed down. Flaherty also identified Synchronicity, a match of perceived, experiential time and clock time. Much of our day probably entails engagement in occupations that produce this experience, especially in this society where we have clocks everywhere and watches on most every arm.

Other occupational temporalities have been described. Csikszentmihalyi (1990) and Csikszentmihalyi and Csikszentmihalyi (1988) described specific qualities of occupations that might lead us to experience Flow, an intense focus upon our engagement in occupation that includes a feeling of timelessness. Other experiences of disrupted temporality include Temporal Rupture, the distortion of time in a life changing event such as acute or chronic illness and onset of disability. It is as though the "fabric" of time were torn by the incident and its

repair was a very gradual and slow process of return to familiar temporalities as one's gradual involvement in satisfying occupations returns. A temporary but intense emotional and cognitive disruption can occur under extreme circumstances of intense impact. An example of this extreme temporal experience is seen in the following video clip. At a Memorial Day program last May, the WWII U.S. Army Air Force fighter pilot, Lt. Colonel Victor Bast, who is my father, was invited to speak about the meaning of his experiences in that distant time and place. Within his reminiscences, he recalled the moment before an air battle, when for him, time stopped.

Few of us experience such a dramatic disruption of our temporality as that; however, most of us have frequently experienced temporal compression, protraction, synchronicity, and occasionally, flow. Larson studied what I have referred to as occupational temporality, the experience of time during engagement in occupation, using Experience Sampling Methods (ESM) with 35 occupational therapy students in the Midwestern and Western United States who responded via an e-mail paging system to questions about their occupational experience (Larson, in press). They named the occupation, place, and social circumstances at the time of being paged, and they answered questions about such occupational characteristics as the novelty, complexity, and skill used in the occupation; about participatory experience including their emotional and intellectual engagement and their focus on self and on the occupation, as well as their perception of the temporality of the occupational experience. She found, using Structural Modeling analysis, that the occupational features of novelty and complexity and individual's skill use were good predictors of engagement, which in turn predicted temporality. Her model of Dynamic Occupations in Time (DOiT) (Larson, in press) illustrated the complex relationships predicted from literature and the results of her data.

Larson's further examination of the data with Configural Frequency Analysis (Bergman, 1998; Von Eye, Spiel, & Wood, 1996) was an attempt to find patterns of the factors (novelty, complexity, emotional and intellectual engagement, attention to self, and attention to occupation) at high or low level and the temporalities that might be associated with them. Her findings supported the existence of patterns of characteristics that occurred more often than would be expected statistically, but also that the six composite "types" or patterns that she described were associated with the range of perceived temporalities. Based on analysis of open-ended questions to the participants, she suggests that additional occupational and individual characteristics should be included to better predict temporality including such elements as enjoyment of the occupation, satisfaction with performance of the occupation, performance stress, and how closely we approach goal attainment.

In response to the feelings of time pressure in American society we are encouraged to prioritize our goals (Covey, 1989), to attempt to cut down on the things we have to do. Economically well-to-do, this country's people suffer from a perception of time poverty; we have too many things (occupations) to do in the time available. Compared to others in the world, do Americans seem money rich and time poor? With a limit of the same 24 hours a day the rest of the world has, can we get time rich? Our attempts at solving this dilemma include time deepening (Robinson & Godbey, 1997). In a polychronic culture (Hall, 1983), several occupations can be performed within the same time frame. This multitasking is what we have

referred to as enfolded occupations (Bateson, 1996; Larson & Zemke, 2004; Zemke & Clark, 1996, p. 91). Primeau described “trip-chaining” for the combination of more than one purpose in an automobile trip (1996, p. 120). For the realtor who is driving, involved in a cell phone conversation with a customer, searching the computerized Web site for real estate listings for yet another customer from his laptop, while commuting to a third customer’s “for sale” site, we may have “space deepening” as well. It may not have been possible to be in more than one place at a time, but with technology, we are trying.

## Space/Place

While the 18th and 19th centuries, philosophically, were an era of temporocentrism (Casey, 1997, p. x), where space was usually studied in terms of time, 20th century philosophy emphasized the foundational quality of space and place in human life and the equally intertwined quality of space and time. If we think of cosmic time as the infinite extent in which things can happen, every moment that has and will exist, then a similar cosmic view defines space as the expanse extending in all directions in which all material things exist. If a locational view of time is a moment at which something happens, the duration of or between things, then a similar dimension of space is a location of things, the area of or between things. Our occupational interest in space is related to our human position within it and movement through it through engagement in occupations.

We are embodied, spatially dimensional as well as temporally. We are moved through space—our expanding universe, our planet’s rotation around the sun, and in my home in California, the earthquake movement of the earth beneath our feet. We also act, we move in space, as does matter within our bodies, blood, air, and chemicals that are our food and waste. Our internal and external movements change the relationship within our body, between our own and other bodies, between our planet and other astronomical bodies, between all the elements of matter of our universe. These changing relationships produce the perception of time and the experience of temporality. Similarly, the experiential nature of space may be in our recognition of place, the perception of, and meaning of place as shaped by our occupations, our “occupatio-spaciality.”

Because we are (embodied) “beings,” we are “doers” (act and move), we are “becoming,” we are spatiotemporal creatures, located in and experiencing both space and time. If our life is a tapestry, then its design is formed of our location and experience of space and time, the warp and the weft, woven together through the patterns of our occupations. A pattern is a design; an arrangement or disposition of elements. In this case, occupational patterns are the designs of our occupations in time and space, the arrangement of temporal and spatial locations and experiences.

The gradually developing awareness of space, as of time, begins with our own body. Merleau-Ponty noted, “Far from my body’s being for me no more than a fragment of space, there would be no space at all for me if I had no body” (1962/2002, p. 112). Henderson directed occupational therapists’ and scientists’ attention to our interaction with the spatial environments of body space (our body and body surface perceptions,

known through proprioception or kinesthesia), grasping space (the area within our reach, known by functional movement of our upper extremities), and distal space (that area beyond reach through which we move our bodies) (Blanche & Parham, 2001; Henderson, 1996). Perceiving space requires the brain to process multiple sources of sensory information from the level of Brainstem Betty's differentiation of predator or prey, through Limbic Lou's feelings stimulated by a whiff of familiar aftershave lotion, to Neocortical Nell's cognitive construction of the map of a trip to work, or image of cyberspace. But just as the experience of temporality is different from the physical cosmic time, physical space too has its experiential partner.

How does "space," a physical entity, become "place," a meaning entity? What makes a house or an apartment, a castle or a hovel, "home"? Place is made both physically and symbolically. In Relph's (1976) classic presentation of the phenomenology of place, he identifies the essence of the subjective experience of place which makes it so different from space. Although a place is commonly but not necessarily an identifiable location, there must be some recognizable qualities, natural or constructed appearance, or something reflecting human activities and values. The stadiums of our cities are easily recognizable places. Its essence is that "Place is a centre of action and intention, it is 'a focus' where we experience the meaningful events of our existence" (Norberg-Schulz, cited by Relph, 1976, p. 42). "Space is transformed into place as it acquires definition and meaning" (Tuan, 1977, p. 136). Place develops from the patterns of occupational interaction that occur there and their meaning to us, indeed "some events and actions are significant only in the context of certain places" (Relph, 1976, p. 42). What occupations are enacted in what kinds of places or spaces? What is a "sacred" place (church, temple, shrine, "green cathedral")? What is a public place versus a private place?

Place attachment is a bonding of person to place. We feel connected to a place based on our occupational past there and our perception of occupational potential within it (Altman & Low, 1992). "[A] place has personal significance, a significance established through time spent in or with the space . . . personal experiences, either direct or vicarious, lead the person to attach meaning . . . linking significant life events, key developmental themes, or identity processes with a particular environment. . . . Place attachment is not a state but a process that continues throughout life" (Rubenstein & Parmalee, 1992, pp. 142-143). "While it takes time to form an attachment to place, the quality and intensity of experience matters more than simple duration" (Tuan, 1998, p. 198).

Rowles's (1991) findings illustrate the importance of quality, intensity, and duration of experience with place in his study of elders in their small home town: that place became a component of self. Over many years of living in the same community, the spatial environment had developed an historical time-depth of meaning, with layer upon layer of meaningful life experience accumulating. It became linked to their personal history and became a part of their self-identity. It was a place, not a space, and their self-identity had place identity. When I describe myself as "an American; a Californian transplanted at midlife from Wisconsin," I believe I am not just reciting my temporal history, my spatial geography, but saying something about myself.

Placemaking is the act of creating and maintaining places (for example, homemaking)—a human occupation often in collaboration with others. Hasselkus (1999) defined occupational therapists' unique act of placemaking, making a therapeutic occupational place, in terms of the experience of intimacy and connection between therapist and client defined by the doing of occupation. The act of making and maintaining that therapeutic place takes time, first developing rapport and understanding of the situation; then, engagement in the therapeutic occupation; and finally reaching the state of relative well-being brought about by therapy.

### **Time and Space, Temporality and Place**

"We have a sense of space because we can move and of time because, as biological beings, we undergo recurrent phases of tension and ease. . . .When we stretch our limbs we experience space and time simultaneously—space as the sphere of freedom from physical constraint and time as duration in which tension is followed with ease. . . .A pace is not only something we can see—the span between one foot and another—but it is also felt in the muscles. How is the pace (step) . . . related to time? A pace is a unit of time because it is felt as a biological arc of effort and ease, strain and relaxation. One hundred paces means one hundred units of a biological rhythm that we know intimately" (Tuan, 1977, pp. 118, 129–130).

Hall (1983) noted that the study of time and space "has led the human species out into the universe, down into the heart of the atom, and is the basis of much of the theory concerning the nature of the physical world" (p. 203). Space and time constitute important elements of the set of patterns we call culture. Time talks and space speaks, as part of our silent cultural body language (Hall, 1959/1981). Space and time have held the attention of others (Bachelder, 1964) who have defined the nature of time and space through the experience of time and space by individuals within their culture.

Rowles (2003) reminded us that the "experience" of time and space also can be vicarious participation in spatially or temporally displaced environments. For example, we may experience temporal and spatial displacement with reflective involvement while paging through an old photo album or watching family slides, home movies, or videos from our past. (I certainly felt momentary displacement when I saw some of those slides of me that Dr. Royeen showed us!) We experience vicarious projection into places that are geographically displaced from our current location while reading literature, watching movies, playing video games, or surfing the Internet.

Time and space can constrain or enable occupations. In the real world, a time-space prism (Dear, 1996) determines where, when, and, in some ways, what occupations we can do. The time it takes to move through space limits the distance we can travel between occupations. Certain activities are constrained or enabled in certain times and places. We have a certain degree of occupational time and place dependence. That is, we depend upon times and places to allow us to "be" and "do" our selfhood through our occupations. They provide temporal and spatial occupational affordances for our activity, like the physical affordances

of surfaces and objects. Places are “behavior settings” (Barker, 1968), where individuals and their surroundings together create systems from which emerge a certain behavioral status quo, the stability of place. Place influences the type, frequency, duration, and style of behavior, and through occupational behavior, influences lifestyle and well-being (Hamilton, 2004). Location in developmental time can enable but also constrain our occupations, often for the benefit of others rather than our own health and well-being, as when any age group is limited by the phrase “act your age!”

Life is continuous development of occupational horizons, or boundaries of our perceptions of the spatial and temporal world, and Blanche and Parham (2001) offer tentative examples of some of them. For example, the infant’s beginning organization of occupation is within the horizon of its own Body Space in the Present (p. 191). For the infant, co-occupations within this horizon are breastfeeding and cuddling with their caregiver. An adult may find occupations such as meditation or receiving a massage within that same horizon. Another spatiotemporal horizon of occupation is that of Reach Space in Proximal Time (p. 192), or interactions within what Hall (1966/1982) called personal space, occurring within a time frame of minutes to hours in infant occupations such as manipulation or mouthing of toys (Pierce, 1997) and for adult occupations such as computer keyboarding. A spatiotemporal horizon called Moving Through Proximal Space and Time is exemplified by occupations such as dancing, playing football, or maneuvering through a crowded public space. Expanding horizons even further, Moving Through Cognitive Space in Extended Time, the individual is able to organize time and space to “orchestrate a stream of occupations into a daily round of activities” (Blanche & Parham, 2001, p. 193). The furthest horizon of time and spatial organization of occupations they suggested was Imagining Action in Distant Time (p. 193). They posit that praxis is the “organizational process that manifests itself in motor control as well as in general organization of behavior” (p. 183) and that a “dysfunction in this basic spatiotemporal organizational mechanism [such as developmental dyspraxia or adult apraxia] manifests itself throughout the lifespan” (p. 183). It is the role of the occupational therapist not only to address organization of simple motor behavior in proximal space and time, but to consider treatment approaches that will help our clients organize space and time in occupations across “increasingly more abstract and complex spatiotemporal horizons” (p. 198).

Rowles’s (1991, 2003) research reflects these occupational temporal-spatial horizons in our everyday activities as we move through our daily life along our familiar pathways. His research found a rhythm, in time and space, of routine taken-for-granted occupations. One pattern was development of body awareness of one’s home and objects in it. Repetition of occupations in a familiar setting with familiar objects over the years allowed elderly participants to handle space on an unconscious level and helped them adapt for changing sensory abilities. Body awareness in the larger environment beyond the home was part of an occupational pattern of their routine community participation, like a familiar dance, with people and places in temporal, spatial, and social synchrony.

We mix time and space; in our thinking time is described in “length,” or even volume (having a big time out!). And space is measured in time. Modern life means we wonder how

long (spatial term for time) we will have to look for a parking space and whether we should have allotted a bigger block (spatial term for time) for our next appointment. Tuan (1998) explains, "An explanation for the wide use of time to measure distance is the fact that units of time convey a clear sense of effort. The useful answer to questions of distance tells us how much effort is needed—what resources of energy are required—to achieve a goal" (p. 128).

Occupational engagement requires attention as well as muscular energy, and our choices of occupation are constrained by limited attentional resources. Because of limited energy for attention, optimal choices of occupations throughout the lifespan are important to support development. (Csikszentmihalyi, 1974, 1990; Csikszentmihalyi & Csikszentmihalyi, 1988; Csikszentmihalyi & Larson, 1984). Csikszentmihalyi recommends a purposeful, agentic occupational life resulting in feelings of temporospatial harmony in which one's varied activities fit together into a unified flow experience, producing a meaningful life experience. It's hard to attain this level of meaning in our life, and adolescents are an age group that seems to have particular difficulty finding ideal occupations for its development. Adolescents frequently do not experience the state of flow where their skills and the challenges of their occupations are above average, but well-matched. Instead, they engage in occupations in which they experience a state of apathy or boredom, with low skills and challenges (Farnworth, 2000). An example of this is seen in research from my recent grant project (Zemke, 2000), the work of Qu (2003), reported at this Minneapolis AOTA Conference (Qu, Zemke, Chu, & Sun, 2004), studying the quality of occupational experience of young adolescents during smoking.

We carried out an ESM study of over 100 children in the Los Angeles area. These middle school 12-year-olds reported their experience of occupations in over 3,000 "beeped" responses on their Palm III PDAs. Forty-three percent of the students were categorized as smokers or experimenters, somewhat lower than the over 50%–60% of teens usually categorized as such. The time of day of smoking incidents reflected school breaks, after school, late-afternoon, and early-evening peaks, and over 10% of the places where they smoked were that back corner of the school grounds that we all probably remember from our school days, out on the urban street, and alone in their bedrooms. In addition to smoking, secondary occupations they were sometimes engaged in were passive, "just thinking," TV, or listening to music. Their experiential state during smoking was one of apathy, what Csikszentmihalyi and Larson (1984) called an entropic or disordered cognitive state, with below average affect, low levels of activation, low cognitive efficiency, low motivation, and low self-concept. Even more interesting was their experiential pattern previous to, during, and after smoking. When beeped prior to smoking, their responses commonly indicated below average responses to most of the measures of their experience. The trend that was seen in 22 of 28 measures was that those low feelings dropped even lower during smoking, but then were higher when beeped after the smoking incident. It would appear that smoking may be an adaptive strategy used by the young people to improve their experience of life, although making it worse before it gets better. Nonsmoking students showed similar patterns of occasional apathy with improvement following engagement in a variety of occupations. These results suggest directions for

development of a program of Lifestyle Redesign for the young people, assisting them to find and choose healthier occupational strategies for improving their daily experience.

## **Time, Space, and Occupation: Home and Work**

“Time and space are directed when one is actively planning. Plans have goals. Goal is a temporal as well as spatial term. . . . In purposeful activity, space and time become oriented with to the active self” (Tuan, 1977, p. 128).

Let’s look briefly at some examples of such purposeful activity, the occupations carried out at home and work, in terms of their temporal and spatial dimensions. For adult Americans, work is a descriptor of the self. This holds true even for some Americans who have little to no job opportunity and thus feel lower self-worth because of unemployment (Wilson, 1998). Ehrenreich (2001), in her “undercover” role as minimum wage worker, noted that few of her coworkers felt deceived. But then she realized that people knew her as the waitress, cleaning person, nursing home aide, or retail clerk not because she was acting like one, but because that is who she was, at least at that time and place. In the closing of a furniture manufacturing plant in the South, Bamberger and Davidson (1998) noted the impact on the workers of the loss of their temporospatial activity, work, at White Furniture Company. The blue-collar workers who stayed at the plant for years before and then during its closing chose to stay because, to them, it was a career, their life, not just a job. These people constantly used metaphors of death to describe the loss of their workplace and work time because they felt that something of themselves died when White Furniture closed.

Let’s consider the routine of going to work in the morning and returning home at night. This is such a habit for us as we move in time and space that we give it little thought. Yet ritual surrounds these to-and-fros. Each day is a new day. In the morning, work lies ahead, in one’s future. Movement to it is forward movement. Although work may be routine much of the time, novelty is always a possibility if only because one may meet strangers whose behavior cannot be predicted, or external events may be unpredictable. Uncertainty and the potential for surprise are characteristics of the future and contribute to a sense of the future. At the end of the day the worker prepares to return home. “We return—tracing our steps back in space—and going back in time—to the familiar haven of the home” (Tuan, 1977, p. 127). Home is where one starts from and where one returns in this daily journey (Casey, 1993). Home is a place full of familiar objects that we have chosen and know well through frequent daily use. “Home is an intimate place . . . ‘where every day is multiplied by all the days before it’” (Stark, cited by Tuan, 1977, p. 145). “Home place and quotidian life feel real. . . .The real is a familiar daily round, unobtrusive like breathing” (Tuan, 1977, pp. 145–146).

Larson and Zemke’s (2004) discussion of occupatio-temporality is nested within a review and synthesis of factors in the orchestration and synchronization of daily activities for dyads and groups in both work and home place contexts. For most of us, occupational boundaries, our lines between home and work, are drawn through the dimensions of time and space. We put physical, mental, and behavioral edges or borders or bridges between these two occupational settings. Nippert-Eng (1995) speaks of the “territory” of the self, presenting the self not

just as a mental construct, but as located in space and time, manifest as the behavior of our embodied self. We embed this self in and associate it with particular environments, such as home and work, which evoke associated activity. Not only unique “doings,” but unique “ways of being” may accompany our engagement within the temporal and spatial boundaries of work or home or the transitions between them. A comparison of workplace and home reflects the way aspects of the self are situated within or shared through these occupational settings’ spatiotemporality. As we change times and places, commuting between work and home, our occupations may be self-integrating, supporting our common self, or self-segregating, separating different aspects of our self. For example, in “public” time and spaces we are normally accessible and accountable to others, while in “private” time and space we are relatively inaccessible and unaccountable (Zerubavel, 1985). Work is associated culturally and historically with more public temporalities and places, in contrast to home. Although we traditionally think of physical separation or segmentation of these realms of activity as occurring in time and space, Nippert-Eng (1995) reminds us that an even more definitive mental segmentation and transition accompanies our physical ones. Time and space and the physical journeys within them are not the essence of the boundaries and transitions between occupations, but, rather, the “grease that helps our mental gears shift” between the ways of thinking, being, and doing. Zerubavel (1991) suggested that the worlds of work and home required a mental leap to transition, whereas Nippert-Eng suggests that if they are more integrated, they may require only a mental stroll. Dickie (1996) reported on the fluid spatiotemporal boundaries between the “productive” work and “reproductive” family obligations of people who produce craft work in their home. However, in our segmented contemporary American society, frequent transitions are required of most of us.

Liminality (Turner, 1967, 1974; Van Gennep, 1960) refers to cultural transformations in which people leave one social status and enter another. Although it has not usually been applied to a daily repeated dis- and relocation of status and selfhood, the concept fits the daily commute well:

Relative to home and work, the journey between them is a spatially, temporally, and socially “interstructural” location. For this reason, it offers the perfect opportunity for mental transitions between realms. As the journey physically dislocates and relocates us, it simultaneously encourages us to mentally detach from and reattach to the realms and selves on either side. (Nippert-Eng, 1995, p. 119)

As a commuter in Los Angeles for the last 25 years, I had never thought of my time in the long, narrow parking lot called the freeway as a liminal experience, daily changing my status and self from homemaker to employee and back. Would greater segregation or greater integration of my time, space, and self have eased that burden?

### **Occupation, Time, and Space Within the Kaleidoscopes of Culture**

As an occupational scientist, I find culture interesting mainly as a group’s view of what occupations are important to engage in and why, when, where, and how we do them. Bonder, Martin, and Miracle (2004) promote a dynamically focused view of culture as a “system that

emerges through the everyday interaction of individuals" (Bonder et al., 2004, p. 162). Thus time and place both affect the expression of culture. Culture is learned and its values are local (developed through interactions at particular times in particular locations). The "ability of cultures to incorporate new ideas, to borrow from other cultures, to assimilate new information, is a strength that enables cultures to persist" (p. 164). As a cultural group, we Western occupational therapists need to carefully assess how our ideas of time, space, and occupation should be shared globally.

Blanche and Henny-Kohler (2000) suggest three ways of sharing knowledge between geographic regions, reflecting potential styles for occupational therapy in the United States and other countries. The first style is one of dependence or colonialism, perhaps many people's view of globalism today. It means importing ideas and techniques into one geographic area from another without evaluation of their fit to regional ideology and practices. The second way, independence or nationalism, protects tradition in an area by rejecting imported ideas and techniques, but results in a lack of information from outside our own familiar ideas and practices. The third, interdependent style favors regional or local research and education along with international exchange. American occupational therapy and occupational science have developed research and practices that are being shared globally. However, for most effectiveness, they must be evaluated for their relationship to local culture and ideology.

"Each culture believes that every other space & time is an approximation to or perversion of the real space and time in which *it* lives" (Mumford, 1963, p. 18). "Temporal patterns are at the crossroads of a vast web of cultural characteristics; they permeate the personality of a place" (Levine, 1997, p. 188). "We become conscious of this thing named culture when we leave our world and come up against differences—substantive and stylish differences in the way the ordinary practices of life are carried out, differences in what matters and what doesn't" (Dickie, 2004, p. 170).

Between 1998 and 2002, I spent from several months to half of the year in Japan, consulting and teaching in a developing graduate program. I was faced by much that was familiar in my home and work settings, but much that was different. The temporal and place qualities of the occupational category of "work" in Japan and the United States may be considered cultural forms (Trice, 1993), forms that contrast the cultures on the surface and also reflect underlying cultural ideologies. This overlay is exemplified in Dickie's discussion of family reunions (2004, p. 172) in which the forms may change as immigrant families acculturate, but the underlying ideology valuing family is retained.

As Hall (1966/1982) and Levine (1997) explored other cultures, they noted that the Japanese view of time and of place, or *BA*, includes another important basic cultural concept of *MA*. To Westerners, this is the space between two things, the time interval between two events, an emptiness. To the Japanese, one aspect of *MA* is that of *HASHI*, or bridging in both time and space. It recognizes not only the edges, boundaries, and the spaces between these occupational settings, but bridges between them (Hall, 1983, p. 210). As *MA*, the space between a table and a chair is not empty, but "full of nothing," acting as a bridge between them. *MA* is reflected in many aspects of daily life. The temporal give and take of conversation and dialogue is different. In Japan, as in most Asian countries, it is important

to wait before speaking, to indicate time spent in thinking over what the other has said before thoughtfully entering one's own comments. The meaning of the silence is culturally recognized by the Japanese. In fact, one way to say no without saying it may be in a significant pause before saying yes. That pause is full of meaning to others in the culture, although not to a Western listener. "To most Westerners, a lack of overt activity signals that nothing is happening." But in Japan, "periods of nonactivity are understood to be necessary to any meaningful action" (Levine, 1997, p. 197). As Iwama (2003, 2004) notes, "*becoming, being, and then doing* may be a more understandable progression to the Japanese experience" than Wilcock's (1998) "*doing, being, and becoming*" (p. 249).

Because of the American focus on the individual, children learn to express their unique self, to attend to their own needs, request that these be met, to use their ability to do what is necessary to meet them. In contrast, Japanese children learn instead to harmonize with the group, that belonging is more important than doing in defining self (Iwama, 2003, 2004). They expect that in exchange people will be kind and considerate, that it is not appropriate to ask for things because what you need will be given to you by the group.

The temporality and place of the Japanese workplace has its roots in the group-oriented principle of *GIMU* (Benedict, 1946/1989; Kondo, 2004), obligation to others. "Virtually every social relationship is structured around clearly delineated duties" (Levine, 1997, p. 179). Core obligations are to one's home (family) and work (company). A major source of happiness and well-being is the "pride that the Japanese feel when successfully repaying their ON (Levine, 1997, p. 179) or debt (Benedict, 1946/1989) to these groups. The sense of obligation and responsibility to the group is strongly linked to a sense of *shoga-nai*, accepting conditions, being situated, knowing one's place in the group at any time (Kondo, 2004). This place includes *Gaman-suru*, enduring the hardship of a junior or beginning place and time in the group.

According to Levine (1997), the Japanese, being so group-oriented, seem to demand less private time (home time, leisure time) than do people in the United States, tending instead to stay around the group in the more public workplace, spend worktime developing and strengthening their relationships, go out to eat and drink together. The resulting *WA* (harmony) drives the motivation of the Japanese workforce. The relatively fuzzy boundary between work and social life reflects fundamental attitudes toward the nature of work and nonwork time (Levine, 1997, p. 179). Social relationships similar to friendships are expected to develop in the workplace and time. Sharing social "'down time' . . . is necessary for the *WA* (harmony) that . . . colleagues and Japanese society in general . . . value so highly" (p. 180). What Americans might view as "wasting time" in the workplace is a very important part of the job. Long hours at work are their obligation to their workplace, but with time, seniority will bring rewards. "*SENYU KORAKU*," struggle now, enjoy later, is a proverb. This belief—that what they are doing is part of the group effort—may be their principal buffer against stress.

"The impact of globalization on localized cultures must . . . be addressed. The development of occupational therapy theories that are sensitive to particular cultures is apt to lead to more culturally sensitive practice. . . . It would seem that best practice in any localized

culture must take the universal as well as culture specific aspects of occupation into account” (Kondo, 2004, p. 182). Universal as well as local theories of occupation and occupational therapy theories need to be developed (Clark, Sato, & Iwama, 2000; Hocking & Whiteford, 1997; Kondo, 2004).

## **Time and Place: NowHere**

The mirrors and lenses of the kaleidoscopes of time and place illustrate multiple facets of the complexity of occupation. If we look through the lenses of Here and Now, we can see the image that Friedland and Boden (1994) called “NowHere.” What do we see for our role as occupational therapists, given our focus on occupation? Our new AOTA president, Carolyn Baum, has encouraged us to “create a process to identify topics for, and develop position papers on, key issues important to society” (LaGrossa, 2004, p. 15). We can begin to identify appropriate topics for such engagement by looking at our beliefs, assumptions, and current evidence regarding occupation. First, we can ask, “How is occupation related to health?” Based on Yerxa (2000) and our current Framework, we can think of health as existing when people’s resources enable them to achieve valued goals through meaningful occupational patterns of participation in their communities. The occupational health of individuals and of societies are linked together—the problems of an economic recession resulting in widespread unemployment is a societal health problem and to the individuals affected a personal occupational one as well, resulting in occupational insufficiency or deprivation. Accepting that link, then when we look for key issues important to society and ask “What is a healthy society?” One answer is that a healthy society is one that enables meaningful occupation for all (Westhorp, 1995; Wilcock, 2003). A society that enables occupation for all will require not only health care change, but political, economic, and other social change. The suggestions for how to get that change are not new ones. The World Health Organization’s Ottawa Charter for Health Promotion (1986) proposed that action was needed in five major directions: (1) building healthy public policy; (2) creating supportive environments; (3) strengthening community action; (4) developing personal skills; and (5) reorienting health services beyond the provision of clinical and curative services toward the pursuit of health. These are ideals we can accept and use to identify topics and our positions to respond to this key issue of developing a healthy society enabling occupations for the health of all the people!

“Subtlety and modesty are appropriate for nuns and therapists, but if you’re in business, you’d better learn to speak up and announce your significant accomplishments to the world—nobody else will” (Trump, 2004, p. 2). Well, Mr. Trump, these therapists are ready, in this place and time, Here and Now, to stand up and announce our accomplishments to the world. The Fund To Promote Awareness of Occupational Therapy speaks with the voice of each one of us! We speak for our field—occupational therapy, for our discipline—occupational science, and for those whom we teach and serve. We work for the full participation through a healthy round of occupations of all people in their communities (their meaningful places) around the globe (today and tomorrow), each day of their lives! We work for participation in healthy occupation for EVERYBODY, EVERYWHERE, EVERY DAY!

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