Drawing Embodied Spatial Networks in Parallel with Sustainability of Place

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Abstract

With connectivity, we as human beings can sustain in place we live in due to potentials for interlinks and exchanges with others. In this context, *spatial networks*, physical organizational fabrics of potential links between human nodes in living systems (Salingaros, 2005, p. 11-13) and sustainable constructs of place can be integrated out of *embodiment as localization*. This paper aims to re-investigate the relationships between theoretical grounds in an interdisciplinary way that bridge spatial networking and sustainability of place-making. The review focuses on examining discursive relationships in which the courses of connective modes and interconnected potentials intersect with the subjects of sustainable concerns towards place-making. This matrix relationship determines an argument that sustainable places need systematic, integral potentials of experiential interconnectivity between life-relational environments through which *embodied inbetween networks*—that human interactions engage with spatial connective forms—create associative, social realms and collective identity of place. Logical, embodied networks of place enable to identify inbetween modes of place networks and lend themselves to form meaningful, organized spatial configurations in place creation. By which a domain can be bonded as well as retains aesthetics of living survival by means of inbetween modes, potentials of embodied environmental networks thus contribute a place to be as interconnected, living, and sustainable as a systemic entity.

บทคัดย่อ

มนุษย์สามารถดำรงอยู่ในถิ่นฐานและสภาพแวดล้อมอย่างยั่งยืนได้ ก็ต่อเมื่อมีศักยภาพในการเชื่อมโยงความสัมพันธ์เพื่อติดต่อแลกเปลี่ยนกับสิ่งอื่น ๆ รอบตัว ในบริบทดังกล่าว โครงข่ายทางพื้นที่ซึ่งเป็นระบบโครงสร้างทางกายภาพของการเชื่อมต่อระหว่างพื้นที่กิจกรรมรวมคนมีความสัมพันธ์กับการสร้างสรรค์ความยั่งยืนของสถานที่ ดังนั้นบทความนี้มีเป้าหมายเพื่อทบทวนทฤษฎีและการเชื่อมโยงความสัมพันธ์ระหว่างโครงข่ายทางพื้นที่และการก่อเกิดความยั่งยืนของการสร้างสรรค์สถานที่ การวิเคราะห์ทฤษฎีมุ่งเป้าหมายในการตรวจสอบความสัมพันธ์โดย

ปฏิสัมพันธ์ระหว่างแกนของโครงข่ายพื้นที่ที่ประกอบด้วยกระบวนการในการเชื่อมต่อและประสิทธิภาพของปฏิสัมพันธ์
กับแกนของความยั่งยืนที่ประกอบด้วยปัจจัยของความยั่งยืนและวิถีการสร้างถิ่นที่ โดยความสัมพันธ์ในลักษณะ
ดังกล่าวยืนยันการสนับสนุนข้อโต้แย้งที่ว่าสถานที่เพื่อความยั่งยืนต้องการศักยภาพของระบบการเชื่อมต่อระหว่าง
สภาพแวดล้อมในเชิงประสบการณ์ โดยโครงข่ายเชิงปฏิสัมพันธ์ระหว่างสถานที่ที่สามารถสร้างมิติความสัมพันธ์
ของคนซึ่งเกี่ยวพันกับคุณสมบัติของการเชื่อมต่อ การสร้างสถานที่ทางสังคม และเอกลักษณ์ของสถานที่ ดังนั้นถ้า
ศักยภาพของโครงข่ายสภาพแวดล้อมเชิงปฏิสัมพันธ์มีอิทธิพลในการทำให้สถานที่แห่งหนึ่งแสดงความเป็นเอกภาพ
และความหมายโดยกระบวนการการเชื่อมต่อความสัมพันธ์ที่ประกอบด้วยมิติของชีวิตและความยั่งยืนแล้ว สถานที่
แห่งนั้นจะได้รับการสอดประสานความสัมพันธ์ที่สืบสานสุนทรียภาพแห่งความยั่งยืน

Keywords

Spatial Networks (โครงข่ายทางพื้นที่)
Sustainable Constructs (แนวความคิดเพื่อความยั่งยืน)
Place-Making (การสร้างสรรค์สถานที่)
Embodiment (การปรากฏตนเชิงปฏิสัมพันธ์)
Inbetween Modes (วิถีความสัมพันธ์ระหว่าง)

1. Introduction: Significance of Spatial Networks Relating to Sustainable Constructs of Place

"The network in ecosystems is one of very basic patterns of organization of all living systems. At all levels of life, from the metabolic networks of cells to the food webs of ecosystems, the components and process of living systems are interlinked in network fashion." (Yeang, 2006, p. 152)

The network in eco-sustainable systems is pertinent to the *conception of interconnective means* as a structural web of linking interacting parts to represent a whole form made alive. In other words, the network turns out to be an essential form lying behind all living physical entities (Buchanan, 2002, p. 17-19) as well as places, considered as *the inbetween modes of layering juxtaposition*s. To argue for sustainable place-making, the place network lies not in a web of connected lines but in an organized, complex system of inbetween domains, to which humans interact, for constructing presences of environmental connections of place. Therefore, the place network develops into embodied spaces of connectedness and relationships.

On a view of urban place-making, *spatial networks* or theory of *space syntax*, originated by Hillier and Hanson (1984), which is fundamentally based on the notion of the relationship between spatial configurations and social life, are significant for sustainable constructs of place in that spatial networks draw interrelations between existing diverse spaces immersed into the content of social activities in a settlement that form the entire place and community and its lively street networks. Spatial networks are recognized as pathway and street counterparts for movement through an urban setting (Lynch 2000; Salingaros, 2005). As Salingaros (2005) proposes *Theory of the Urban Web*, spatial networks comprise of different paths and connections leading to a living system and urban form by "inverse-power scaling law:" a few of large size, several of immediate

scales, and very numbers of small ones (pp. 11-13). In fact, spatial networks help information flow and exchange: they allow people to interact with each other on a regular basis and affect meaning of a particular society, community, and place. Therefore, theoretical grounds of spatial networks agree to the similar conclusion that "the more strengthened the connections and the more substructures the network has, the more living a city has" (Salingaros, 2005, p. 17). Based on the previous assumption, spatial networks is interweaving to sustainability realms that intrinsically aim to make a place more livable.

Spatial networks generating complex livability, social interactions, and communal awareness in public places are oriented towards sustainability by means of supporting aesthetics of living in nature. By the underlying definition, "the term of sustainability has come to mean improving the quality of human life while living within the carrying capacity of supporting ecosystems" (Moore, 2001, p. 20). In this definition, sustainability is composed of and balanced by two stances; first, an anthropocentric concern refers to "improving quality of human life" and second, an ecocentric concern conveys ecological and regenerative reinforcement of life. Similarly, "responsive cohesion" in sustainable architecture, as Fox argues, is obliged to reciprocal responses between ecological, social, and built contexts in order to make up the whole (Williamson, Radford, & Bennetts, 2003, p. 128): a synthesis of environmental orders and symbols (Langer, 1953, p. 96-98) makes built places for humans to realize, experience, and interact with environmental presence.

To draw spatial networks in parallel with sustainable constructs of place needs to intersect their relationships with a matrix in which their intrinsic structures come to meet by means of dialectics between modes and products (Figure 1). Both spatial networking and sustainable constructs are *acts of making*—being involved with concerns,
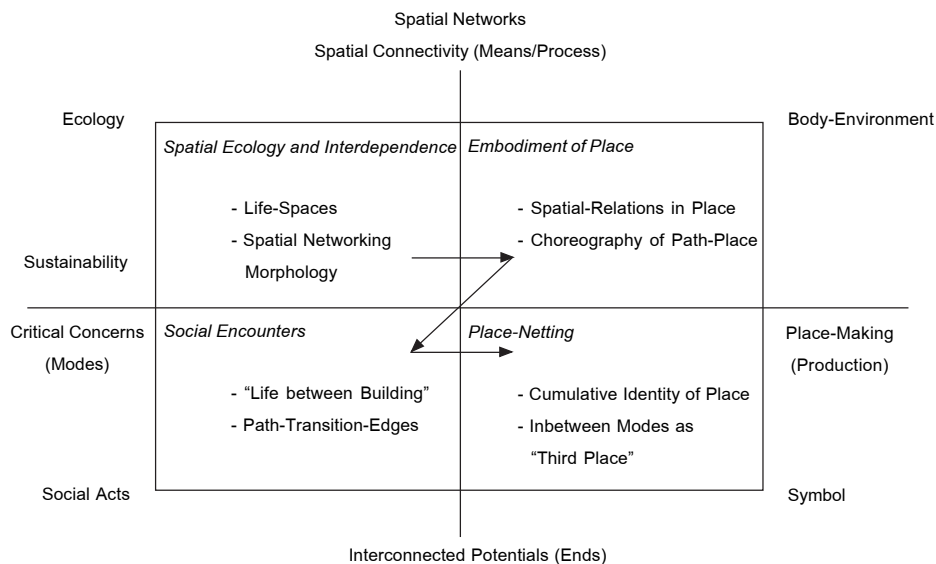
Figure 1. A matrix drawing the relationship between spatial networking and sustainable constructs of place.

methods, and processes—*towards the outcomes*, thereby possessing the relationships between *means and ends*. Spatial networking takes account of the connective process by means of creating spatial ecology and embodied spatial-relations in an attempt to build up interconnected potentials of collective lives in place and "third" inbetween places of netting holistic place as consequences. Meanwhile, sustainable constructs of place embrace two courses of ecological and social modes towards the product of place-making that involves two facets: the relationship of bodies in environment and environmental symbols. By having been interwoven, a matrix comes up with four interrelated quadrants that touch on four mingled themes: *spatial ecology and interdependence, embodiment of place, social encounters, and place-netting*, all of which are associated in sequence.

Spatial ecology and interdependence arises from ecosystems of "life-spaces" (Kliensasser, 1999, pp. 105-107), environments we need for living survival by which spatial networking morphology must retain a basis of spatial connectivity in life ecology. Whether spatial networking continues its potential performance fundamentally depends on the relationship of "bodies-in-place," that is, the way in which we as lived beings interact with the environment as choreographing our paths to realize spatial presence of place, thereby considered as *embodiment of place*. In fact, we experience paths and place as being *in*. Being experienced as a coherent form, a place requires its connective functional networks to obtain their *organized complexity* of multiple connections (Salingaros, 2005, p. 20-21) and identification defined by transitional edges enabling for pauses. Pauses or co-presence on edges of place and in path networks take into account spatial orientation and possibilities of public life: sociability, interactions, and lively street activities recurring in place (Hillier, 1996), so called *social encounters*, that is what Gehl calls "life between buildings" (1987). *Social encounters* through supportive pathway networks result in possibilities of mutually shared experiences that become an underlying concern of sustainable community making; therefore, contribute to communal attachment and identity (Sassi 2006, p. 53; Knox & Mayer, 2009, p. 76). Cumulative Identity of place is a social-constructed symbol that is collective, inherited, authentic, and belonging to which environmental networks' overall configurations and spatial presence manifest themselves as an organism of inbetween

modes of place. If inbetween networks of place are systematically fabricated as "third places" in public arenas encouraging bodily engagement and a series of rhythmic movement, sequences of events, and societal interconnected juxtapositions, the embodied place webs will construct a systemic, eco-sustainable place as the whole through *place-netting*.

2. Spatial Ecology and Interdependence

The primary, essential concern of sustainability lies in an ecological orientation in order to generate life longevity, that is, prerequisite to sustainability (Sassi, 2006, p. 53). Ecology is principally the study of the relationship of entities within the environment; everything is interconnected in a whole single web of life enabling form (Hester, 2006, p. 49). As the *embodiment* explores existential understanding of phenomenal beings in ways that integrate with environments; in this context, environmental ecology focuses on potential interconnectivity of place within experiential, spatial patterns of life-relational environments. In sustainability context, an ecological system of a livable place for life longevity needs to retain interrelationships of *life-spaces*, considered as *spatial ecology* of human environments, in which depends on potentials of *spatial connectivity*. Spatial networks, in turn, develop to be critical structures in life ecology so that physical, environmental *interdependence* for survival can be emerged.

In ecology, life circuits; humans need a diversity of life-relational environments to serve and support their experiential, emotional, and objective needs—called *life-space*. Kleinsasser (1999) explains: "life-space is defined as the precise networks of facilities, qualities, and opportunities needed by people if they are to achieve their full potential as human beings" (p. 105). People extending to ecological living require experientially supportive environments for each individual and for each life circumstance: life-space must be stimulating, meaningful on several levels, full of possibilities of spontaneous involvement and effective use, and alive with varieties and choices for those inhabit it. Life-space for one person is not the same as that for anyone else; the same place may be supportive for one person but unsupportive for others. Or, many people possibly find the same common places as their experientially supportive environments and share those places in their life-spaces. Life-spaces in place therefore embody particular and shared environments, experientially supportive for both individuals and groups (Kleinsasser, 1999, p. 105). The concept of life-space mainly concerns the combinations of individuals' life-spaces: facilitating and supporting lives in four dimensions—three basic embodied schemas and extended time. Environmental experience is continuous. Interrelations between life-spaces turn into a crucial momentum that chiefly relies on paths as extensive choreographed networks. The subsequent concern here is how extensive supportive networks bridge life-spaces—from place to place—so as to form a web of spatial ecology. It is, in effect, necessary to understand the logical connective process of the network.

The network or web takes place due to competency of connectivity between human activity nodes. An organized network integrates multiple connections with a hierarchical ordering. It emphasizes potentials of connectivity and functionality, rather than a formal priority (Salingaros, 2005, pp. 20-21). As Salingaros proposes, theory of the urban web derives from the connective processes among urban elements including mathematical consideration. The urban web is a complex organizing structure of existence in spaces between buildings: exterior and connective elements—path systems: pedestrian, streets and roads; architectural elements: facades, edges, walls; and spaces: external nodes and open spaces (2005).

The urban web is composed of complexity and sufficient systemic organization, thereby contributing to the living "*organized complexity*" of connectedness in a community. Web connections are generated from three structural principles: nodes as anchors of human activities whose interconnections make up the web, connections forming between complementary nodes, and hierarchy of connections on several different levels of scale (Salingaros, 2005, p. 19). Successful connections of the urban network consist of many fractal subdivisions, non-rigid irregularity and a multiplicity of alternatives. Connective processes of the urban web are similar to fluid flow occurring merely between points of different potential. The network is constructed when contrasting nodes are located to provide active linkages between like nodes: multiple connections are established between complementary nodes, then joined together into paths which also connect like nodes. For example, the need to go from home to a store, an office, a school, a park creates web connections; on the other hand, connections are unlikely to occur between the need to go from one house to another. In other words, web interconnections will take place in organized, diverse environments of uses against segregated and concentrated functional contexts (Salingaros, 2005, pp. 20-30). This networking process indeed reinforces a similar Hillier's space syntax finding (1984) in the fact that global structures (pathway networks) consist of the hierarchical system of integration and segregation cores lines, which unites *a* diversity of activities within traditional settlements. Integrative core lines simultaneously link and take apart different types of activities—public and private places—in juxtaposition. Moreover, intermediate nodes need to be placed between two activity nodes in order to generate a web of path connections. The spatial network, in this way, manifests itself as a critical *dual mode of sub-divisive associations* in spatial ecology to connect environmental fractals developing an interdependent whole.

To sustain spatial ecology is significantly to generate the logical connective process of webs so as to retain *global patterns* of spatial networks; otherwise, the cohesive place of interdependence cannot be formed and prolonged. In particular, the networks in a given place and community is contingent to systems of settings, society, and culture (Rapoport, 2005, pp. 114-116). To fabricate resilient systems of linkage, embodied spatial-networking must consider critical insights of *spatial culture* in life-space—societal and cultural patterns of spatial uses in a particular setting. Here will relate human-environment relationships to sustainable constructs of the embodied networks of place and spatial ecology.

3. Embodiment of Place

As an anatomy of place, spatial networks of environmental connectivity can induce experience of place as a recognizable whole because humans as embodied beings with mobility employ their *bodies* to interact with the environment while travelling from place-to-place excursions. In fact, we act in spatial networks through spatial orientation, projection, and identification as bodily metaphors to realize the embodied presence of inbetween modes of the networks. In this way, embodiment in the path networks makes sense of spatial coordinates and connectivity as well as of place through our bodies. As Kevin Lynch (2000) states in *The Image of the City*, paths lies in "networks of habitual of or potential lines of movement" (p. 96) through the environment, which Hillier (1984) calls it "axial space" facilitating movement potential. Path networks arrange and relate the other structural elements of the urban elements: nodes, districts, landmarks, and edges along them. Paths need to convey senses of characteristics, directionality, continuity, and progression between origins and destinations as the networks perform as active passages consisting of a sequence of events they pass through, to form the comprehensive identity of place (Lynch, 2000, pp. 96-99).

To strengthen the relationship between spatial networks and place, *embodiment in place—how bodily engagements in the environment make sense of place real*—enables to explore the extent to which an intrinsic correlation between path networks and place is demonstrated through mediated bodies. To move from a place to another, spatial networks function as articulating mediums in spatial-relations. Spatial-relations are fundamental embodied concepts which allow humans to understand how spatial form exists and how spatial inference is defined. This leads to understanding of *conceptualized spatial schemas*: a container schema, a source-path-goal schema, and bodily projections (Lakoff & Johnson, 1999, p. 30-31). The container schema consists of an interior of varying scales of place, a boundary or landmark identified as being between interior and exterior conditions, and one of existence of outside (Lakoff & Johnson, 1999, p. 32). If we are taking our itinerary "in" an embodied spatial network configured "inside" a place, we are also "in" the particular place and experience place character. Just consciously being in and walking through presence of path networks leads us to be aesthetically embodied in place topography, atmosphere and all environmental symbols of the specific domain (Figure 2). If humans travel from one container towards another, the *source-path-goal schema* is logically built.

Figure 2. Orvieto, Italy (Source: Knox & Mayer, 2009, p. 71).

Just taking an itinerary through phenomenal presence of the local street makes us realize the intrinsic nature of place.

The source-path-goal schema is comprised of following elements: a moving object, a starting location, a intended destination, a path from the source towards the goal, the actual trajectory of motion, the object's position at given time, the object's direction at that time, and the actual final location of object (Lakoff & Johnson, 1999, p. 33). A path from the source to the goal is alternatively topological: it relies on many chaotic factors: the object's motion, direction, position, and what lies in its path, all of which could lead to different experiences before reaching final location. Our acts in the environment are nonlinear. For instance, as we leave the office (source) with an intention to go back home (goal), the path may be full of events that interrupt our intended goal. We might choose to join the events; our initial goal have been postponed, and our experience to get back home might be rather special than the usual.

As moving toward some place, humans generally interact with place utilizing frontal vision considering anything they pass along the way behind them. We walk into the front of the temple, and find ourselves in the back of the setting area. The concepts of front and back are basic spatial-relations related to the human bodies: bodily projection which humans project relationships by using basic body metaphors. Humans employ their bodies and their positions/locations to create fundamental spatial orientations in both orienting themselves and perceiving relationships between objects (Lakoff & Johnson, 1999, p. 34). If path networks, in this way, prove embodied conditions of significant exchanges, they can demonstrate motion awareness: "senses of passage, distance, rhythm and time" (Barrie, 1996, p. 38). Embodied path networks encouraging experiences along them intensify a place of destination (Bloomer & Moore, 1977, pp. 77-78).

With embodiment, we experience spatial networks and place as being inside a distinguishable realm, an embodied state of a containment

metaphorically defined by forms of pronounced boundaries. Observed here is significance of edges/ boundaries in relation to environmental perception. To identify a place as a definite domain, edges of place perform their roles as bordering junctions indicating spatial articulation and differences between juxtaposing domains. For example, a threshold joins and takes apart between domestic and public domains, or a couple lines oftrees and historical facades along the street define characteristics of the boulevard. Edges therefore embody a place as if it has a body through metaphor. As humans are moving toward some place,pathlogical networks develop into critical factors so as to stimulate experience and identity of place by providing potentials of a series of environmental sequences, orientation, and progressive movement, all of which lead humans to be lived-in an embodied place, through edges' ordered complexity (Laiprakobsup, 2007, pp. 169-171). Without living edges, our journeys in the environments are otherwise converted into monotonous routines. If boundaries of place convey chaotic character, the place networks cannot be clearly identifiable.

4. Social Encounters

If edges of place reveal their spatial quality, edges along paths not only define embodied pathological networks but also affect whether possibilities of spatial orientation and social participations can take place in the place webs. Social interactions and experience in public realms help create integral livability, that is, the most likely contribution to sustainability in that social livability sustains aesthetics of living, animation, and connectedness (Knox & Mayer, 2009, p.106). Environmental capacity of spatial networks integral with active edges consequently takes the vital role to devise bodies to navigate in spatial demands of juxtaposition and associations, in this case the promotion of convivial, sociable sustainability of the public places.

Possibilities of sociability can take place in spatial networks in cooperation with systemic, hierarchical patterns of the embodied network's spatial configurations and complex boundaries that allows bodies to take on continuous experience in the most complex place between two or more systems of activities overlapping. Spatial configurations of the networks, as Hillier (1996) examined two-dimensional maps of *convex spaces*, *axial lines*, and *deformed wheels* of settlements, entail the *global pattern* of the settlement that refers to a potential movement field enabling for co-presence, co-awareness, informal encounters, and lively street activities (p. 161). Rather than two-dimensional layers of interconnected spaces, the spatial network is an *organized complex* structure that functions social spaces and "life between buildings" (Gehl, 1987). The term organized complexity is pertinent to environmental awareness in a way that an information field we embodies in place lies in a manner of scaling hierarchy created by surrounding surfaces that determines paths and activity nodes (Salingaros, 2005, p. 11). In fact, systemic, living place networks with tactility persuade people to accumulate in sharing, inbetween domains to explore place, and thereby encouraging opportunities of encounters (Figure 3). Sociability in urban spatial networks encompasses not only generating integrated core lines of networking but also considering edges of place that define embodied networks.

Identifiable paths are delineated and recognized by characteristics of the edge. Edges of place convey either separation or amalgamation of the parts of domains and essentially enable to identify particular regions of domains (Barrie, 1996, p. 38). Edge zones emerging out of detailed facades with "thickness" can furthermore create an aediculated space, *a space within spaces* at the transitional zone, leading to a place to pause. Popular places for pausing or staying are found along the facades in spaces and inbetween realms where it is possible to view and be part of juxtaposed spaces,

Figure 3. Chiavenna, Italy (Source: Knox & Mayer, 2009, p. 45).

When the network is effectively interconnected and defined in hierarchical scale of spatial configurations, tactility, and movement, people tend to join their presence in the street and chances of social encounters are likely to occur.

Figure 4. Ede effect (Source: Knox & Mayer, 2009, p. 107).

People tend to stand, sit, and congregate around the complex edges of the placenetwork that offer sub-divisive nodes and locality for spatial orientation to watch and observe social occasions and activities.

simultaneously (Gehl, 1987, p. 151). Placement or insertion at the edges of space (Figure 4) enables individuals to observing places, locations, and occasions going on in place and meanwhile to be less exposed to the public (Gehl, 1987, pp. 149-151). Social life of public domains intrinsically develops around its edge of the spatial networks. If the edges are supplemented with "pockets of activity" around public open spaces, "scalloped edges" will build up a process of involvement and provide a place to linger. Alexander recommends that the public spaces be entirely surrounded with edges that are scalloped by diverse activities, partly enclosed areas and located between accessible paths. "If the edge fails, then the space never becomes lively" (Alexander, Ishikawa, & Silverstein, 1977, p. 602).

An integrated fabric of path networks allows for movement and interconnections in the urban web (Hillier, 1996; Salingaros, 2005). Edges of place with organized complexity enable people on a path to pause and embody places in juxtaposition, thereby generating interconnected possibilities of a series of sequences for routine itineration and social encounter into a network of environmental fabrication. An integrated fabric of the networks and edges of place become fundamentally twofold constituents of the urban spatial networking which make a place overflow with livability and allow people to explore, assemble and experience place's identity through spatial sequential episodes of journey in the embodied network.

5. Place Netting

By which an embodied schema of containment conveys logical understanding of place, embodied spatial networks are immersed into a place fabric and content; hence, experience of connectedness in spatial networks influences identity of place. If to sustain place identity hinges on patterns of relationships and interactions (Relph, 1976, p. 61), place networks must embody inbetween

modes of associative layers that clarify differences and spatial relations between environmental juxtapositions in order to create meaningful place web fabrics. In effect, the embodied spatial networks perform as *place netting* so as to weave environmental experience of interconnectedness, thereby accumulating identity.

Place identity, as a key aspect of sustainability to achieve a sense of place, is socio-cultural constructed (Knox & Mayer, 2009). It can vary in several forms, but it amounts to the same basis that an identity of place is derived from our experience of a given place opposed to the others (Relph, 1976, pp. 61-62). The unique content and patterns of relationship in the environment embedded in which senses of place conveys is converted into a collective symbol of the particular place expressing its meaning. Characteristics of place manipulate the way we act in everyday life; subsequently, our presence within the environment has impact on identities of place. Thus, an identity of place draws a parallel with physical characteristics of place, activities and functions taking *in* place, and semantic symbols. If people' performances in spatial networks of place accumulate civic pride and identities of the specific realm, place networks' functionalities and potentials influencing ways that activities of spatial connectedness take place engender cumulative place identity.

Considered as domains of emergent spatial interrelations delivering sustainable contents, place networks serve not only as transitional spaces; rather, perform as *inbetween modes of place* capable of conducting exchanges, sharing, and participations as *place netting*. The in betweens in environmental design are pertinent to the conception of juxtapositions of spaces/places as *manifestations of differences*, an articulation between environmental realms. Inbetween realms, as to Smithson (1968), can induce associative relationships and reinforcement of place identity at once "with respect to place and occasion" (p. 104). Also, for Kleinsasser (1999),

inbetween domains are considered as potential, undesignated spaces that can develop into places responsive to two or more sets of conditions, simultaneously (pp. 61-87). To articulate the conception of environmental juxtapositions, the spatial networks must present themselves as inbetween modes of place—expressive forms leading to embodied experience of spatial-relations. The inbetween modes of place convey means to reinforce the reciprocal promotion of separation and unity between juxtaposing domains. For place-forms, the inbetween modes must retain spatial presence and symbols of *a lived sensibility of edging, interconnective domains*. Inbetween modes of place manifest themselves as a place: 1) a lived, environmental entity as *presence* of vital, living forms of reciprocal means of connectivity and division; 2) being situated in edging junctures, the ways in which the interval realm connects juxtaposing domains; and 3) performing as spatial transition and connection of the less predetermined (programmed) nature. In between modes of place, in this context, emerge out of manifestations of *intermediary places as vital as layers of neighboring interactions*: separations and connections and parts and the whole. In other words, in between modes of spatial networks can only express through inbetween place-forms of the sensible and tangible relationship between different realms. In contrast, interconnected modes of the inbetweens cannot be introduced by spatial networks of linear moving channels and left-over spaces of unidentifiable scales and functionality, both of which are deprived of concrete, definite layers of meaningful links. Inbetween modes of place networks must suggest living interval domains for possessions in junctions and associations with environmental juxtapositions. With presentational symbolic forms of interval domains, inbetween modes can offer place networks a "third place" of evolving opportunities, rather than straightforward pathways, as the following:

1. Significant interval pauses and a place of refuge and associations,
2. Detached participations,
3. Spatial reinforcement strengthening juxtaposing realms,
4. Spatial clarification creating sequential-making, hereness-thereness between places,
5. Spontaneous uses: spacious clarity, possession in movement, and lingering on edges (Laiparakobsup, 2008, p. 132)

The presence of inbetween modes of place enables meaningful potential for the engagement in the environmental networks: dwelling/being and events to take place. In turn, the presence of the inbetween modes gives place networks potentials of connectedness, pauses, transition-making, spatial sequences, and orientation-shifting. Inbetween modes reinforce embodied spatial networks as a "third place" for dynamics of social activities, encounters and shared experiences, all of which cultivate a sense of place and remark a sense of community. Meaningful, embodied networks of place must contain possibilities for life to be lived in presence of inbetween domains as place netting. A piazza in Hvar, Croatia performing as part of the place-netting system, for example, epitomizes the pronounced "third place" offering people choices and experience in journeys with transition-shifting competence between places into embodied episodes, to which spatial networks bring in life and identity (Figure 5). Fabricated as organizational and complex, interconnected components of a community, place-netting links the experiential places to networks constructed within life-spaces and creates living, meaningful place-web interconnections.

6. Conclusion: A Cohesive Bond of Place

Today, sustainability superimposes onto designerly ways of thinking, especially in environ-

Figure 5. Hvar, Croatia (Source: Knox & Mayer, 2009, p. 118).

The place-netting (a piazza) manifests itself as the "third place"—a place of choices—and inbetween modes of place that bring about communal, spatial networks gaining life of interconnectedness and place identity.

mental creation: its ultimate goal is to create living places for aesthetics of survival and identity. To sustain life in a comprehensive level, sustainable places must retain vital mediums/forms of web interconnectivity of places, *embodied spatial networks*. To keep up ecology of life-spaces, spatial networks prove significant to requisite conditions of spatial connectivity in spatial ecology. Because life-relational environments are interdependent on potential links and social and cultural patterns of spatial uses, connective constituent structures and spatial culture lie in critical consideration for the integrated ecological web of place. If the global pattern of settlement's spatial networks and hierarchical complexity of spatial configurations are integrated, vibrant urban webs of movement establish a connected, coherent form of place as a whole.

The embodied spatial networks act as vital layers of interconnection, making us incorporate new information and sustain our living in the complex system of neighborhoods. We as embodied entities are integrated with the environments by the embodied nature of spatial-relations. We understand domains we live in through bodily metaphors to project, navigate, and create a place (Downing,

Nanda, Laiprakobsup, & Mohajeri, 2008). To be an embodied network in a community, place web fabrics must be founded through organized complex edges of embodiment. The organized complexity of edge zone containing public, spatial networks can thus develop into "a place of social encounters and congregation" if the design of spatial webs is emphasized to create sub-spaces of edge for pausing, observing, and lingering possibilities.

To announce themselves as a "third place" that encourages social possibilities and cultivates place identity, the place networks must embody inbetween modes of place fostering interconnected juxtapositions, rhythms, sequences, and movement in place. Inbetween modes of place allow spatial networks for sustainability to develop as a complex system of inbetween layers as "third places" launch civic venues for gathering, sharing, conviviality, and liveliness through place-netting. Inbetween modes facilitate integrated webs of place to be full of living presence and considered as complementary and intermediate nodes allow humans to enter and explore, thereby creating embodied web interconnections of places.

Under the appreciation of spatial networks as fabricated, inbetween linkage, places in juxtaposition will be constructed in holistic and sequential relationships of environments as a whole entity in a sustainable-place scale. Extending from the built-environmental sphere to ecological scale, well-defined place networks retaining lived sensibilities of environmental sequences provide choreographing rhythmic movement and gestures of place, contributing to imports to sustain our identity and connectivity so as to support life that they define for aesthetic survival in place.

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