Landscape Architechture and Modern Consciousness:

The Work of Christopher Alexander

by

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I. MODERN CONSCIOUSNESS

A. Holism and Systems

The new vision of reality is usually articulated, from one degree to another, through the use of systems thinking. General systems theory is based on the understanding that the world is composed not of things, but of interconnections and interrelations--in a word, systems. The universe is a gestalt; each part of the universe is a gestalt. Everything must be understood as a totality. The physicist Fritjof Capra says it most clearly: "Systems are integrated wholes whose properties cannot be reduced to those of smaller units."[1] The study of systems requires that we deal with wholes in an explicit manner, taking into account all the multi-faceted relationships which are intertwined with the "what" that we are studying. We can no longer look at the world in terms of isolated units. Systems thinking requires a profound shift from the scientific and intellectual reductionism of the past three hundred years toward an integrated, ecological understanding of systemic process.

One of the most important elaborations of the gestalt concept has been in the field of modern physics, most

notably in the holonomy theory of David Bohm and in the bootstrap hypothesis of Geoffrey Chew. Although I make no pretensions of offering a detailed analysis of these theories, I would like to make a brief summary of some of the major ideas generated by them in an attempt to show how they make unique contributions to our understanding of the unity of the cosmos.

Bohm begins with the proposition that it may be necessary to deal with the universe as an unbroken whole, always proceeding according to a holonomous law, the law of the whole. Unlike a heteronomous law, which conceives of parts as autonomous objects which interact externally according to mechanical laws, the holonomous law requires that we conceive of the universe as an interconnected fabric in which parts are themselves wholes and in which new wholes continuously emerge from the coupling and synthesis of existing wholes. The most common analogy used to describe Bohm's holonomy theory is, quite appropriately, the hologram. In this technology, the complete image is enfolded in each region of the holographic plate, making it possible to project the entire image using only a small portion of the plate. Each part in some sense contains the whole. Similarly, Bohm's theory states that the order of the universe is enfolded in each region of space-time, an

implicate order. Stated in the more general terms of wholes and parts, the order of the whole is enfolded in each of its parts.[2]

The bootstrap hypothesis proposed by Geoffrey Chew is similar in its approach, but addresses the question entirely from the requirement of self-consistency. This scientific philosophy asserts that nature is a self-consistent whole and requires that all components of wholes be consistent with themselves and with each other. The bootstrap theory abandons not only the ideas of fundamental building blocks, but also the idea of fundamental entities of any kind. There are no fundamental laws, constants, particles, or equations. As Capra says,

> The universe is seen as a dynamic web of interrelated events. None of the properties of any part of this web is fundamental; they all follow from the properties of the other parts, and the overall consistency of their interrelations determines the structure of the entire web.[3]

The bootstrap approach is currently being pursued through the S-matrix theory of hadron approximation. S-matrix, or scattering matrix, theory is the mapping of the interactions of hadrons (strongly-interacting particles) during collisions generated by particle accelerators. The implications of this mapping are profound because the S-matrix sets forth the idea of unbroken

wholeness in very explicit terms. To quote Restivo and Zenzen, "The hadrons . . . are conceived to be composites of hadrons. The binding forces between hadrons are also hadrons."[4] Capra expands this idea even further:

> The picture of subatomic particles that emerges from the bootstrap theory can be summed up in the provocative phrase, "Every particle consists of all other particles." It must not be imagined, however, that each of them contains all the others in a classical, static sense. Subatomic particles are not separate entities but interrelated energy patterns in an ongoing dynamic process. These patterns do not "contain" one another but rather "involve" one another in a way that can be given a precise mathematical meaning but cannot easily be expressed in words.[5]

The bootstrap approach has been very successful in modelling the interactions of certain sub-atomic phenomena, providing a clearer image of what is meant by the concept of unbroken wholeness. Just as important, or perhaps more important, is the attitude which bootstrappers bring to the question of ultimate truth, ultimate description, or ultimate anything. As the cyberneticist Gregory Bateson said, "Science never proves anything."[6] The abandonment of the idea of fundamental entities is one indication that bootstrappers understand this simple statement, enabling them to share with Bohm the realization that science will never construct a complete description of reality. The

"ultimate" theories of the past have always been shown to be limited in their application, inevitably being merged with other theories into new wholes as time passed. Bootstrap physicists echo Bohm's concept of emerging wholes by envisioning the continuous creation and synthesis of partial theories which apply to certain conditions, leaving unexplained parameters to be covered by other partial theories. No theory would be more fundamental than any of the others. Rather, following the requirement of mutual consistency, they would form an interlocking description of reality which would be continuously expanding and thickening.[7]

Orthodox quantum physics has not presented us with concepts quite this revolutionary, but is has made several important contributions to the development of modern consciousness with regard to gestalt perception. One of these, the role of human consciousness in the process of experimental inquiry will be discussed under a later heading. Another, the recognition of the complementary nature of seemingly opposite phenomena, is of importance to us here in a discussion of the unity of the cosmos.

Complementarity, the unity of opposites, is a concept well-known to the mystic traditions of all ages, especially to those of the East, but which was banished from Western

thought at the advent of Cartesian philosophy and Newtonian science. This bifurcation between mind and matter, observer and the observed, resulted in the great surge of purposive rationality which fueled the Industrial Revolution and the macho technologies which accompanied it. The rift did not begin to heal until Einstein unified matter and energy in his famous equation and laid the foundation for quantum mechanics. Without relating the details of its formulation, the particle/wave duality of quantum phenomena paved the way for an entirely new view of the nature of opposites. Physicists were confronted with phenomena, in this case protons, which required that they suspend the either/or logic imbedded in their thinking and accept the existence of entities which appeared to possess particle-like and wave-like properties.[8]

The upshot of this discovery was a new (to current Western thought) ontological framework for understanding opposites. Complementarity says that opposites are not separate entities at all--they are merely different manifestations of the same reality. Opposites are not of different substance; they are of the same substance. Opposites are unified through oscillation; they become one another. The consequences of this realization reach into every aspect of existence, becoming of great importance in a

culture where the non-quantifiable is the opposite of the valuable and where death shares no connection with life.

Progressive thinkers in many disciplines have begun to realize the importance of complementarity in their research and are now including the idea explicitly in their theories. Systems theorist Erich Jantsch, for example, has developed a double spiral model of the ontogenetic development of human consciousness which includes at least four death-rebirth cycles.[9] Hazal Henderson, a futurist/economist, has developed a devolution model of industrial societies, exploring the complementary processes of a declining industrial age and a rising solar age.[10] Restivo and Zenzen, among many others, have explored the possibilities that lie in the development of a global cognitive strategy which employs the complementarity inherent in the hemispherical structure of the human brain, bringing analytic/linear and holistic/nonlinear modes of thinking into greater balance.[11]

System thinking is often characterized by hierarchical, multilevel descriptions, and most systems models share an emphasis on the relationship and integration of parts among and within system levels. The term "hierarchy" in this context does not refer to the top-down chain of command in the pyramidal power structures typical of most governments,

corporations, and large institutions. In the multileveled structures we are considering here, each level within the system experiences interconnections and interdependencies with all the other levels, and the total system is in turn a part of a larger system. There is no one-way flow of dictatorial commands from a top level through chains of command to lower levels. Information is distributed in a multi-directional fashion, and it makes little sense to speak of top-down or even bottom-up communication since system levels are not classified by rigid power distribution but according to levels of complexity. The extremes of level complexity do not dominate one another; they are complementary and work together for the health of the whole.[12]

Arthur Koestler, examining the complementary nature of system parts/wholes, developed a term which describes one of the most important concepts in hierarchal systems theory --the "holon." A holon is a subsystem which is both a whole and a part, an idea reminiscent of Bohm's holonomy physics. These systems/subsystems exhibit two opposite, but complementary, tendencies: integration and self-assertion, Holons tend both to function as parts of larger wholes and also to assert their individuality and autonomy. Both tendencies are necessary if the system is to maintain

a stratified order and yet also function as a single entity.[13]

Even though it is sometimes convenient to refer to certain wholes as "parts," it is imperative to keep in mind that the universe remains an unbroken fabric no matter how we choose to divide it, classify it, and segregate it. We should remember the experience of physicists in the early part of the twentieth century who began probing the atom in search of the fundamental building blocks of the universe. Instead of finding the hard, solid billiard balls they had assumed existed, what they discovered was that matter did not consist of "things" at all. At the subatomic level, matter dissolves into organic patterns which are represented mathematically as particle-wave dualities, or N-dimensional wave functions. These entities are probabilities of events and represent not objects but probabilities of certain interconnections and relationships. Subatomic "particles," then, are not solid objects which behave according to external laws and forces but are instead dynamic webs of relationships which show tendencies to exist. Due to their inaccurate assumptions about the nature of parts, many physicists were blocked from further knowledge of subatomic phenomena and remained confounded for decades. In the same way, we should exhibit prudence

in the way in which we create parts from the unbroken whole of the universe; otherwise, we may be unwittingly tying our hands. The dilemma over how to achieve a proper systems hermeneutics is perhaps best addressed by Ervin Laszlo when he suggests that we "replace concepts such as 'cooperation of parts' with concepts of continuous fields."[14]

B. Form and Process

Unbroken wholeness is not the only major concept to emerge in modern consciousness. The discovery that sub-atomic particles were patterns of movement revealed a universe that is dynamic, not static, and constantly in flux. Restivo and Zenzen describe the implications for physics:

> Wheras classical atomists tried to explain the appearances of change in terms of the configurations and motions of esstentially permanent entities, the problem of new physics is to account for the appearances of stability when, ultimately, all is in flux.[15]

The same might be said for all forms of human inquiry. For modern consciousness, stability has become, not immobility and inflexibility, but dynamic balance. In short, there has been a dramatic shift from form to process.

Returning to David Bohm's holonomy theory, the emphasis on process is readily apparent. Not content to stop with the notion of implicate order and the analogy of the hologram, which is static, Bohm further hypothesizes that the undivided wholeness is in dynamic flux, a phenomenon which he terms the "holomovement." To illustrate this concept, he compares the holomovement to the stream of consciousness which is "undefinable but prior to definable thoughts and ideas." In this sense, objects and things become distillations of the holomovement which are continually forming and dissolving. It follows that human consciousness is integral to this process, for we are the ones who abstract the flux into definable, meaningful "things" through our concepts.[16]

The emphasis on process in modern thought can also be found in the work of the philosopher William James, especially in his great contribution known as the doctrine of relations. At the time James formulated this concept, the two prevailing views of experience were those of neo-Hegelian idealism, and atomistic associationism. The neo-Hegelians held that one could not experience particulars, only the total series. The whole was overemphasized, and the individual was relegated to unimportance. The associationists, on the other hand, held that the particulars

were contiguous, but non continuous, denying any order in the total series. The parts were overemphasized, destroying any sense of continuity or total order. James, through his doctrine of relations, achieved a balanced version of human consciousness by regarding consciousness not as a series of things or an undifferentiated totality but as a stream, thereby shifting the emphasis from form to process. The realm of experience came to be regarded, then, as a field of relations, not unlike Laszlo's concept of continuous fields. James explains his own version of this idea in the following manner:

> The generalized conclusion is that therefore the parts of experience hold together from next to next by relations that are themselves parts of experience. The directly apprehended universe needs, in short, no extraneous trans-empirical connective support, but possesses in its own right a concatenated or continuous structure.[17]

Having established a cognitive strategy which recognizes the centrality of process thinking, the question then becomes more specific: What is the quality of this process? One response to this question is to examine the differences between organic and inorganic processes. One is immediately tempted to apply the concept of complementarity to a comparitive study of organic and inorganic processes, our very naming system seeming to suggest a relationship of this

nature. But I believe that a more useful framework is a system of logical types as expressed by Gregory Bateson.[18] Logical typing is the recognition that a hierarchal description is necessary to describe systems exhibiting different levels of complexity. The word tree, for example, is of a different logical type than the words oak or elm. In the same way, I contend that organic process is of a higher logical type than inorganic process; to put it another way, organic process is a more complex version of inorganic process. While the exact nature of the relationship between these two types of processes may seem a trivial point of contention at this time, the resolution of this problem is of extreme importance when attempting to deal with questions which arise in discussions of the built environment, as we shall see later.

One way to illustrate that organic process is of a higher logical type than inorganic process is to compare the functions of machines and organisms. To state the matter in its most general terms, organisms grow, whereas machines are constructed.[19] Mechanical assemblage occurs in precisely programmed steps, beginning with a blueprint and proceeding through the linear stacking of building blocks. This blueprint, as pointed out by Magoroh Maruyama, must contain more information than the finished product.

The emergence of organic patterns, on the other hand, is the process of growing and changing, always evolving toward greater complexity. Organisms are characterized by a high degree of flexibility, achieving stability through resilience and fluctuation. As Maruyama points out, ". . . nonredundant complexity can be generated without [a] preestablished blueprint."[20] Returning to the matter of logical typing, it is important to note that machinelike processes occur within all organic systems. Blood circulation, for example, could be described in a machinelike manner by the use of fluid dynamics. What is important to realize is that these functions are secondary in nature and are not descriptive of the "pattern which connects"[21] them, the organic pattern of the whole organism. This distinction is the basis for my contention that organic process is of a higher logical type than inorganic process.

C. Self-Organization

Living, organic systems are also open, evolving systems which are in constant interaction with their environment. Usually referred to by cyberneticists as self-organizing systems, they exhibit a certain degree of autonomy by patterning themselves according to internal

principles of organization. Self-renewal and self-transcendence are the two major dynamics which characterize self-organizing systems. As Capra defines the terms, self-renewal is "the ability of living systems continuously to renew and recycle their components while maintaining the integrity of their overall structure," and self-transcendence is "the ability to reach out creatively beyond physical and mental boundaries in the processes of learning, development, and evolution."[22] Both characteristics imply that living systems operate far from equilibrium and achieve a dynamic stability and continuity through fluctuation and change.

Self-organization, or system cybernetics II, involves a great many issues which I have not chosen to present, but one important consequence of this model is the description of what Maruyama calls a deviation-amplifying mutual causal network. It is simplest form, this network contains recursive, positive feedback loops which amplify what may initially be small deviations into irreversible changes in the system. Not unlike the "quantium leap" of modern physics, these changes are discontinuous leaps into a new system state, bringing about a qualitative change, or morphogenesis. Mutual causal logic, consequently, provides an

excellent framework in our quest for a better understanding of the emergence of organic order in living systems. Maruyama states the matter succinctly: "It [mutual causal logic] shows precisely how differentiation, growth, and increase of complexity can take place; how heterogeneity can arise out of seemingly homogeneity; and how new structures create themselves without a predesigned blueprint."[23] Maruyama then goes a step further and explains how organic process, as articulated in mutual causal logic, is central to the process of creativity:

> It is a fallacy to equate creativity with capriciousness. A symphony is the opposite of noise. Creativity involves the development of patterns, differentiation, and structure. This is possible by means of differentiation--amplifying mutual causal processes, as we have seen. The amount of Shannonian information can <u>increase</u> in such processes. Interaction can create <u>new</u> patterns, not just combinations of old patterns.[24]

Before leaving the topic of self-organization, it would be good to look briefly at Gregory Bateson's definition of mind and to see its relationship to the topic under consideration. Bateson defines mind as that systemic property which is common to all phenomena that exhibit thought, evolution, ecology, learning, or life. This definition is made very precise in his book <u>Mind and Nature</u> in which he discusses several criteria which he believes are

necessary for mind to occur, those criteria which are responsible for the "pattern which connects." This approach to mind is important to a discussion of self-organizing systems because the criteria for the two are almost identical. For Bateson, mind is a phenomenon which is present in all self-organizing systems and which manifests itself in different ways at higher levels of complexity, those higher levels representing what we normally consider to be "mind."[25] Accepting this intriguing view, mind becomes immanent in the system and, consequently, immanent in matter. Jantsch proposes a similar explanation: "Even 'mind' may now perhaps be understood as a higher-level coordination of the same processes which, at other levels, appear as 'matter'; thus, a duality vanishes that has long haunted Western thought."[26]

D. The Observer/Participant

The assertion that mind is immanent in matter should not come as a surprise, for it is an inevitable consequence of the work done by quantum physicists earlier in this century. Physicists studying the world of subatomic phenomena suddenly found it necessary to include the observer's consciousness in their explanations and theories. The reason for this seemingly strange requirement was that it became

increasingly apparent that it was not possible to observe reality without changing it. The scientist, no longer a neutral observer, had become a participant in the creation of reality. This realization led Werner Heisenberg to remark, "What we observe is not nature itself, but nature exposed to our method of questioning."[27] Capra, in discussing the consequences of bootstrap theory, states the relationship more explicitly:

> The fact that all the properties of particles are determined by principles closely related to the methods of observation would mean that the basic structures of the material world are determined, ultimately, by the way we look at this world, that the observed patterns of matter are reflections of patterns of mind.[28]

Perhaps Gary Zukav is correct when he says that "If these men [the physicists] are correct, then physics is the study of the structure of consciousness."[29]

These discoveries have led to radical changes in our perception of how we come to know the world and even in our perception of the self. Quantum physics has shown us that the "objective" approach to science is an illusion--it is not possible for the human to separate himself from the observed phenomena in hopes of recording an objective experience. Human beings, consequently, are continuous with their environment, not other than it. The organism and its environment are understood as co-evolving; the unit of

evolution becomes not the organism but the organism-in-its-environment. Thus, the self takes on a new meaning because the boundary of our skin begins to become rather fuzzy. Our total system, extending even to the totality of the cosmos, in a sense becomes our "self." We are systemic in nature and must work toward systemic goals.[30]

The consequences for the individual are profound because it means that each person is responsible for and can aesthetize that part of the self which he terms "environment." The Navajos have a particularly beautiful articulation of this awareness, involving the generative power of language in the creation of an aesthetic environment.[31] The individual act within a community of experience is the essence of how human beings give meaning to, or actualize, the world. We can say with John J. McDermott, "To be human is to humanize."[32]

II. CHRISTOPHER ALEXANDER

The work of Christopher Alexander represents what I believe to be the best interpretation of the new world view in the realm of the built environment. I believe, along with Alexander, that our cities, towns, and houses will not come alive until we start with the principle of organic order. The built environment, when constructed and maintained through this principle, will produce what Alexander calls the equality without a name."[33] This quality is precise; it is exact. And how can subjective feeling be precise or exact? Gregory Bateson suggests that feelings consists of precise algorithms, that feeling should not be relegated to the world of quantity, but mapped qualitatively.[34] As Gary Zukav maintains, "to stand in awe and wonder is to understand in a very specific way, even if that understanding cannot be described."[35] In the same way, the quality of which Alexander speaks is very precise but cannot be named.

Words which Alexander uses to hint at the description of the quality include "whole" and "alive," words which are prominent in any discussion of modern systems consciousness. Complementarity is also apparent, for Alexander notes that death is as much a part of the quality as is

life. The duality of death/birth is thus explicitly recognized in his description.

To create the quality without a name, Alexander suggests that we begin with the generative power of a living language. In Walter Pankow's terms, the description (or in this case creation) of gestalt requires a natural language.[36] The language of patterns provides such a language for the built environment. Alexander's version of such a language is not static, for it is as much patterns of events as is its patterns of space. The individual patterns may be likened to Koestler's holons, wholes which are parts of larger wholes, but which also contain smaller wholes. The attitude toward the incorporation of new patterns is very much a bootstrap approach, the only requirement being that these new patterns be consistent with themselves, that is whole, and consistent with the other patterns in the language into which they are being incorporated.

The use of the language in the construction of actual environments is process-oriented. When asked to produce a master plan for the University of Oregon, Alexander and his colleagues returned with a process for creating organic order. In their words, ". . . we shall argue that the master plan, as currently conceived, cannot create a whole.

It can create a totality, but not a whole. It can create totalitarian order, but not organic order."[37] These statements show a deep awareness of the proper relationship between wholes and parts, eschewing the totaliarian straight jacket of neo-Hegelianism. At the same time, Alexander does not go to the other extreme, associationism, which conceives of the world as a congeries of autonomous parts.

> Large lump development hinges on a view of the environment which is static and discontinuous; piecemeal growth hinges on a view of the environment which is dynamic and continuous.[38]

Hence, Alexander's work is a balanced version in the same vein as William James' doctrine of relations.

The emergence of organic order requires the dynamics of self-organization, the presence of mind. The order emerges gradually from individual acts which share a common mind, convenant of community. The development is epigenetic, the unfolding, as it were, of Bohm's implicate order. No blueprint is required. Design and construction take place simultaneously in an ongoing dialectic of form and process. This dialectic does not end when the project is "completed," for the system, in order to remain alive, must continue in a state of disequilibrium. In a sense, nothing is ever completed; the system remains forever open and evolving.

Language can be used to create both poetry and prose. To create poetry requires the overlapping of meanings and, in this case, patterns. Bateson refers to this as communication among the different logical types of learning. This overlapping can be done in such a way as to produce a place with great intensity, but to build in this way requires a deep understanding of the rhythmic structure of the universe. According to Laszlo,

> . . . the field continua may have preferred configurations to which they return when disturbed, and entities we identify as parts [or patterns] may be focal points or condensations of field strength along continuous but complex matrices.[39]

To create places of great feeling requires that we attempt to discover the refined and intense patterns, or preferred configuration, which lie at the core of the universe. To find these patterns, or more precisely the "pattern which connects" (which is the quality without a name), means to come to know the universe and ourselves, for the universe is, of course, our larger self.

In the end, the art of building is the creation of a model of the universe, the self. Speaking of living systems, Gregory Bateson addresses the question of their aesthetic preference.

> It is conceivable that such systems would be able to recognize characteristics similar to their own in other systems they might encounter. It is conceivable that we may take the six criteria [of mind] as criteria of life and may guess that any entity exhibiting these characteristics will set a value [plus or minus) on other systems exhibiting the outward and visible signs of similar characteristics. Is our reason for admiring a daisy the fact that it shows--in its form, in its growth, in its coloring, and in its death--the symptoms of being alive? Our appreciation for it is to that extent an appreciation of its similarity to ourselves.[40]

III. CONCLUSION

Architecture has often been said to reflect the spirit of the time, and I must agree that our disjointed environment accurately reflects the disjointed paradigm which currently predominates in our culture. I must also agree with architect-urbanist Martin Kuenzlen that "the 'self-organizing' city remains within capitalism an illusion."[41] However, I would add that this indictment applies not only to capitalism but to all other late-stage industrial societies, whether they be communist, socialist, or other. The hope for a built environment which is again whole rests on our ability to move beyond industrialism, or more importantly, the paradigm which created and sustained it. Quoting from Hazel Henderson, "This shift of focus from the inert and inorganic to a deeper knowledge of the organic complexity and dynamism of bioecological systems constitutes my definition of the postindustrial revolution."[42]

And mine.

FOOTNOTES

1. F. Capra, The Turning Point (New York, 1982) p. 266.

2. S. Restivo and M. Zenzen, "Holonomy in Physics and Society," Man and Environment Systems Vol. II Nos. 5 and 6, p. 179.

3. Capra, p. 93.

4. Restivo, p. 179.

5. Capra, p. 95.

6. G. Bateson, Mind and Nature (New York, 1979) p. 29.

7. Capra, p. 96.

8. G. Zukav, The Dancing Wu Li Masters: An Overview of the New Physics (New York, 1979) p. 64.

9. E. Jantsch, Evolution and Consciousness (Don Mills, 1976) p. 46.

10. H. Henderson, The Politics of the Solar Age (Garden City, 1981) p. 381.

11. Restivo, p. 181.

12. Capra, pp. 280-283.

13. Ibid.

14. E. Laszlo, The World Systems (New York, 1976) p. 12.

15. Restivo, p. 180.

16. Ibid., p. 179.

17. J. McDermott, The Culture of Experience (New York, 1976) p. 35.

18. Bateson, p. 251.

19. Capra, p. 268.

20. Henderson, p. 336.

21. Bateson, p. 12.

22. Capra, p. 269.

23. Jantsch, p. 203.

24. Ibid., p. 210.

25. Bateson, p. 102.

26. Jantsch, p. 42.

27. Zukav, p. 113.

28. Capra, p. 95.

29. Zukav, p. 37.

30. Bateson, Stops to an Ecology of Mind (San Francisco, 1972) p. 319.

31. G. Witherspoon, Language and Art in the Navajo Universe (Ann Arbor, 1977) p. 26.

32. McDermott, p. 21.

33. C. Alexander, The Timeless Way of Building (New York, 1979) pp. 19-40.

34. Bateson, Steps, p. 140.

35. Zukav, p. 40.

36. Jantsch, p. 18.

37. C. Alexander, The Oregon Experiment (Cambridge, 1975) p. 10.

38. Ibid., p. 76.

39. Laszlo, p. 12.

40. Bateson, Mind and Nature, p. 142.

41. M. Kuenzlen, Playing Urban Games (Boston, 1972) p. 47.

42. Henderson, p. 148.

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