
An Elaboration of a Systems-based Housing Imagination Evaluation Framework for Research and Pedagogical Practices

JOSEPH KIM-KEUNG HO
Independent Trainer
Hong Kong, China

Abstract:

For a new subject in Housing Studies (HS), Housing Imagination (HI) needs to establish its theoretical foundation more clearly, which includes the formulation of HI methodologies and theoretical frameworks. This task is taken up in this paper, which proposes a systems-based HI evaluation framework for examining Housing Studies-related phenomena. It is argued that such kind of theoretical frameworks and methodologies are also useful for improving pedagogical practices on HI. Other than that, the paper recommends more usage of real-life examples for illustration in HI pedagogical practices. Finally, this paper lauds the value of mutual learning between (a) HI theoretical development efforts and (b) HI pedagogical practices as well as the contribution of contemporary systems thinking to HI theoretical development.

Key words: Systems thinking; system complexity; inquiry system; a systems-based HI evaluation framework; pedagogical practices; Housing Imagination

Introduction

As a newly established subject, Housing Imagination (HI) needs a clearly articulated and sound theoretical foundation. While its intellectual root and its core investigation approach have

been described in Ho (2014a; 2014b), both its methodologies and theoretical frameworks as well as pedagogical practices need to be clarified, enriched and refined. This paper examines three HI issues as related to theoretical development and pedagogical practices:

Issue 1: How can an HI approach produce valid knowledge for Housing Studies?

Issue 2: How can an HI approach be capable in investigating HI phenomena and issues that very often possess tremendous soft complexity?

Issue 3: How can the subject of HI be taught to students more effectively?

The first issue is related to the topic of Inquiry System while the second issue touches on the notion of system complexity and the need for HI methodologies capable of dealing with high system complexity. These two issues are inter-related. Clarifying these two issues contribute to improved HI pedagogical practices (Issue 3). The ensuing discussion is going to address these issues in details.

Housing Imagination: its nature of study and core investigative practices

Housing Imagination (HI) has been defined as “an intellectual field of study in Social Sciences that make use of the Geographical Imagination lenses to examine topics in Housing Studies” (Ho, 2014a; Ho, 2014b). It favors study of artifacts to learn various housing imaginations (hi’s) so as to both actionable and theoretical knowledge in Housing Studies (HS). Artifacts, such as photos, songs, newspaper articles, books and videos (see *Appendix* for some examples), etc, are considered as tangible and visible embodiments of housing imaginations (hi’s) (i.e. HS-related ways of thinking and socially produced discourses), which cannot be directly observed. The artifacts, in

this case, serve as evidences on hi's for an HI analysis. Methodologically, an HI investigation follows the sensemaking process that underpins the phenomenological research (Ho, 2014b). HI analysis primarily draws on notions from (a) the Phenomenological research, (b) the Critical Theory, (c) Human Geography and (d) Housing Studies (Ho, 2014b). It is intended that an HI analysis can produce valuable actionable knowledge as well as theoretical knowledge on HI/HS. Ho (2014a; 2014b) describe major tasks and steps involved in a core HI exercise. On reviewing this brief summary on the nature of study of HI and its core investigative practice, the theoretical deficiency of HI can also be discerned. Mainly, how can an HI investigation guarantee the production of valid knowledge (issue 1)? And, bearing in mind the tremendous complexity of HS issues and phenomena that are often encountered, how is an HI approach capable of studying these complex issues and phenomena (issue 2)? Apparently, this cannot be achieved by a disengaged HI researcher examining some HI artifacts alone, in this writer's view. The next section deals with issue 1; and issue 2 is then tackled.

On the options of inquiry systems available to HI investigative exercises

Issue 1 is: How can an HI approach produce valid knowledge for Housing Studies? For the writer, this issue can be rephrased in the following way: what is and what should be the inquiry system(s) underpinning an effective HI approach? In this regard, an inquiry system (IS) is “a system of interrelated components for producing knowledge on a problem or issue of importance” and “the output of an IS is what the system regards as a valid knowledge for action on an issue of importance” (Mitroff and Linstone, 1993). In particular, an IS attempts to answer the following question: “how do we know that what we know is accurate and may be depended upon to

make correct decisions or find accurate answers?” (Van Wyk, 1997). Different IS’s are made up of different kinds of components (i.e. inputs, outputs, operators, guarantors, and executors), with different strengths and weaknesses in dealing with problems and issues of various extent of complexity (Mitroff and Linstone, 1993). Each type of IS holds a particular view on what is valid knowledge, which is not compatible with that of other ISs. For our discussion, understanding the nature of various ISs enables us to discuss what is as well as what should be the ISs underpinning an effective HI study. The natures of various types of ISs are summarized in Table 1 based on Mitroff and Linstone (1993), Van Wyk (1997) and the writer’s own interpretation of them.

Table 1: A summary on the characteristics of different types of Inquiry Systems (ISs)

<i>Inquiry System (IS) type</i>	<i>Characteristics</i>
The Inductive-Consensual IS	<ul style="list-style-type: none"> • It holds the view that simple facts as agreed on by a number of qualified observers are recognized as inputs to the IS and a conclusion can be inferred based on a set of observations. • Truth is singular. • It endorses Machine Age Thinking¹ and the Lockean Inquirer (Consensus). • It is only capable of dealing with clearly bounded problems.
The Analytic-Deductive IS	<ul style="list-style-type: none"> • It applies mathematical operations and laws of logic on numerical scores of a number of components to produce a single output as a numerical score. • Truth is singular. • It endorses Machine Age Thinking and the Leibnizian system (Fact nets). • It is only capable of dealing with clearly bounded problems.
The Multiple Realities IS	<ul style="list-style-type: none"> • The IS examines “a range of different data-model/theory couplings that represent various views or representations of the problem” (Mitroff and Linstone, 1993). • The IS cherishes the hope that “as a result of viewing

¹ *Machine Age Thinking* embraces analysis, reductionism, determinism, and the mechanistic view of the world (Ackoff, 1981).

	<p>the range of models... the decision-maker will be in a stronger position to produce... a new model that is a creative synthesis of the initial ones” (Mitroff and Linstone, 1993).</p> <ul style="list-style-type: none"> • This IS stresses the importance of “rationality and logical consistency” (Mitroff and Linstone, 1993). • This IS poses their results as hypothetical or conditional models, which form as “a blueprint for action” (Mitroff and Linstone, 1993). • It is capable of dealing with relatively unbounded problems with a multi-disciplinary orientation in problem-solving. • It is receptive to Systems Age Thinking². • It endorses the Kantian Inquirer (Representation) and the Singerian Inquirer (Progress).
The Dialectic IS	<ul style="list-style-type: none"> • It makes use of data to “surface the intense differences in background assumptions between two or more divergent positions” in a decision-making context (Mitroff and Linstone, 1993). • The IS endorses the view that valid knowledge is produced as “a result of an intense debate between two polarized positions” (Mitroff and Linstone, 1993). • It is capable of dealing with relatively unbounded problems. • It is receptive to Systems Age Thinking and endorses the Hegelian inquirer (Dialectic).
The Multiple Perspective IS	<ul style="list-style-type: none"> • It favors a trans-disciplinary orientation in problem-solving and knowledge production. • It considers that “all IS’s are interdependent” (Mitroff and Linstone, 1993). • It respects science of logic, social justice and personal ethics in problem-solving as well as knowledge creation, with a multiple perspective orientation. • It is committed to Systems Age Thinking • It endorses the Singerian Inquirer (Progress) and the Churchmanian inquirer. • It is capable of dealing with unbounded problems.

Primary HI approaches, based largely on (i) humanistic geography, (ii) critical human geography thinking [from the subject domain of human geography], (iii) the hermeneutic research, and (iv) the critical theory [from the subject domain of social research], are mainly affiliated with the Multiple

² *Systems Age Thinking* embraces synthesis, expansionism, producer-product relationship, and teleology (Ackoff, 1981).

Realities IS and the Multiple Perspective IS. Nevertheless, in the current literature of HI, as found in the Human Geography and Housing Studies literature, the theoretical anchoring of HI on these two ISs are not explicit. Thus, by unequivocally anchoring HI on the Multiple Realities IS and the Multiple Perspective IS, HI is able to explain how it is able to create valid knowledge as recognized by these two ISs. Moreover, by doing so, the theoretical and methodological foundation of HI can be substantially enriched and more easily communicated to the academics' and practitioners' communities. Mitroff and Linstone (1993) also remind us that different ISs are capable of dealing with problems with different extent of boundedness and complexity. Specifically, the Inductive-Consensual IS and the Analytic-Deductive IS mainly deal with clearly bounded/relatively simple problems; the Multiple Realities IS and the Dialectic IS are more capable to cope with problems that are less bounded and more complex. Finally, the Multiple Perspective IS is best equipped to tackle unbounded and highly complex problems. Based on this reasoning, an HI approach, if firmly grounded on the Multiple Realities IS and, especially, on the Multiple Perspective IS, should be expected to be able to cope with HI/HS phenomena and issues of high complexity. A closer look at this topic of complexity is made in the next section.

The relevance of the system complexity model for HI study

In an intuitive way, one can feel that some HS issues are more complex than others. Consider the following news extracts (re: Table 1) as sample reported HS issues for our discussion.

Table 1: News extracts on Housing Studies

News extract 1 (Li, 2014)

“Mainland developer Grand Sun Real Estate... announced plans to cooperate with young people to build affordable homes for them.... Under current rules, prospective homebuyers must pay an initial sum of 30 percent or 300,000 yuan if they want a unit costing 1 million yuan... “They can chip in the 30 per cent initial payment as a shareholder of the scheme,” Sun [a director at Grand Sun] said... Cooperative schemes earmarked to build affordable homes for young people... raise concerns as there is no regulation to protect such investors...”

News extract 2 (Wong, 2014)

“A plan to move Yuen Long South’s rural industrial operations into high-rise factory buildings to free up space for flats and cut pollution has run into strong opposition... ..many operators are opposed to the plan, which they say could put jobs at risk... Ken Hsu Wei-chian, chairman of the New Territories Warehouse and Logistics Business Association, said.. “How can small business pay for the construction of costly facilities?....” ... Spread across the New Territories, brownfield sites re eye-sores and sources of pollution...”

News extract 3 (Ng, 2014)

“About 60 percent of the greenbelt sites identified by the government for rezoning to build flats are covered by trees, a green group says, despite the administration’s claim that the sites are “developed”.... “The government likes to make use of the excuse that Hong Kong faces a serious housing shortage and even green land and forests must be flattened to build flats,” Tam (Green Sense president) added... Some residents of the upmarket Tycoon Place and Richwood Park developments in Tai Po and Dynasty Heights in Sham Shui Po are also up in arms at plans to build on green-belt land close to their homes...”

News extract 4 (Lee, Tsang, and Nip, 2014)

“Opponents prepared yesterday for the next stage of fight against plans for new towns in the northeastern New Territories... Villagers who will lose their homes declared that they were fighting “for the future of Hong Kong”..... The government says that the new towns in Kwu Tung and Fanling are vital to its plans to ease the city’s shortage of flats. But opponents say much of the land will be used for luxury homes and that developers and government “cronies” will be the big winners...”

News extract 5 (Crowley, 2014)

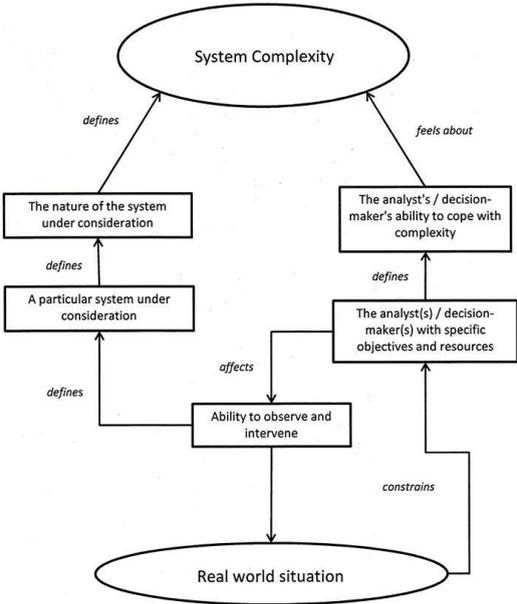
“As the brutal fighter of the Islamic State of Iraq and Greater Syria (ISIS) rampaged through northern Iraq in mid-June, a spokesman for the group issued a statement taunting its shaken enemies..... he warned that his fighters, who follow a radical strain of Sunni Islam, would take revenge against al-Maliki’s regime, which is dominated by Shi’ites. But this vengeance would not come through the capture of Baghdad, the spokesman vowed. It would come through the subjugation of Najaf and Karbala, cities that are home to some of the most sacred Shi’ite shrines.... ISIS is but one front in a holy war that stretches from Pakistan across the Middle East and into northern Africa.... The Sunni radicals’ dream of establishing an Islamic caliphate – modeled on the first reign of the Prophet Mohammed in the 7th century – has no place for Shi’ites.....”

Referring to Table 1, news extract 1 is a mainly “how-to” and bounded problem, exhibiting a relatively low level of hard complexity. News extracts 2 and 3 describe problems involving a number of considerations with conflicting interests between stakeholders, thus showing some soft complexity; finally, news extracts 4 and 5 depict place/ home-related problem situations with intense social/economic/cultural conflicts and systemic coercive factors. All in all, the problems as exhibited in news extracts 2-5 are less bounded and show a higher level of soft complexity. Based on the works of Mitroff and Linstone (1993),

one would expect that the HS problem as described in news extract 1 can be dealt with with simpler ISs such as the Inductive-Consensual IS or the Analytic-Deductive IS, while problems as depicted in news extracts 2 to 5 can only be addressed effectively with more sophisticated IS's such as the Dialectic IS, the Multiple Realities IS and the Multiple Perspective IS (re: Table 1). An HI investigation has to be aware of the consideration of HS problem complexity when relying on a specific IS for a particular HI study.

Due to the vital consideration of HS problem complexity in an actual HI investigation, the notion of complexity itself needs to be more closely examined. As an analytical concept, system complexity is central in Systems Thinking works, see for examples, Flood and Carson (1988), Warfield (1999) and Murray (2003). The writer draws on the system complexity model (Ho, 1986; Ho and Sculli, 1995) for the discussion here, see Figure 1.

Figure 1: A System Complexity Model



In this static model of system complexity (re: Figure 1), the complexity of a system is determined primarily by the number of elements involved, the number of linkages among the elements, the attributes of the elements and linkages involved, and the patterns of the linkages. Other than that, the visibility and transparency of system can also make the system appear more complex. The analyst/ decision-maker (or a group of analysts/ decision-makers) is also relevant in the discussion of system complexity because the resources and ability possessed by the analyst(s)/ decision-maker(s) and the objectives of the analyst(s)/ decision-maker(s) in approaching a specific HS phenomenon can also influence the perceived system complexity of the HS phenomenon under review. Finally, the real-world situation and the analyst(s)'s/ decision-maker(s)' actions, objectives and perceptions make up a mutual causation loop. In a nutshell, it is too simplistic to talk about an HS issue or phenomenon as bounded or unbounded; simple or complex. The complexity of a specific HS issue or phenomenon is shaped by a number of interacting factors, resulting in a specific emergent property of system complexity (with a particular bundle of hard-soft complexity). Nonetheless, as HI issues are embedded in social systems that are purposeful as a whole, while possessing parts that are also purposeful³ (Ackoff and Gharajedaghi, 1996), these HI issues tend to exhibit soft complexity. For those who consider that our society is plagued by severe social contradictions, HI issues often possess tremendous soft complexity and systemic tension, such as the examples of reported issues in news extracts 4 and 5. The elements and linkages involved in an HI issue or phenomenon can also be conceptually organized and located into a number of related components as identified in the

³ In the Soft Systems literature, a *purposeful system* has free will and can determine its own goals as well as how to pursue them. This is in contrast to a *purposive system* which cannot choose its own goals though it can pursue different goals at different times.

Processes for Meanings model (Housing Imagination) (Ho, 2014b), namely,

Component 1: External trends and events

Component 2: Perceived world

Component 3: Appreciative settings of individuals and groups

Component 4: Individuals and groups

Component 5: Discourses (Socially created ones as related to HS)

Component 6: Created meanings as related to HS

Component 7: Assemblies of association intentions and accommodations as related to HS

Component 8: Purposeful actions as related to HS

Component 9: Habitual activities as related to HS

By organizing elements and linkages⁴ as related to a specific HS issue or phenomenon, e.g. homelessness, housing affordability and social housing policy, in the Processes for Meanings model, the nature of system complexity becomes more comprehensible to the HI researchers and the decision-makers/ stakeholders involved. Nevertheless, with the potentially large number of elements and linkages drawn in, these elements and linkages may have to be aggregated with a hierarchy of levels of details when the Processes for Meanings model (Housing Imagination) is employed. Also, the elements and their linkages can be depicted in a number of system diagram forms (Open University, 2014), such as a rich picture, an influence diagram or a multiple cause diagram. [No illustrative examples on how to do so, however, are provided in this brief paper.] When using a theoretical framework such as the Processes for Meanings model (Housing Imagination), analysts and researchers should be aware of the fact that this

⁴ For a start, one can record the elements and linkages related to an HS issue, e.g. homelessness, by constructing a cognitive map based on reading an HS textbook.

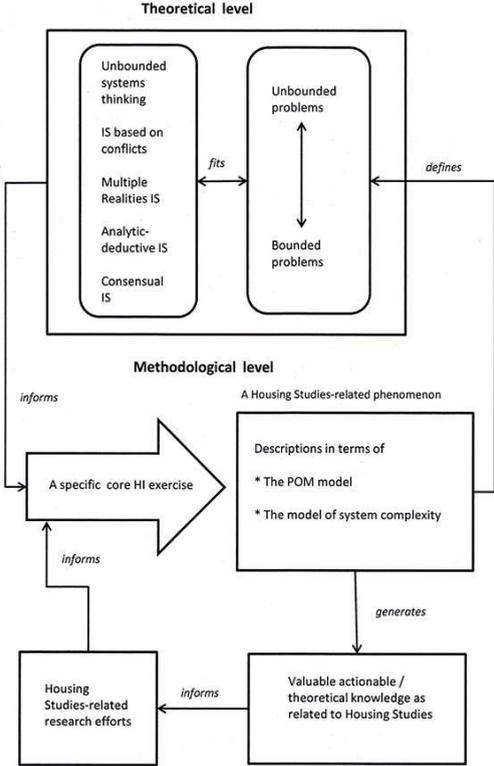
model is adapted from Soft Systems Thinking (SST) (Ho, 2014b). Thus, essentially, it endorses a view of human system in which “social entities.... seek to manage relationships” rather than seeking to achieve goals (Checkland and Holwell, 1998). [Alternatively, the various elements and linkages uncovered from an HI investigation can be conceptually organized with the Soft Systems Methodology⁵ as a conceptual organizing framework. This exercise is not taken up in this paper.] Nonetheless, it is theoretically feasible to migrate from the SST perspective to, say, the Critical Systems Thinking perspective when applying the Processes for Meanings model in an HI study.

An overview of a systems-based Housing Imagination evaluation framework

Having addressed the first two issues raised at the beginning of the paper as well as explained the relevance of the notions of IS, system complexity and the Processes for Meanings model (Housing Imagination) in the discussion, the writer now synthesizes the ideas from the discussion into a systems-based HI evaluation framework. This is provided in Figure 2.

⁵ The conventional model of *Soft Systems Methodology* (SSM) consists of seven stages, namely, (1) Problem situation considered as problematic, (2) Problem situation expressed, (3) Formulation of root definitions of purposeful activity systems, (4) Construction of conceptual models based on root definitions, (5) Comparison of models and real world, (6) Formulating systemically desirable and culturally feasible changes, and (7) Take actions to improve the problem situation (Checkland and Scholes, 1990). Various HI elements involved in an HI study can be located in the seven SSM stages.

Figure 2: A systems-based HI evaluation framework



The systems-based HI evaluation framework recognizes various ISs as major theoretical perspectives and mechanisms that explain how they can produce their own versions of valid knowledge as well as their respective capabilities to cope with issues/ phenomena with different extent of boundedness. The extent of boundedness of HS issues and phenomena can be uncovered with the Processes for Meanings model (Housing Imagination) and the notion of system complexity. In order to effectively address a specific HI issue and phenomenon with a specific extent of felt system complexity by the HI researcher(s) and decision-maker(s), an HI approach needs to anchor on an appropriate IS that sufficiently recognizes such level of system complexity as possessed by the issue and phenomenon. Very

often, HS issues and phenomena exhibit a high degree of soft complexity; in this case, ISs such as the Multiple Realities IS, the Dialectical IS and the Multiple Perspective IS are the appropriate choices (re: Table 1). Though existing HI thinking is implicitly affiliated to these ISs (Ho, 2014a), the existing core HI approach, as described in Ho (2014a; 2014b) can be further enhanced by adopting more methodological and philosophical principles from these ISs. HI researchers, meanwhile, should also be aware of the limitations of the various ISs and the difficulties of their employment in practice. Such limitations and difficulties have been explained in Mitroff and Linstone (1993). For example, there is no hard and fast rule on how to resolve the built-in tension when multiple and incompatible perspectives are considered based on the Multiple Perspective IS.

In Figure 2, the systems-based HI evaluation framework depicts the HI exercise as a never-ending learning process via critical reflection and HS practices. The framework comprises two levels: the theoretical level and the methodological level. When theoretically grounded on the Multiple Perspective IS (Mitroff and Linstone, 1993) or Creative Holism (Jackson, 2003), this evaluation framework is able guide HI problem-solving that can avoid the pitfalls of solving the wrong HI problem, which are, according to Mitroff (1998): (a) “picking the wrong stakeholders”, (b) “selecting too narrow a set of options”, (c) “phrasing a problem incorrectly”, (d) “selecting the boundaries/scope of a problem too narrowly” and (e) “failing to think systemically”. Moreover, the evaluation framework, being multiple-perspective, when practiced, is likely to stimulate new HI approaches for HI exercises and investigations.

Implications on HI pedagogical practices

The HI literature is full of theoretical principles/ viewpoints that require long-term devoted learning to comprehend. No

wonder that the writer's part-time students on HI have experienced much difficulty to understand these ideas. As one of them said, "the subject of HI seems so complicated that it should be taught at the Ph.D. Degree program, not at the Undergraduate Degree program." Moreover, the part-time students are already tired from work when they attend the evening HI classes; thus, they are not in a good physical and mental condition to study abstract HI notions. The following abstract HI principles and viewpoints are typical from the HI literature:

- a. "Geographical agents were not only economic actors..... an emphasis on the human subject as the creator and interpreter of meaning... ..the individual as an intentional agent, whose actions are shaped not only by material needs but also by a geographical imagination that included moral and aesthetic ideals.." (Entrikin and Tepple, 2005).
- b. "...the (non-feminist) discipline operated with...a masculinist epistemology based on a way of knowing the world (through universalism), framing the world (through compartmentalization) and representing the world (through objectivity)... .. Feminists critics of excessive compartmentalization point to the homogenizing effects of taxonomies, which result in a tendency to overlook difference within and across research objects..." (Dixon and Jones III, 2006).
- c. "Dialectical thinking emphasizes the understanding of processes, flows, fluxes, and relations over the analysis of elements, things, structures and organized systems all.. ..As long as (entities) are reproduced by the relations constituting them, entities seem to be stable and well defined.... These 'permanance' are illusory, however..." (Henderson and Sheppard, 2006).

While there is no short-cut to effective intellectual learning, to facilitate students to have a practice-/ practical-oriented

exposure to the HI subject at the outset, the writer found that usage of real-life examples to illustrate HI notions and principles are very helpful. These HI examples, in the forms of videos, photos, and news articles, etc., come from Youtube, Internet news portals (e.g. cnn.com and yahoo.com.hk), local newspapers (e.g. South China Morning Post), popular journals (e.g. Time, The Economist and Newsweek), Facebook posting by friends and some HI-related academic journals (e.g. *Housing Studies* from Taylor and Francis and *Housing, Theory and Society* from Taylor and Francis). [Photos, news articles, and videos are typical artifacts for an HI study, anyway.] These learning materials are referred to or posted in a number of Facebook groups and photo-albums for HI students to access online, see, for examples, Ho (2014c; 2014d; 2014e; 2014f; 2014g; 2014h; 2014i; 2014j). Some of these videos have also been played in the writer's HI lectures to facilitate in-class teaching. From the experience of teaching the subject of HI, this writer found that it is easier for students to comprehend the HI principles and viewpoints with videos such as those shown in Exhibits 2 and 3 in the **Appendix**.

From the students' recent HI assignment presentations, the writer noticed that the line of reasoning was very often not systematically formulated by students. In this writer's view, this is partly due to the lack of HI methodologies and theoretical frameworks to guide students' analysis works. For this reason, the writer maintains that it is worthwhile to formulate HI methodologies and theoretical frameworks as a major task in HI research works. In this regard, the writer's works on HI (Ho, 2014a; 2014b) are relevant, as is this paper also, which offers a systems-based HI evaluation framework. The discussion in this section has addressed issue 3 raised at the beginning of the paper. It benefits from the answers to issues 1 and 2 in the previous sections.

Concluding remarks

Efforts to elaborate on the theoretical foundation of HI and to develop relevant HI methodologies and theoretical frameworks are much needed. This paper is an attempt to do so, as has also been done in two other HI papers from this writer. These HI methodologies and theoretical frameworks, in turn, guide HI pedagogical practices and student's learning on HI. From the writer's students' feedback, these students do appreciate this kind of works on methodologies and theoretical frameworks for guiding their learning on the HI/ HS literature. Nevertheless, much more need to be done on this theoretical development endeavor. At the same time, this paper also makes suggestions on how to teach the subject of HI to make it comprehensible to students who are not comfortable to learn abstract HI notions and viewpoints. The main suggestion, in this regard, is to make more use of real-life examples, in the form of videos, photographs and newspaper articles, etc., from secondary sources such as the social media and published journals and newspapers, in HI pedagogical practices.

Finally, the writer finds that:

- (a) contemporary systems thinking is able to offer tremendous intellectual inspirations for theoretical development of HI, and
- (b) pedagogical practices and theoretical examination on the subject of HI form a fruitful mutual learning process between them.

What is also needed, but not done so far, is to conduct more serious empirical research on HI to make theoretical advancement on HI. Hopefully, some of the HI students that we now have will contribute to this research activity via final year dissertation projects in the near future. Meanwhile, scholars interested in HI are invited to join this intellectual venture of HI.

BIBLIOGRAPHY

- Ackoff, R.L. 1981. *Creating the corporate future*. Wiley. Chichester.
- Ackoff, R.L. and J. Gharajedaghi. 1996. "Reflections on Systems and their Models" *Systems Research*. Vol. 13(1). Wiley. Chichester: 13-23.
- Checkland, P. and J. Scholes. 1990. *Soft Systems Methodology in Action*. Wiley. Chichester.
- Checkland, P. and S. Holwell. 1998. *Information, Systems, and Information Systems*. Wiley. Chichester.
- Crowley, M. 2014. "Iraq's eternal war" *Time*. June 30: 18-24.
- Dixon, D.P and Jones III, J.P. 2006. "Chapter 4: Feminist geographies of difference, relation, and construction" in Aiken, S. and G. Valentine. (editors). *Approaches to Human Geography*, SAGE Publications: 42-56.
- Entrikin, J.N. and J.H. Tepple. 2006. "Chapter 3: Humanism and Democratic Place-making" in Aiken, S. and G. Valentine (editors) *Approaches to Human Geography* SAGE Publications: 30-41.
- Flood, R.L. and E.R. Carson. 1988. *Dealing with Complexity: An Introduction to the Theory and Application of Systems Science*. Plenum Press. New York.
- Henderson, G. and E. Sheppard. 2006. "Chapter 5: Marx and the Spirit of Marx" in Aiken, S. and G. Valentine. (editors) (2006) *Approaches to Human Geography*, SAGE Publications: 57-74.
- Ho, J.K.K. 1986. *A study of problem contexts, problems, and attempted solutions using systems concepts at Harlands of Hull*. MA in Management Systems thesis. Department of Management Systems and Sciences. The University of Hull. UK.
- Ho, J.K.K. 2014a. "An endeavor to establish the subject of Housing Imagination based on Critical Systems

- Thinking” *European Academic Research* Vol. 2(2). May: 2048-2066.
- Ho, J.K.K. 2014b. “A Research Note on home study in Housing Imagination using Soft Systems Methodology” *European Academic Research* Vol. 2(3). June: 3659-3675.
- Ho, J.K.K. 2014c. Facebook group: Built Environment Study (url address: <https://www.facebook.com/groups/178966298896032/>) [visited at June 29, 2014].
- Ho, J.K.K. 2014d. Facebook Photo Album on Kowloon Walled City (url address: https://www.facebook.com/josephho33/media_set?set=a.10152361790817090.1073741917.713727089&type=3) [visited at June 29, 2014].
- Ho, J.K.K. 2014e. Facebook Photo Album: Public/ Social Housing (url address: https://www.facebook.com/josephho33/media_set?set=a.10152354799252090.1073741913.713727089&type=3) [visited at June 29, 2014].
- Ho, J.K.K. 2014f. Facebook Photo Album: Housing Imagination (url address: https://www.facebook.com/josephho33/media_set?set=a.10152326897122090.1073741895.713727089&type=3) [visited at June 29, 2014].
- Ho, J.K.K. 2014g. Facebook Photo Album: Shanty towns and slums (url address: https://www.facebook.com/josephho33/media_set?set=a.10152385467822090.1073741923.713727089&type=3) [visited at June 29, 2014].
- Ho, J.K.K. 2014h. Facebook Photo Album: Urbanization and suburbanization (url address: https://www.facebook.com/josephho33/media_set?set=a.10152346396652090.1073741906.713727089&type=3) [visited at June 29, 2014].

- Ho, J.K.K. 2014i. Facebook Photo Album: Gentrification (url address: https://www.facebook.com/josephho33/media_set?set=a.10152345538677090.1073741904.713727089&type=3) [visited at June 29, 2014].
- Ho, J.K.K. 2014j. Facebook Photo Album: Homelessness (url address: https://www.facebook.com/josephho33/media_set?set=a.10152182271537090.1073741862.713727089&type=3) [visited at July 1, 2014].
- Ho, J.K.K. and D. Sculli. 1995. "System Complexity and the Design of Decision Support Systems" *Systems Practice* Vol. 8(5). Plenum Publishing Corporation: 505-515.
- Jackson, M.C. 2003. *Systems Thinking: Creative Holism for Managers*. Wiley. Chichester.
- Lee, A., E. Tsang and A. Yip. 2015. "New-towns fight is for future of HK, says villagers" *South China Morning Post*, June 29.
- Li, S. 2014. "Housing: Trust fund mooted for low-cost homes" *South China Morning Post*, May 28.
- Mitroff, I. 1998. *Smart thinking for crazy times: the Art of Solving the Right Problems*. Berrett-Koehler Publishers, Inc.. San Francisco.
- Mitroff, I.I. and H.A. Linstone. 1993. *The Unbounded Mind: Breaking the Chains of Traditional Business Thinking*. Oxford University Press. New York.
- Murray, P.J. 2003. "So What's New About Complexity?" *Systems Research and Behavioral Science* 20. Wiley. Chichester: 409-417.
- Open University. 2014. "Systems Thinking and Practice: Diagramming". (url address: <http://systems.open.ac.uk/materials/T552/>) [visited at June 2, 2014].
- Van Wyk, G.C.B. 1997. "Inquiring Systems". Unpublished research paper. (url address: [EUROPEAN ACADEMIC RESEARCH - Vol. II, Issue 4 / July 2014](http://systems-</p></div><div data-bbox=)

thinking.ca/myfiles/Inquiring%20systems.pdf) [visited at June 30, 2014].

- Warfield, J.N. 1999. "Twenty Laws of Complexity: Science Applicable in Organizations" *Systems Research and Behavioral Science* 16. Wiley. Chichester: 3-40.
- Wong, O. 2014. "High-rise plan for rural industry hits opposition" *South China Morning Post*, May 16.

Appendix: examples of videos/ movies as HI artifacts from Exhibits 1 to 3

Exhibit 1: a movie that touches on the Small House (ding uk) Policy in Hong Kong



(url address: <http://www.ejinsight.com/20140521-new-territories-small-house-policy/>) [visited at May 31, 2014]

Exhibit 2: two related brief dramas on the meanings of home as illustrated in an episode with a young man meeting his girlfriend's family for the first time



(url address: <https://www.youtube.com/watch?v=NSy5VsWjFkA>) [visited at June 1, 2014]

Joseph Kim-Keung Ho- An Elaboration of a Systems-based Housing Imagination Evaluation Framework for Research and Pedagogical Practices



(url address: <https://www.youtube.com/watch?v=uHuRmN9-iyU>) [visited at June 1, 2014]

Exhibit 3: a video on the lives of residents in the Kowloon Walled City



(url address: https://www.youtube.com/watch?v=x29vVQiV4_o) [visited at June 29, 2014]