

**Governing with the Commons:
The commons system's potential as an experimental local public sphere
and its implication to deliberative democracy**

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Keywords

Experimental Local Public Sphere, Social Learning, Commons 2.0s, Complex Adaptive Systems (CAS), Deliberative Democracy

Abstract

This paper discusses the potential of the commons or Common-Pool Resource (CPR) systems as the experimental local public sphere and its implication to deliberative democracy. Specific focus is placed on the contemporary commons systems conceptualized as the commons 2.0 systems. The paper argues that the commons 2.0 systems can strengthen social learning through localized deliberation and collaborative experiments as the experimental local public sphere. Deliberation and experimental collective actions in the collaborative framework of the commons 2.0s enable social learning of greater extent including double-loop and triple-loop learning through reflective and experimental collaborative engagements. Enhanced through the experimental local public sphere, social learning contributes to the evolution of local institutions and capacity critical for collaborative self-governance. From the perspective of Complex Adaptive Systems (CAS), decentralized deliberation and collaborative experiments result in local optimization through constant evolutionary self-adaptation.

For deliberative democracy, this suggests a new perspective focusing on localized deliberation sphere of the self-governing commons systems in which reflexive and experimental engagements enhance social learning at local level. In deliberative democracy, such social learning facilitated through participatory social interactions is of critical importance as it contributes to collaborative capacity and reciprocal communicative reasoning – the essential precondition of deliberative democracy. In this sense, the commons 2.0 systems can be utilized as the community level capability building system through localized deliberation and collective experiments for collaborative governance strengthening the prospect of deliberative democracy. The role of the commons 2.0 systems in enhancing social learning as the experimental local public sphere is further illustrated through the case of the Seongmi Mountain community in Seoul, Korea.

**Governing with the Commons:
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<Framework >

The New Governance: Collaborative Multi-level Governance

Since the late 1980s, the concept of governance, along with its recent conceptual development, has shifted from a mercantile and hierarchical one to something that is more organic and network-based. In contrast to the static and hierarchical "received governance," the "emergent governance" (Geertz, 1973) approach emphasizes the dynamics of inter-agent and agent-system interactions and the synergy out of the interactions in dealing with complex issues. In the new governance mode, cooperation and coordination are essential functions (Mayntz, 1998) to reap the potential of multiple needs and capacities (Kooiman ed., 1993).

In fact, the conceptual shift implies the new governance mode or the different framework of ordered rule (Rhodes, 1996). Naturally, along with the shift, scholars came up with new definitions of governance such as

".. the reflexive self-organisation of independent actors involved in complex relations of reciprocal interdependence, with such self-organisation and resource-sharing to develop mutually beneficial joint projects and to manage the contradictions and dilemmas inevitably involved in such situations"

(Jessop, p 101 in Bang et al., 2003)

"... the whole of public as well as private *interactions (emphasis added)* taken to solve societal problems and create societal opportunities"

(Kooiman & Bavinck, 2005, p 17)

Based on the new definitions, new governance models have been suggested such as 'New Governance' (Rhodes, 1997), 'Network governance' (Jones, Hesterly & Borgatti, 1997), 'Collaborative governance' (Huxham, 2000), Multi-level Governance (Hooghe & Marks, 2002);

Marks et al., 1996), 'Interactive governance' (Kooiman, 2003), 'Adaptive governance' (Folke et al., 2005), 'Polycentric governance or Multi-layered Governance' (Ostrom, 1997; Ostrom, 2005). Such governance approaches do not differ significantly from each other as they share important characteristics:

- 1) Self-organizing (Self-governing)
- 2) Polycentric (Dispersion)
- 3) Network (Vertical and horizontal linkages)
- 4) Interactions by autonomous but interdependent actors
- 5) Collaboration and Learning as the key functions (for a further discussion see Berkes, 2005)

The new concept of governance provides a conceptual framework in which we can envision governance beyond the government. This means that the new governance demands more than just a good and well intended government for good governance. In the new governance framework, good governance necessitates the *interactions* of various governing actors, and the institutional framework to build the capacities of the governing actors (both individuals and systems) to harness diversity. In the capacity building, the last two properties - collaboration and learning bear especially significant importance.

The paper uses the term 'the new governance' for simplicity focusing on shared characteristics of various governance approaches, and "collaborative multi-governance" as it captures the interdependent and the multi-layered nature of the socio-ecological systems, in which collaboration becomes the indispensable framework for interaction.

Given the importance of collaboration in the new governance approach, it is likely that Common-Pool Resource systems (CPR) or the commons systems have great but underexplored potentials as 'self-governing' systems creating collective actions within a collaborative framework. In her seminal book on *Governing the Commons*, Ostrom describes the common-pool resource systems (CPRs) as a non-market and non-state institutional foundation upon which "communities of individuals have relied... to govern some resource systems with reasonable degrees of success over long periods of time" (Ostrom, 1990, p. 1). This line of thought is shared by Kooiman. On interactive socio-political governance, a variant of the new governance model, he states

"Instead of relying on the state or the market, socio-political governance is directed at the creation of patterns of interactions in which political and traditional hierarchical governing and social self-organization are complimentary, in which responsibility and accountability for interventions is spread over public private actors"
(Kooiman, 1993, p 252)

Moreover, he considers the commons systems as one of the critical self-governing units for the new governance (Kooiman, 2003, p 89-90). In this sense, the commons systems are expected to play a critical role in forming the patterns of interactions to build capacity through collaboration and learning in the new

governance framework.

Collaborative Multi-level Governance with the Commons Systems: The Experimental Local Public Sphere

By paying attention to the relationship between collaboration, learning and interactions in the new governance model, the paper wishes to explore the potential of the common-pool resource systems (CPRs) in enhancing social learning and collaborative capacity through social interactions. The paper argues that the contemporary CPR systems, conceptualized as *the commons 2.0 systems*, facilitate *social learning* and *collaborative capacity* through social interactions like *deliberation* and *experimental collective action* by providing the experimental local public sphere in which such collaborative interactions can take place on a long term. In addition, the paper discusses the implication of the newly identified role of the commons systems to deliberative democracy.

The paper attempts to contribute in its own humble way by categorizing the commons of the past and today mainly by differences in their socio-political contexts, and identifying the roles of the contemporary commons in the new governance model along with the new implication to deliberative democracy. Specifically, through examining the role of the commons 2.0 systems as an empowered deliberative space producing experimental collective actions through deliberation, the paper proposes the transition in the focus from governance with formally recruited publics to governance with the self-governing commons.

Methodology

To establish the validity, the hypothesis will be analyzed both theoretically and empirically using a case study of the present-day commons conceptualized as the commons 2.0 systems. In theoretical analysis, the commons 2.0 systems are identified as the experimental local public sphere and its impact in accelerating social learning and collaborative capacity drawing upon the theories of collaboration and social learning.

For a case analysis, a specific urban commons system in Seoul, South Korea called the Mt. Seongmi community will be discussed to illustrate the role of the commons 2.0 systems as the experimental local public sphere in enabling extensive social learning through deliberation and experimental collective action. The collaboration process of self-governing commons is posited as the “action situation” (Ostrom 2005) where collective decisions are made and implemented, based on the Institutional Analysis and Development (IAD) Framework developed by Workshop in Political Theory and Policy Analysis at Indiana University.

Following the IAD framework, the cases will be described according to the three variable framework of the action situation (also called action arena): 1) institutions or rules that govern the action arena, 2) the characteristics of the community or collective unit of interest, and; 3) the attributes of the physical

environment within which the community acts (Ostrom 1999; Ostrom 2005).

<Theoretical Analysis>

Why the Commons 2.0 Systems?

By definition, CPRs deal with both natural resources *and* man-made resources (Digital Library of the Commons, n.d.). The original definition of CPRs by Ostrom (1990) does not confine CPRs to natural resources. Essentially, CPRs refer to collaborative self-governing systems concerning resources subject to consumption rivalry, but difficult to exclude potential users from using (Ostrom, 1990, p. 30) due to technical reasons or importance of the resources.

However, due to the predominance of the commons literature dealing with natural resources in developing nations or rural regions, many people, including some researchers, have developed a misperception that CPRs or the commons systems concern natural resources only, or are pertinent to non-industrial societies only. Furthermore, there is a widespread misconception regarding the commons systems, viewing it as a somewhat obsolete and primitive form of institutions due to the insufficient study on the contemporary commons systems. Besides these unfortunate misunderstandings, the rapidly increased number of people living in urban areas or non-agricultural economies, and the importance of non-natural resources in societies, making the CPR or the commons concept 'updated' seems unavoidable now.

Consequently, a new concept is called for to illustrate the CPR systems governing broadly defined resources in not only rural or agricultural contexts, but also urban or post-industrial contexts. The new concept shall allow us to differentiate the post-modern commons systems from the traditional ones which are mainly confined to natural resources in rural or agricultural settings, and make the commons systems more applicable to today's context in which non-natural resource regime and urban settings play increasingly important roles. Hence, the paper attempts to conceptualize the present-day commons systems in comparison with the traditional commons systems, naming the latter the commons 1.0 systems and the former *the commons 2.0 systems*.

What is a Commons 2.0 System?

As listed in the Table 1, the two systems have several distinguishable features related to membership, resources governed, participation & decision making process and so on besides the different socio-political contexts. To briefly illustrate the differences between the commons 1.0 and 2.0 systems, the most important difference is their socio-political contexts. Compared to the commons 1.0s situated within predominantly agricultural and less democratic system environment, the commons 2.0s are nested to post-industrial and more democratic socio-political systems. Also, the former have a relatively strict and imposed membership system

while the latter have a flexible and voluntary system. As per system boundaries, the common 1.0s have geographically clearly defined boundaries whereas the commons 2.0s have somewhat adaptable geographical boundaries. Yet, the latter's boundaries are functionally defined clear enough by self-organized sub-units in organizational, associational, informal gathering forms in addition to spatial boundaries as the systems have open and networked system structure.

Moreover, regarding participation and decision making processes, compared to the traditional commons systems, the commons 2.0 systems necessitate more proactive participations of individual members since the systems have stronger emergent characteristics due to better secured democratic morals and freer entrance to and exit from the systems requiring self-organized interactions of individuals. The commons 2.0 systems' requirement for deeper engagements is imperative in making the systems as self-governing systems in a real sense as self-governance is founded on collaboration among independent (meaning empowered to decide and act independently) but interdependent actors through substantial participation and social interactions.

On one hand, the traditional commons have been usually under the strong control of cultural and religious traditions of local societies in which not everyone were able to actively participate in the institutional design and rule making. Generally, the right to participate in decision making process was limited to male heads of households or certain individuals considered as "deserving more power" based on their social class and gender. Besides voice, entrance to and exit from the system was also restricted in many cases.

Although the powerful cultural and religious forces offered strong stability and community bonds, they also posed the danger of inflexibility and dogmatization of well intended rules restricting the system adaptability and resilience. Perhaps, the danger of rigidity and oppressiveness was much weaker than that of the feudal system or early nation state systems with much bigger capacity for violence. Yet, limitations in terms of voice, entrance, and exit surely existed because democratic and human rights values were not as widely accepted as today. It is possible that such rigidity and oppressiveness were especially during the times when the enclosure of the "non-state" space (Scott, 2009) by the state became intensified.

On the other hand, today's improved recognition of democratic values, information accessibility and availability, and educational level of the public encourages greater potential for empowerment of individuals in the commons systems enabling a greater level of participation and the freedom to enter and exit the systems.

Of course, it is possible that some pre-modern commons systems had been relatively democratic if the "non-state" space was small scaled and safe from the state encroachment. Yet, in general, the possible degree of realizing and sustaining democratic morals in the pre-modern times is still limited compared today's commons systems considering the nested nature of individual commons. It is more difficult to sustain a democratic system when you have to struggle to persist with its

values in the face of the expansion or invasion of undemocratic systems without global recognition and consensus on democratic values.

Table 1. The Comparison of the Commons 1.0 and 2.0

	Commons 1.0s	Commons 2.0s
Spatial & socio-political Settings	<ul style="list-style-type: none"> ✓ Rural areas ✓ Insufficient recognition of democratic morale and value, Unequal opportunity in terms of power and responsibility, Poor accessibility and availability of information, Low educational level of the public 	<ul style="list-style-type: none"> ✓ Both Rural and Urban areas ✓ Widely accepted democratic morale and value, Improved opportunity equality in terms of power and responsibility, Advanced accessibility and availability of information, Increased educational level of the public
* Different commons have different socio-political settings even in the same temporal setting		
Resources	<ul style="list-style-type: none"> ✓ Mainly natural resources ✓ Often preexisting ✓ Sometimes labors or simple man made resources needed for natural resource governance 	<ul style="list-style-type: none"> ✓ Various kinds of resources (Ranging from natural resources to non-material resources like human, monetary & infrastructure resources related to welfare of the members) ✓ Often new kinds of resources are created
Membership & System Boundaries	<ul style="list-style-type: none"> ✓ Rigid & Imposed ✓ Mainly determined by strict geographical boundaries ✓ System boundaries overlap with geographically determined community unit ➔ Both exit and voice options are limited 	<ul style="list-style-type: none"> ✓ Flexible & Voluntary ✓ Conditioned by flexible geographical and functional boundaries through a network of members of organization, association, and informal gatherings ✓ System boundaries can overlap and do not overlap with geographically determined community unit ➔ Both exit and voice options are allowed. Hence the role of voluntary royalty or commitment becomes more important than in the Commons 1.0 systems
Participation	<ul style="list-style-type: none"> ✓ Subject to democratic deficit 	<ul style="list-style-type: none"> ✓ Tend to be more democratic

& Decision Making Process	<p>to some extent due to the socio-political stratification existed in many traditional societies</p> <ul style="list-style-type: none"> ✓ Resulting in limited participation and unequal rights of members in decision making process ✓ The degree of participation is restricted by gender and social class of individuals 	<p>due to the promotion of democratic values and ideals in many contemporary societies</p> <ul style="list-style-type: none"> ✓ Resulting in proactive participation and relatively equal rights of members in decision making process, ✓ The degree of participation is affected by economic situation or working hours which is manageable through inclusive deliberation ✓ Yet, the rights to participate is secured for everyone regardless of their gender and social class
Collaboration	<ul style="list-style-type: none"> ✓ Limited depth and scope of collaboration within and between systems 	<ul style="list-style-type: none"> ✓ Greater depth and scope of collaboration within and between communities through networks
Initiation & Development System	<ul style="list-style-type: none"> ✓ The systems emerge through social interactions of limited number of individual agents in strictly defined territorial boundaries ➔ After an initiation stage, the system is considered as the institution of tradition or culture with the strong local institutional stability and ecological resilience but also slow pace of development or evolution ➔ In exchange with the strong local institutional stability, the system may suffer from weaker resilience in regard with changes in bigger socio-ecological systems 	<ul style="list-style-type: none"> ✓ The system emerge through social interactions of individual agents in social network in loosely defined territorial, organizational, associational, or informal gathering-based boundaries evolve ➔ After an initiation stage, the system is considered as the institution of
Social Interactions & Social Learning	<ul style="list-style-type: none"> ✓ Inherent limitation to the three kinds of social interactions due to the less equal and less democratic condition of the broader 	<ul style="list-style-type: none"> ✓ More potential for social interactions going beyond simple information sharing including reflective & experimental interactions

	<p>socio-political systems</p> <ul style="list-style-type: none"> ✓ As social interactions and the accessibility and availability of information are limited, the prospects for social learning get constrained ✓ No social learning prior to collaboration as the commons system is already given 	<ul style="list-style-type: none"> ✓ Social learning prior to collaboration is needed as the commons system is not a given condition maintained by strong cultural or religious institutions ➔ Greater role and potential for self-adapting and self-governing capacity of the commons systems
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Applying the Commons 2.0 Systems and the Multi-level Collaborative Governance to Deliberative Democracy

In deliberative democracy, increased emphasis on “public participation in policy-making” is said to reflect the transition from the government to governance (Cass, 2006, p 11). Also recently, Empowered Participatory Governance (EPG), has been proposed in deliberative democracy, as a strategy to recruit citizens to deliberate and come up with solutions to specific commons issues in local areas (Cohen and Fung, 2004).

Although, these changes imply improved appreciation of the significance of participation and the informal public sphere in ensuring deliberation, they are still framed in the context of the *government* instead of governance. The increased participation of the public is mainly restricted to “policy-making” (Cass, 2006, p 11), and the deliberative public sphere is expected to increase “self-government” (Cohen and Fung, 2004, p 28) instead of self-governance. In the field of deliberative democracy, the old governance framework seems prevalent as governance is mainly perceived as the activity of the government, leaving some room in policy making process only for the citizen participation.

Along with participatory deliberative governance, some deliberative democratic scholars suggest mini-publics, a group of self-consciously recruited publics of modest size and scope to deliberate on specific issues (Dahl, 1989; Goodin and Dryzek, 2006; Fung, 2006). Diverse forms of mini-publics can exist depending on eight design choices 1) visions and types; 2) participant selection and recruitment; 3) subject and scope of deliberation; 4) deliberative mode; 5) recurrence and iteration; 6) stakes; 7) empowerment; 8) monitoring (Fung, 2003).

However even the most ambitious version of mini-publics in terms of visions and types, the participatory democratic governance model does not go further than improving civic engagement in the *government’s* governing activities. The informal public sphere or mini-publics is rather the ad hoc public sphere where *recruited* groups of citizens deliberate to produce supplementary inputs for policy makers. It is not to say such ad hoc public spheres recruited by the government is meaningless. This kind of deliberative space is certainly useful in terms of increasing the

deliberation opportunities as transitional measures before the institutional reform for governance beyond the government. However, the lack of institutional sustainability and self-governance impedes a greater level of participation and thus social learning.

On the other hand, the experimental local public sphere in the multi-level governance or collaborative governance framework goes beyond the inclusion of *selected* citizens in the government's governing activities by focusing on *self governance* through interactions of *self-organized* citizens activating their roles as governing actors. Through the localized experimental and deliberative space of the commons systems, people learn to self-organize and govern effectively through collaboration making the commons systems not only the local deliberative space but also *empowered space* where decisions are deliberated, and implemented (Dryzek, 2011).

Such a “radical” approach may put forward institutional reform for the transition from governing by the government to governance with self-governing actors through interactions within collaborative framework instead of inclusion of selected public to limited extent. By doing so, the commons can address challenges in the field of deliberative democracy such as ‘the problem of scope and depth of participation’ (Cohen & Sabel, 1997), and ‘rigid institutional prescriptions’ (Fung, 2012) while bringing in the unexplored factors like social learning and collaborative capacity enhancement by functioning as the empowered space where experiments based on deliberated decisions are allowed.

Enhanced Social Learning and Collaborative Capacity in the Collaborative Framework of the Commons 2.0s - the Experimental Local Public Sphere

As mentioned earlier, collaboration and social learning is the key factors for capacity building in the new governance. Collaborative frameworks facilitate *social learning* via collaborative engagements among individuals. In other words, collaborative institutional framework structures social interactions so that substantial social learning can take place. For this reason, essential elements of collaboration seem to reflect the necessary conditions for social learning.

By definition, social learning is a change in understanding beyond individual level allowing social changes through interactions across social networks (Keen et al., 2005; Reed et al., 2010) through “collective *action* and *reflection* ... among different individuals and groups” (Keen et al., 2005, p 4, emphasis added). It “occurs when people engage one another, sharing diverse perspectives and experiences to develop a *common framework of understanding and basis for joint action*” (Schusler et al., 2003, p311, emphasis added). These definitions implicate that social learning requires collaborative interactions to produce positive social changes through joint action and reflection. In this regard, it is possible to identify the commons 2.0s as social learning systems as they develop a common framework for understanding and decision making through collaborative engagements.

For self-governing collaborative systems like the commons 2.0s, enhanced

social learning through collective action and reflection enables further development of *collaborative capacity* of the systems. In illustrating this point, the concept of “the communities of practice” is useful. The capacity of social learning units or “the communities of practice” develop based on 1) members bounded by the jointly formed understanding of the group identity in terms of vision and function, and accountability of individuals in terms of both responsibility and rights; 2) proactive participation of members in establishing the learning units through collective engagement; 3) the common pool of resources (Wenger, 2000). It reconfirms that the collaborative interactions, pooling resources and involving individuals in collaborative activities, is an indispensable component of social learning. Consequently, the more social learning take place in the communities of practice, the better they become in collaborating.

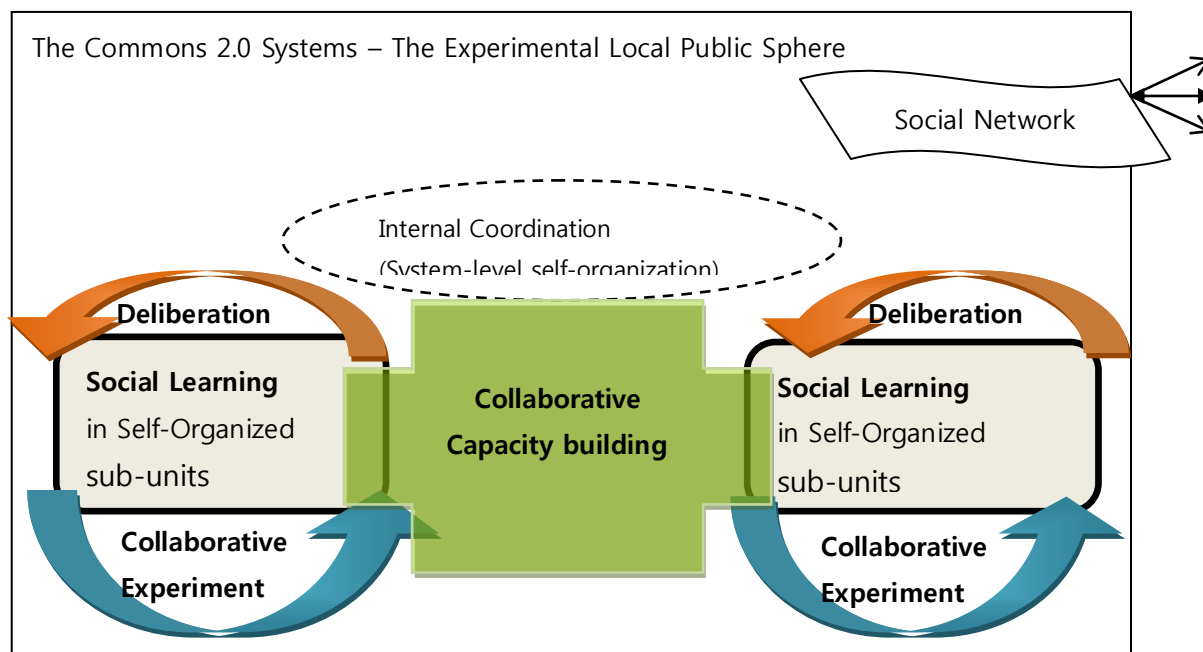
As substantial “interaction and communication” among individuals is the key to social learning (Röling and Wagemakers 1998, p 65), facilitating social learning involves identifying desirable forms of interaction and communication. As discussed earlier, if the collaborative framework is the integral component of social learning, what kind of specific forms of interactions are desirable in the collaborative framework? Two kinds of social interactions can be suggested: 1) deliberation and 2) experimental collective action based on theoretical explanations on the means of social learning and overcoming social dilemmas.

As collaboration is a mechanism to overcome social dilemmas creating social optimal requiring social learning process, collaborative capacity of the commons 2.0s necessitates continuous social learning. Considering that, “collective *action* and *reflection*” of different actors (Keen et al., 2005, p 4) enabling social learning shall be the desirable forms of social interactions in developing collaborative capacity of the commons 2.0s.

Furthermore, “the two ways out from social dilemmas” suggested by Ostrom: 1) communication and collective action; 2) innovation and collective action (1998, p 6), also suggest the deliberation and experiment as the desirable social interactions in collaborative capacity building as deliberation is a specific form of communication allowing reflection and collaborative experiments is a kind of collective action that enables innovation.

Building upon this analysis, Figure 1 graphically illustrates how social learning is facilitated through the localized deliberation and collaborative experiment in self-organized sub-units of the commons 2.0s. Since the sub units are networked to each other through internal coordination (self-organization at system level) the social learning experiences of each sub-unit can be shared as additional inputs within the entire commons system in some cases to other commons systems through social networks beyond the system boundaries.

Figure 1. Social Learning in the Commons 2.0 systems through Deliberation and Experiment



The Commons 2.0 Systems as the Local Public Sphere: Social Learning through Deliberation

Deliberative democracy aspires to make with the reciprocal reason of independent and equal citizens function as the determinants of socio-political system dynamics replacing the conventional determinants including interest aggregation, bargaining, and power struggle (Cohen and Sabel, 1997, 2003; Fung, 2003). The deliberative space can nurture the reciprocal or communicative reason through “communicative actions” resulting in social learning (Habermas, 1981; Habermas, 1991)

Regarding deliberation system, it is important to note that institutional features such as group size and deliberation type (i.e. private, collective, or public) significantly affect the behaviors of participants, the dynamics of deliberation, and social dynamics of the group (Mendelberg, 2002; Warran & Pearse, 2008). Hence, social learning induced by a deliberation system is also determined by institutional features of the deliberative space or the public sphere. Then, what are the institutional features of the commons 2.0s as the local public sphere and how the features affect on social learning within the system?

To begin with, having strong emphasis on equality (in terms of rights and responsibility in decision making), shared goal, and inclusive participation, the commons 2.0s satisfy the three characteristics of the public sphere which are disregard of status, domain of common concern, inclusivity (Habermas, 1991). These characteristics can be further improved by the evolving reciprocity and collaborative relationships through social interactions formulated by the collaborative

framework of the commons 2.0s.

Also, the collaborative framework of the commons 2.0s makes deliberation more effective as it encourages development of mutual commitment, trust, norms, and the sense of community which are the most critical processes in making communicative interactions efficacious (Ostrom, 1998, p 7). In collaborative systems like the commons 2.0s, members need to establish mutually acceptable norms, reasons, and rules through deliberation so that collective visions, strategies, and actions can be made (March and Olson, 1989; Margerum, 2011) for the common good. In addition, given the practical value and motivation for deliberation and better information literacy and accessibility of the public, the local deliberative space of the commons 2.0s enables frequent and better informed deliberation.

More importantly, the requirement for an extensive participation and deliberation of the commons 2.0s is imperative in developing collaborative capacity through social learning. This is because deliberation, along with information sharing, is the means to bringing out social learning (Newig et al., 2010). Unlike the older version of the public sphere like coffee houses and salons (Habermas, 1991) where deliberation was a high-end leisure activity of elites, the commons 2.0s require deliberation is an inclusive and participatory procedure indispensable to local institutional and capacity building through social learning for collaborative self governance.

The recurring deliberative process required in the local public sphere of the commons 2.0s builds relationships and institutional foundations or, as Krishna calls, the “relational and institutional capital” that compose social capital (1999, p 76) contributing to the positive feedback loop of social learning and collaborative capacity. This is because deliberation, an interactive process to give mutually justifying reasons for collectively binding decision making, facilitates the reflection of opinions, logic, and facts held by individuals (Guttmann & Thomson, 2004) allowing social learning among the individuals. The mutual reason giving, exploring and searching process of deliberation provides learning experiences for the engaged stakeholders as deliberative processes entail provision of the one’s opinions, reason, and views (Guttmann & Thomson, 2004) through proactive and inclusive social interactions. In this regard, for collaborative systems such as the commons systems, deliberation serves as the necessary kind of social interaction for social learning which in turn strengthens collaborative capacity of the social learning system.

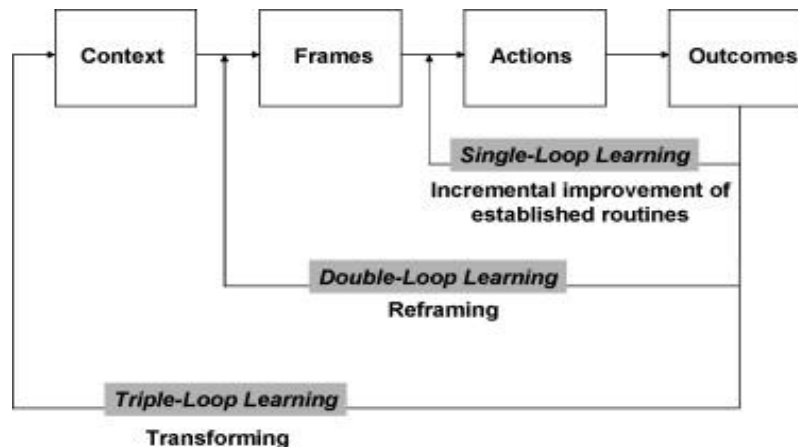
Commons 2.0s as Experimental local Public Sphere: Social Learning through Experiment

Collaborative decision making systems combined with flexible socio-political conditions can galvanize systematic social learning and adaptability of system units (Armitage, 2005; Folke et al. 2005). In this light, the commons 2.0s with more flexible properties compared to the commons 1.0, can facilitate social learning and adaptability of greater extent than their predecessors. Especially, the higher diversity (especially in terms of opinions and values) and information literacy of the commons 2.0 systems would encourage multiple experiments in various self-organized sub units networked with each other within a single system. In this case, decentralized

experimental arenas emerge to reap the benefit of diversity without having to fight to select single answer from several options. Such multiple decentralized experiments within the collaborative framework can result in more extensive depth and scope of social learning.

Regarding the depth and scope of social learning, there are three different kinds including single-loop, double-loop learning (Argyris and Schon, 1978), and triple-loop learning (Flood and Romm's 1996; King and Jiggins, 2002; Diduck, 2004; Keen et al., 2005). Single-loop learning enables incremental improvement by reflection of the relationship between certain outcomes and actions. Double loop learning refers to a learning process through which you are able to revisit and revise underlying assumptions in the sense of cause-effect relationships (Argyris and Schon, 1978), whereas triple loop learning enables you to "reconsider underlying values, beliefs, and world views, if assumptions within a world view do not hold anymore." (Pahl-Wostl, 2009).

Figure 2. Single-loop, Double-loop, and Triple-loop learning



(Hargrove, 2002)

Some scholars emphasize the value of experiment in learning. Kolb emphasized the necessity of "creating adequate conditions to link experiences, reflection, and experimentation" among individuals or groups (1984). Diduck et al. assert that what renders learning is an eagerness to experiment along with a risk daring tendency, political and institutional frameworks conducive to learning, alteration of worldview and synthesis of knowledge (2005). In addition, as was briefly mentioned earlier, the social learning of the commons 2.0s can be explained from the perspective of the "community of practice". By definition, community of practice is a joint social entity with communal resources developed by members who share the understanding of the community's purpose and member's mutual accountability to each other, and develop the community through mutual engagement (Wenger, 1998). As communities of practice provide a chance to develop competence through an experience of direct participation, they play the role of important social units of learning (Wenger, 2000). Applying the concept of communities of practice, the commons 2.0s offers the chance to enhance capacity by participation and experience in the form of decentralized collective experiments.

Furthermore, in the complex socio-political systems of the current era, “multiparty collaboration embedded in a specific context and leading to specific outcomes” enables social learning extensive enough to change system structures and dynamics (Pahl-Wostl et al., 2007, p 3). In this sense, decentralized collaborative experiment arenas of the commons 2.0s with different action strategies, frames, and context regarding a broad commons concern can facilitate social learning profound enough to revise preexisting frames and even transform the cognitive context by changing system structure and dynamics.

Transformation of system structure and dynamics resulted from triple-loop learning can be seen from the shift from cognitive context of social dilemma to that of social collaboration through the evolution of collaboration in which “individuals temporarily caught in a social-dilemma structure are likely to invest resources to innovate and change the structure itself in order to improve joint outcomes” (Ostrom, 1998, p 8). In such a condition, learning that enables transformation occurs through a “continuous trial-and-error process until a rule system is evolved that participants consider yields substantial net benefits” (Ostrom, 1998, p 8).

Hence, the role of continuous trial-and-error or collective experiments at local level is critical in enabling triple-loop learning for not only cognitive context but also in the actual context of the socio-ecological systems through the changes in systems structure and dynamics.

The Commons 2.0s as the Experimental local Public Sphere from the Complex Adaptive Systems (CAS) perspectives

The Complex Adaptive Systems (CAS) perspectives can be useful in discussing the relevance of the commons 2.0s as the experimental local public sphere because it represents the complexity and dynamics of commons systems as self-organized emergent systems.

A Complex Adaptive System (CAS) is a system with regularities or patterns that are complex and non-linear, resulting from individual agents continuously interacting and seeking to adapt within the system (Lancing, 2003). The most essential concepts concerning CASs are the concept of ‘self-organization’ and ‘emergence.’

‘Self-organization’, the key property of CASs, allows the systems to constantly evolve through self-organized interactions including communication, selection and adaptation process among agents of the system (Bushev, 1994; Comfort, 1996). This implicates that self-organization is the key mechanism for recurring evolution of the CASs. ‘Emergence’, another key concept of CASs, is the spontaneous emergence of order rendered by self-organizing property of CASs. Simply put, it is an emergent order made through self-organization (Waldrop, 1992). Another definition refers emergence as “the arising of novel and coherent structures, patterns and properties during the process of self-organization in complex system” (Goldstein, 1999). The emergent and self-organizing properties of the constantly

evolving CASs illustrate the emergent nature of qualitative novelty or evolutionary adaptation through self-organization beyond adaptive evolution by natural selection.

Due to such properties, a CAS theory is a pertinent conceptual tool for discussing the development or innovation in social systems which display Lamarckian characters rather than Darwinian characteristics (Giampietro, 2003). The evolutionary adaptation process of CASs through self-organized interactions echoes with the non-Darwinian evolutionary process of the development or innovation in social systems through self-organized social interactions. In social systems, social learning is a driving force of changes or evolution as the CASs perspective puts it (Keen et al., 2005; Pahl-Wostl et al., 2007; Reed et al., 2010). In this sense, the transformation from a social dilemma structure into a symbiotic collaboration structure and development of collaborative capacity are the outcome of the constant evolutionary self-adaptation driven by social learning through self-organized social interactions.

In this sense, the characteristics of CASs in evolutionary dynamics can serve as the guiding principles for the social learning process through self-organized social interactions such as deliberation and experiment in the experimental local public sphere of the commons 2.0s.

1. Openness
2. Experimental Behavior
3. Self-reference
4. Boundary Reparation and Resonance

(Rupasingha & Boadu, 1998, p537)

From the perspective of Complex Adaptive Systems (CAS), the learning process of local deliberation and experiment in the commons 2.0s can be seen as local optimization through constant evolutionary self- adaptation.

< Case Analysis: The case of the Mt. Seongmi Community in Seoul, Korea >

- Three Framework Variables of IAD framework-

1) Institutions or rules that govern the action situation

Institutions or rules that govern the action situation can be broadly categorized into macro and micro level. The macro institutional environment surrounding the Mt. Seongmi community was not so supportive and sometimes even hostile toward the community. Protecting the community's physical symbol - the Mt. Seongmi increased tension between the community and the city government and a private actor who owns some parts of the mountain. The conflict with a private actor and the city government in the community's early developmental phase was quite fierce involving physical confrontations as well.

Yet, the macro level environment became more favorable to the commons

system especially since 2011 by two major events. First significant event was the election of the current mayor, Won-soon Park in 2011 October who has been explicitly emphasizing the importance of communities and civil society for better governance and the second turning point was the legislation of the Cooperatives Act in 2012 December by the national assembly.

On 2012 March 15, the city government implemented the municipal ordinance for supporting local communities and on September of the same year announced its 5year master plan for supporting local communities for promoting self governance and democracy and opened the Local Community Support Center (Seoul City Government, 2012).The Local Community Support Center will provide training for community workers, consulting on community development plans and management, and financial support for local community activities from 1 million to 50 million won through screening (Hangyoreh, 2012 September 11).

Regarding the micro level institution or rule, since the emergence of the commons 2.0 system in 1994, the most important norms of this young commons 2.0 system have been inclusiveness and learning by doing attitude (Yu C-B – One of the core members of the community, personal communication, 2012 October 8th). Such norms developed the culture of deliberation and experiment which have served as the key driving forces in the community (Yu, 2010; Yoon, 2011).

2) The attributes of the physical environment within which the community acts

As can be assumed from the community's name, the urban community has a mountain which is the only natural forest left in the Mapo ward and one of few in Seoul (Pressian, 2010, 11 August) functioning as a cultural and natural resource. The natural forest of the 66 meter high Mt. Seongmi was awarded as the well-managed forest by the Korea Forest Service in 2009, and evaluated as the 1st rank biotope area by the Seoul city government (Pressian, 2010, 11 August; The Kyunghyang Sinmun, 2013, 24 February) although it is located in the middle of residential area of highly populated mega city. The reason can be found from the relationship between the forest and the residents living nearby developed through the evolution of the Mt. Seongmi community itself.

From 2000 to 2003, the community fiercely fought against the city government's unilateral Mt. Seongmi development plan (Yu, 2010; Yoon, 2011). The second phase of the saving Mt. Seongmi movement initiated from 2008 when the Hongik University which owns some parts of the forest announced its plan to build its private elementary, middle, and high schools until 2011 when the community lost the legal fight and the schools were built (The Kyunghyang Sinmun, 2013, 24 February).

As a commons 2.0 system, the community has a flexible or loosely defined geographical boundary covering the areas within a 1-meter radius from the Mt. Seongmi which mainly overlaps with administrative boundary of Seongsan-dong equivalent to a town. However, this geographical and administrative boundary somewhat serves as a rough system boundary not the absolute and rigid boundary. About half of member of the community think that the community includes some

parts of nearby by towns like Mangwon-dong, Hapjeong-dong, and Seogyo-dong (Shin, Kim and Lee, 2012, p 7). This reflects the trait of the commons 2.0 systems having a flexible system boundary determined by formal and informal groups.

3) The characteristics of the community or collective unit of interest

The community started with the establishment of the nation's very first cooperative childcare center in 1994 by 20 families and still the strong emphasis on childcare and education can be observed. Actually, the main cause or motive for initial relationship building of members is still childcare and education of their children based on a comprehensive survey involving 375 members of the community (Shin, Kim and Lee, 2012, p 7-8). Now, the consumer cooperative - the core community business organization has 5,500 households as its members and earns 5000 million won for its gross sale (Kim et al., 2012). Currently, 20 community businesses are running in the form of cooperatives employing 150 community members (Kim et al., 2012).

It is a relatively young community, since 54.8 percent of its adult members (20 years old or older than that) are in their 40s and 36.5 percent are in their 30s (Shin, Kim and Lee, 2012, p 16). Over 79 percent of households are nuclear family consisted of parents and children (p 16 -17). Currently, regarding monthly household income, over 25 percent of the residents gain between 3,000,000 to 4,000,000 won, 21 percent between 4,000,000 to 5,000,000 won, and 24 percent equal or more than 5,000,000 won in 2012 (p 17).

Considering that the average monthly income per household in the same year for the entire nation is 4,076,876 won (Korean Statistical Information Service <http://kosis.kr>), the community is not particularly wealthy. The fact that 54.6 percent of the community members are living in rented houses not owning their own (Shin, Kim and Lee, 2012, p 6) tells that they are not the haves who have the luxury to participate in the collaborative self-governing activities of the community. Yet, the majority of community member obtained bachelor's degree (68.6 %) or higher (21.6%) (Shin, Kim and Lee, 2012, p 17). Hence, the majority of them are young nuclear families of middle or upper middle class with relatively high educational background. Having said that, it has to be also considered that over the recent several years, many young, high-income, and well educated people moved in since the community became more known through the mass media.

In general, the Mt. Seongmi community, as the local public sphere, satisfies the four required conditions of deliberative system: 1) equal, 2) voluntary, 3) inclusive, 4) reasoned (Dryzek, 2000). The deliberation of the community is relatively equal especially in terms of right and responsibility in participatory decision making process. As everyone in a group is the owner and user of the group with more or so equal right and power in decision making. One unique measure used in the community to emphasize the equality of the members is the usage of nicknames instead of "proper" full names. By using nicknames they can relate with each other as the equal regardless of their social positions or age reducing formality in communication (Yu, 2010). Voluntary nature of the community is, in a way, given as it has a loosely

defined geographical boundary and flexible entrance and exit to the system in which participation cannot be imposed forcefully. Being a commons 2.0s, the community has witnessed numerous self-organized sub units which resemble test projects sustain, thrive, and fail as well.

Also, the deliberation system is relatively inclusive as it has flexible system boundaries and membership system. Even when some highly popular common resources such as childcare cooperatives cannot accommodate all demands from new members, people are encouraged and supported to create new commons resources in this commons system. For instance, some parents whose children are with special needs have continuously communicated with the community school and other parents, to make better learning environment for their children. Although the community school cannot satisfy the children with severe special needs due to mainly financial reasons, currently few children with minor special needs are attending the school enriching the diversity of place, and since 2008, the school started the mutual care project between handicapped and non-handicapped children (Kang, 2011, 11 November). Moreover, 7 households of handicapped graduates of the school along with school teachers, and other members, recently started a new cooperative to create job opportunities in collaboration with the school (Park, 2010, October 28). Through such self-organization supported by the collaborative framework of the system, the inclusiveness of the system is secured.

Since the community, as the deliberative system, aims to be equal and inclusive, the deliberation develops communicative or reciprocal rationality. The diverse participants in the deliberative process are asked to present and reexamine their opinions and reasons creating social learning experiences among engaged individuals in the deliberative space.

- Social Learning through Deliberation-

In its initial developmental stages, the core members who mainly participated in deliberation process both in formal and informal settings were mothers who were very eager to find more caring and holistic childcare service providers for their children. When few of them gathered and have a “chit chat” about their dissatisfaction of the current childcare facilities, they realized that they may be able to make such facility their own with some help of other similarly frustrated mothers (Yu, 2010; Yoon, 2011).

Yet, through the first saving Mt. Seogmi movement from 2000 to 2003, more diverse people began to participate in deliberation processes including residents not affiliated with the cooperative childcare center but also recognized the value of the only natural forest in Mapo ward (Yu, 2010). They self-organized the strategies to conserve the Mt. Seongmi through and frequently repeated deliberation (Oh My News, 2010, July 28).

After this period, people realized that they share one thing in common – Mt. Seongmi and started to identify themselves as members of the community overlooked by the mountain forest. Based on this change in perception of the action

situation, they started to expand the scope of their self-organization to community festival, after-school activities for children, and consumer cooperative (Yu, 2010; Seoul City Government, 2012).

And as a result, much wider range of the community started to participate in deliberation process as more diverse activities and groups emerged providing opportunities to greater number of people (Yu, 2010; Shin, Kim and Lee, 2012). At first, people struggled to deal with the diversity of members and opinions and deliberation processes lasted hours without much tangible outcome (Yoon, 2011; Shin, Kim and Lee, 2012). However, most members persistently carried out deliberation and informal communication or so called chit chats (Yu, 2010).

Through such constant effort to have dialogues in the collaborative framework, members learned the importance of listening and reasoning (considering both factual and social contexts) before presenting their opinions and (Yu C-H, personal interview, 2012, October 8th) which are in fact not so easy for most citizens than they seem. Also, they learned that casual conversations with a drink or tea actually significantly contribute to the entire deliberation process by increasing effectiveness of communication (Yu, 2010; Shin, Kim and Lee, 2012). In addition, some realized the self-initiative and strong commitment as a group comes from the energy and effort invested in the deliberation process which initially seemed highly unproductive (Shin, Kim and Lee, 2012).

- Social Learning through Experimental Collective Action

The community experienced improved quality and quantity of experimental collective actions as it strengthened collaborative relationship and deliberation capacity through repeated deliberation process. Every initiation of the new projects was in the form of decentralized collaborative experiment by few enthusiastic core members. After some trial period, people who became persuaded that the project has some positive potential and important value joined (Yu, 2010).

Later, however, as people increasingly recognized the value of small experiments in the system for the emergence of sustainable options or projects, the less enthusiastic members became more willing to collaborate with more enthusiastic members to try new things (Yoon, 2011). While some projects such as the community car service center failed, many others have successfully sustained and some remain to be experimented further such as (Yu, 2010). Yet, as long as the experiments are happening in a small scale coupled with careful deliberation, learning will be accumulated in the community.

Also, different kinds of social learning were made possible thanks to the greater diversity in activities through the emergence of various projects like a consumer cooperative (Dureh Sanghyup), an alternative school (Seogmisan School), a community theatre, and so on. As of 2012, it is estimated that around 40-50 formal and informal community groups exist (Seoul City Government, 2012).

For instance, through the participation in the establishment and operation of Dureh Sanghyup – the consumer cooperatives, community started to acknowledge the wider network within and outside the community (Seoul City Government, 2012). After an initial experiment with community business like Seongmisan school and community café, community discovered the possibility of local and sharing economy and now doing a new experiment with housing cooperatives (Seoul City Government, 2012; Shin, Kim and Lee, 2012).

The environmental awareness of the community member improved dramatically through the two save Mt. Seongmi campaigns leading to the initiation of an organic restaurant, car sharing project, and ecological education at Seongmisan school (Yu, 2010; Shin, Kim and Lee 2012). The campaigns also taught the necessity of exerting influence in local politics in a smart way and independent media leading to establishment of collaborative political network and local radio station for effective self-governance and communication with the general public (Yu, 2010; Yoon, 2011).

Enhanced collaborative capacity by social learning process through reflective and experimental social interactions in the collaborative framework of the commons 2.0s implies the potential contribution of the commons systems in the new governance. As the new governance emphasizes the role of collaborative self-governing systems, the self-governing commons 2.0s which enable continuous social learning through local level deliberation and experimental collective actions can function as the social learning systems with constantly evolving collaborative capacity.

Implications to deliberative democracy

For deliberative democracy, this may suggest a new perspective focusing on localized public sphere of the self-governing commons systems in which decentralized collaborative experiment further enhances social learning. Such social learning facilitated through social interactions is critical in deliberative democracy as it contributes to collaborative capacity and reciprocal and communicative reasoning. In this sense, the commons 2.0 systems can be utilized as the community level capability building system through localized deliberation and collective experiments for collaborative governance strengthening the prospect of deliberative democracy.

Moreover, the significant role of deliberation and experimental collective action in social learning proposes not only the necessity of fuller appreciation of the social learning aspect of deliberation but also the importance of the *local* and *empowered* setting of the public sphere in maximizing its social learning mode. This bears significance to deliberative democracy as the pertinence of deliberation depends on social learning of citizens in relation with shared issues (Forester, 1999) which affect the actual decisions made through deliberative decision making process (Kanra, 2009). Based on such implications, deliberative democracy may benefit from the shift from the public sphere to the experimental local public sphere which functions as the local deliberative and empowered space encouraging decentralized communicative and experimental actions.

<Conclusion>

The commons 2.0s, as the experimental local public sphere, contribute to the development of collaborative capacity by enhancing social learning through reflective and experimental collaborative engagements. Collaborative capacity strengthened by social learning is critical for the new governance in which collaborative self-governing units play important roles. For deliberative democracy, this may suggest a new perspective focusing on localized public sphere of the self-governing commons systems in which decentralized collaborative experiment further enhances social learning.

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