Community Currencies as Integrative Communication Media for Evolutionist Institutional Design

Makoto NISHIBE
Graduate School of Economics and Business Administration
Hokkaido University
nishibe@econ.hokudai.ac.jp

0. Introduction

The purpose of this article is to show that community currencies (CCs hereafter) prevailing worldwide since 1990s can be interpreted as integrative communication media, and that, since money is the most indispensable media of modern capitalistic market economy, CCs should be strategic targets for evolutionist institutional design in order to solve current social and economic problems caused by global capitalism. We will also show that the case for CCs exemplifies the possibility and feasibility of evolutionist institutional design in contrast with such other approaches as constructivist and operationalist institutional design.

Firstly, we explicate communication media and situate money and language as such, and then show that we can comprehend CCs as integrative communication media with dual aspects of money and language. Secondly, we introduce some such basic concepts of evolutionary economics as replicators and interactors and illustrate the model of Micro-Meso-Macro loop by using those concepts. Thirdly, we elucidate the significance and possibility of evolutionist institutional design as policy application of such theoretical ideas as we have seen, and finally investigate why and how CCs can be strategic platform media in evolutionist institutional design.

In this article I shall present the summary with synthesis and refinement of the original basic ideas and arguments that firstly appeared in a series of my Japanese articles (Nishibe, 2002, 2004, 2007, 2010).

1. Money and Language as communication media

In order to redefine the characteristics of CCs as integrative communication media in the next section, we, first of all, refer to Niklas Luhmann's ideas and classifications of 'communication media' (Luhmann, 1984, 1988).

Luhmann defines society as an autopoietic or self-reproducing system of communication and regards economy, politics, science, education and religion etc. as partial systems of society in which each of different symbolically generalized communication media functions independently. Here communication is conceived not as transferring information from a sender to a receiver but as emergent integrity of three selections of information, transmission and understanding.

We have to pay attention that the word 'media' has a wider connotation than it is conventionally used for mass media, means of transmission or mediators. Communication media are emergent entities in evolution that enable to transform uncertainty into certainty of communication and are classified into three types: 1) 'language' that enables communication for the meaning by using auditory and visual signs, 2) such 'extended media' as documents, printing and communication technologies that extend reach of communication by language, and 3) such 'symbolically generalized media' as money, truth, power, love and norms. Each of these communication media concerns uncertainty in terms of understanding, reach and attainment (acceptance), respectively. Symbolic generalization functions to mediate differences and bind separations, but diabolic generalization functions to create differences and separate each other. Normally, these two functions are tightly interwoven.

We further investigate the difference between money and language based on the Luhmann's ideas that we have just seen. Money and language are 'artificial media' that are the products of social and cultural evolution and are isomorphic in 'generalization' of differences in time, events and societies. The decisive difference between money and language is that, while money is 'uniform media' that condense qualitative diversity and complexity of commodities into one-dimensional information as prices, language is 'diverse media' that enables far richer expressions maintaining variety and complexity.

The form of payment by money involves much simpler structures than that of statement of by language. Money as measure of value can reduce complexity in a real world to one-dimensional value and the form of payment functions as symbolically generalized media so that it can encourage division of labor and knowledge as well as new discoveries and innovations, and facilitate the sales of a great amount and variety of merchandises in the market.

Money, at the same time, brings about diabolic generalization that expressing everything in uniform prices destroys characteristic properties and qualitative diversity in terms of cultures, values and norms peculiar to nations, local communities and groups of individuals. This problem has become more serious, as more individuals have become to use money as capital only for the purpose of value augmentation and accumulation, and not only practices of investment and speculation spread but also such ways of thinking as opportunity costs and human capital prevail in recent years. This means that the consciousness of people gradually approaches to that of capitalists. Women and mothers have become to regarded domestic labor and childcare as opportunity loss of wage earnings outside families more and more. People tend to think that not only various licenses but also higher education and learning are investment in human capital at present for gaining increase of future income. Such changes in value and consciousness accelerate to dissolve such communities as universities and families into the market. We will examine afterwards what solution CCs as integrative communication media can attempt to give to the aforementioned problems.

2. CCs as 'integrative communication media'

Let us now take a look at how we can describe CCs in view of such communication media as language and money as discussed above. First of all, we have to pay attention to the unique characteristics of CCs in this respect.

CCs certainly have both aspects of 'money' and 'language' just like the God in ancient Roman mythology, 'Janus,' that has two faces looking forward and backward. CCs actually are syntheses of these two factors, but tend to have stronger economic

connotations because of the attached word ‘money’ or ‘currency.’ In order to clarify that CCs stretch over not only economic domains but also social and cultural domains, we name them ‘integrative communication media’ since they are endowed both with the characters of ‘economic media’ as money and those of ‘social and cultural media’ as language.

Luhmann thinks of the whole society as an autopoietic system of communication and divides it into several subsystems according to such communication media as money, truth, power and others. We also regard CCs as belonging to the same category, but think that they are unique in the following senses. They possess the main purpose of vitalizing both local economy and local community, and express and convey the values, interests and ethics shared by members of community, different from conventional money that specializes in economic functions, so that CCs are not merely language and extended media but also such symbolic generalized communication media as love and norms. Accordingly, CCs are found to have all properties of three kinds of communication media. This is the reason why we have just put the adjective ‘integrative’ on the top of it.

Table 1 shows dual properties of CCs as integrative communication media. First, let us put our eyes on the economic aspect at the left-hand sides of the table.

The money side indicates its ability of one-dimensionally expressing and evaluating a diversity of heterogeneous goods and services by some magnitude on a single scale, say, ‘green dollar.’ Sellers, on the one hand, set prices of goods and services and wait for buyers to come, and buyers, on the other, observe the prices and decide to purchase them if the buyers want them and consider they are not dear. Such unit transactions of buying and selling constitute the market as networks of consecutive transactions mediated by money as the means of circulation.

CCs naturally involve such one-dimensional expressions and evaluations so long as goods and services are priced in terms of them. Then we can see that CCs as economic media create a different kind of market from that in capitalistic market economies. It is often thought that CCs create communities not markets, but it is not true. CCs have the

money side aiming at exchange with reciprocity, i.e. 'reciprocal exchange', and are supposed to form competitive and cooperative, that is, '*coopetitive*' local markets in consideration to another side of social and cultural media. In order to understand that markets can include altruistic and bounded-rational agents and cooperative relations among such agents, it is necessary to widen the conventional vision of the market depicted in neoclassical economics, which is composed of selfish and super-rational agents and perfectly competitive relations among such agents.

CCs as Integrative Communication Media		
Sides	Money (Economic media)	Language (Social and cultural media)
Purposes	Vitalization of local economy (autonomy, circulation, recycling)	Rehabilitation of community (dialogue, interchange, commitment)
Functions	Independent design, issuing and administration Bounded sphere circulation No interest or minus interest	Ferment of trust and reciprocity Cooperative 'prosumers' Linguistic expression and transmission
Forms	Complementary currencies and Emergency currencies (Stamp scrip, LETS)	Mutual-help coupons (Time Dollars, Eco-money)
Domains	Market	Community

(Table 1) Dual properties of CC as integrative communication media

Let us now turn our attention to 'social and cultural aspect' written on the right-hand side of Table 1. This can be also called 'linguistic side.' All human relations utilize languages and numbers complementarily. Money quantitatively expresses and evaluates everything in prices, so it is 'one-dimensional media' different from 'multi-dimensional media' that language represents. CCs express and convey a diversity of social values, norms and cultures peculiar to the issuing and administrative bodies and local communities in circulation.

CCs have the purposes, functions, forms and spheres according to these two sides. The purpose of CCs as economic media is 'to vitalize local economy.' It is said that one of the causes for depression and unemployment in local communities is the problem that money flow out of local communities and eventually run short to circulate in them. For example, Japan have experienced several sever depressions during more than 20 years since the collapse of bubble economies in 1990. Even though Japan as a whole suffered from economic depressions, there was a considerably big gap between large city areas and other regional areas in term of the rate of bankruptcy and the rate of unemployment depending on the interregional balance of payments and the industrial structure. As a whole, regional areas are in a much severer position than large city areas.

All towns and villages have the same problem of declining shopping street in addition to the problems of depopulation and aging population caused by falling birthrate and spillover of the youth to urban areas where they find more job opportunities. While motorization facilitated local people going for shopping in a supermarket or a shopping mall in larger towns, it, on the other side, gave rise to 'shopping refugees' of the elderly who do not drive cars and cannot go for shopping nearby. When local shopping streets disappear, so do such many invisible community functions that they serve as street cleaning, mutual aids, childcare and festivals. As a result, the decline of local economies accelerated and the living environments for all residents deteriorated as well. If the people under such circumstances can create their own local money that stay in the community so that they can make it circulate within their communities, it would be able to make local economies more active and relatively independent of the influence of national and global economies. It would encourage forming a sustainable and recycling local economies of 'local production for local consumption'. This is the ultimate aim of CCs introduced as 'economic media.'

Another purpose of CCs, on the other hand, is to 'activate community' or 'activate communication and intercourse.' This corresponds to 'social and cultural media' of CCs. In order to deeply investigate the aspect of CC as 'social and cultural media, ' we have to take a roundabout fully to understand about socio-economic coordinating principles

including Market and the meaning of globalization.

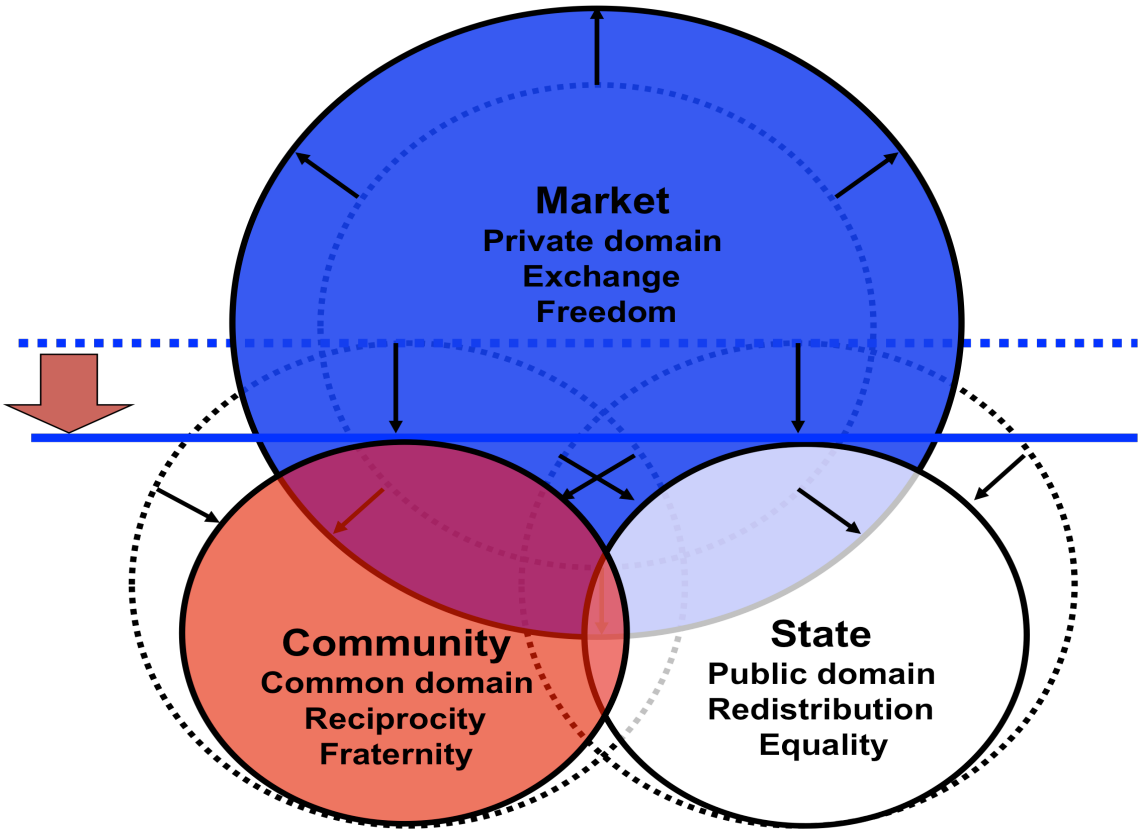
In modern capitalist market economies, every conceivable thing including internal organs, genital cells, genetic information, personal information and the right to emit carbon dioxide has been commodified and the market domain has increasingly expanded and deepened.

Here, in order to make clear the meaning of so-called 'globalization' since 1990s, we introduce three different coordinating principles of socio-economy, according to K. Polanyi (1944) and with some modifications: 1) Market (the private domain of exchange and freedom), 2) Community (the common domain of reciprocity and fraternity) and 3) State (the public domain of redistribution and equality). Let us confirm that such three economic principles as exchange, reciprocity and redistribution exactly correspond to such three political ideals of French Republic, which originated from French Revolution, as freedom (blue in color), fraternity (red in color) and equality (white in color).

Then, globalization can be interpreted as historical tendency over several decades for Market to expand, and for Community and State to shrink, qualitatively and quantitatively, as shown in Fig. 1. In other words, globalization is manifestation of the tendency of 'internalization' of Market as commodification. As Marx (1859, 1867) repetitively put it, Market emerges from between two communities, two states, or a community and a state. Once Market emerges from such boundaries, it expands and penetrates into communities and states, dissolve them, and reorganize them by Market principle. We call this tendency 'internalization' of Market.

The tendency is driven by capital that is the replicator (a bundle of rules) of capitalistic market economies, neither human agents nor profit organizations as firms. So, to be precise, Capital, the derivative of Market, dissolves Community and State and replaces them into Market by its gradual transformation of more kinds of non-tradable goods and services into 'fictitious' commodities. If globalization proceeds further up to the ultimate stage, not only money and such assets as stocks and real estate but also men, options, rights and information are all idealistically capitalized as profit-earning opportunities.

If the 'fiction' is realized without any restrictions or regulations in the market, the 'free investment' principle beyond 'free trade' is fulfilledsa as the highest level of evolution of capitalistic market economy. We claim that the tendency of globalization actually exists because it is observable that all human relations tend to be reduced to only such economic and contractual relations as buyer-seller and creditor-debtor relations so that communities supported by reciprocal exchange and mutual aids would decline and even collapse. The tendency of globalization has been and is counteracted by 'self-protection of society' (Polanyi, *ibid.*) as in communism and anti-globalization movements.



(Fig. 1) Globalization

In order to countervail it in daily life situations, CCs can be introduced to rehabilitate reciprocal communities and revitalize human communications. In Japan, the purposes of CCs as 'social and cultural media' had been emphasized as in Eco-money until the beginning of 21st century, but more attention has been paid to the purposes of CCs as 'economic media' since smooth circulation of Eco-money had been found difficult. We

must understand that the uniqueness of CCs lies in simultaneous and complementary coexistence of both aspects. Next, let us see the functions of CCs as monetary media.

a) Independent design, issue and management

Any groups can independently and voluntarily design, issue and manage CCs. If people create their own CCs and make transactions with them within a certain area, it means that they partially restore the right to issue money as civil liberties and social rights. This is the liberal and democratic property of CCs.

b) Circulation in a bounded sphere

If consumers go shopping in large supermarkets or convenience stores in local areas, the money paid flow out of the local community and concentrates in their head quarters. The local money for saving and investment funds transfer to the more profitable place, say, some metropolitan areas where land rapidly appreciates. Such spillover of money has negative impact on local economies especially in the period of depression. CCs are designed to circulate within a certain local area without flowing out of it so that it can activate transactions of inner goods and services and eliminate shortage of effective demand caused by hoard of money. This is the aspect of local production for local consumption.

c) No interest or minus interest

What does no interest on CCs mean? If you borrow money from a commercial bank, you have to repay it with given interest. But if you borrow it from your parents or friends, you pay no interest because it shows their trust and affection to you. If you dare to pay interest, it might destroy familiar relationships. Whether or not people lend money at interest indicates social distance between creditors and debtors. 'Minus interest' corresponds to the cost of holding money known as 'demurrage' and encourages to use money rather than to hold it to promote consumption. This idea was embodied in Stamp Scrips according to Silvio Gesell's design. This is the non-capitalistic aspect of CCs.

These three aspects are the functional characteristics in view of 'economic side' of CCs. When we focus on 'social and cultural side' of CCs, the view that CCs are the tools for overcoming hardships in severe depression and economic crisis are too narrow. Such

recent cases in Japan as Fureai Kippu (Touch Each Other Tickets) and Eco-money are the examples that attach greater importance to the linguistic side of CCs. Let us now consider such an aspect.

d) Trust and cooperation

CCs circulate based on trust and cooperation among participants. Participants interact each other through transactions, strengthen links of mutual aids and deepen trust among them. This is the community forming aspect of CCs.

e) Cooperative prosumers

A 'prosumer' is a compound word combining a producer and a consumer made by Alvin Toffler (1980) that characterizes the tendency of economic lives to become more self-help or DIY in the third wave, the modern information age. 'Cooperative prosumers' imply that the citizens who are simultaneously producers and consumers keep cooperative relationships to mutually help each other and thereby effectively utilize resources they own. This expresses the ideal of CCs that all participants should stand on the equal footing as much as possible by eliminating asymmetry between consumers as money owners and producers as money seekers.

f) Linguistic expression and transmission

Each local community has an intrinsic diversity of culture and nature that cannot be measured in one-dimensional quantity of money. CCs are introduced and used as social and cultural media to express and transmit such individuality of community and local district. There are many unique names of CCs to shortly express such identities as specialty, dialect, geography, tradition, mythology and ideal of communities and local districts. CCs thus function as linguistic media regarding local culture, interest and value.

CCs have always two sides of economic media and social and cultural media, and such duality of CCs is the most indispensible property as communication media that we cannot find in any other ones. So we cannot truly understand the significance of CCs by viewing them only from either side. However, CCs usually vary depending on which side is stronger or more contained in them. CCs further vary depending on a diversity of

purposes and localities. While CCs evolved as a new species from money and language, a diversity of subspecies of CCs emerged. The behaviors and motivations of participants and the performance and patterns of communities composed of participants interact and change each other as time goes on. Such endogenously dynamic changes are considered to be path-dependent and unrepeatable. Accordingly, we cannot ask which form of CC is the best or the most effective of all CCs because such a question is meaningless in the dynamical evolutionary process.

The aim of CCs is to control negative effects of money as capital (Luhmann's diabolic generalization) and restore stability and sustainability of socio-economy by intentionally restraining its universal validity with respect to circulating space-time, transaction objects and participants. If such incredibly weaker CCs compared with current national currencies can survive in evolutionary processes, they would gradually affect interests, value, norms, ethics and routines of participants.

Metaphorically speaking, therefore, CCs are similar to slow-acting Eastern medicine for improving physical condition as in acupuncture, rather than fast-acting Western medicine for such symptomatic treatment as in medication. In other words, CCs, by inserting microscopic exogenous material in the immune system or the nervous system of a human body, aim to give subtle changes to the phases between order and chaos on the region boundary of a system and, consequently, activate each cell in order to vitalize the body system as a whole. We will explain the point more analytically from the viewpoint of evolutionist institutional design in the next section.

3. Evolutionist Institutional Design

Evolutionist institutional design is an applied policy method in evolutional economics that is a different approach from conventional economics and focuses on evolution of social institutions. It tries to show an original and effective answer to the modern difficult problems that conventional approaches cannot find suitable solutions.

As Keynesian Macroeconomic control policy lost its effectiveness in 1970s and the socialist economic bloc in Eastern Europe and USSR collapsed in 1990s, overconfidence

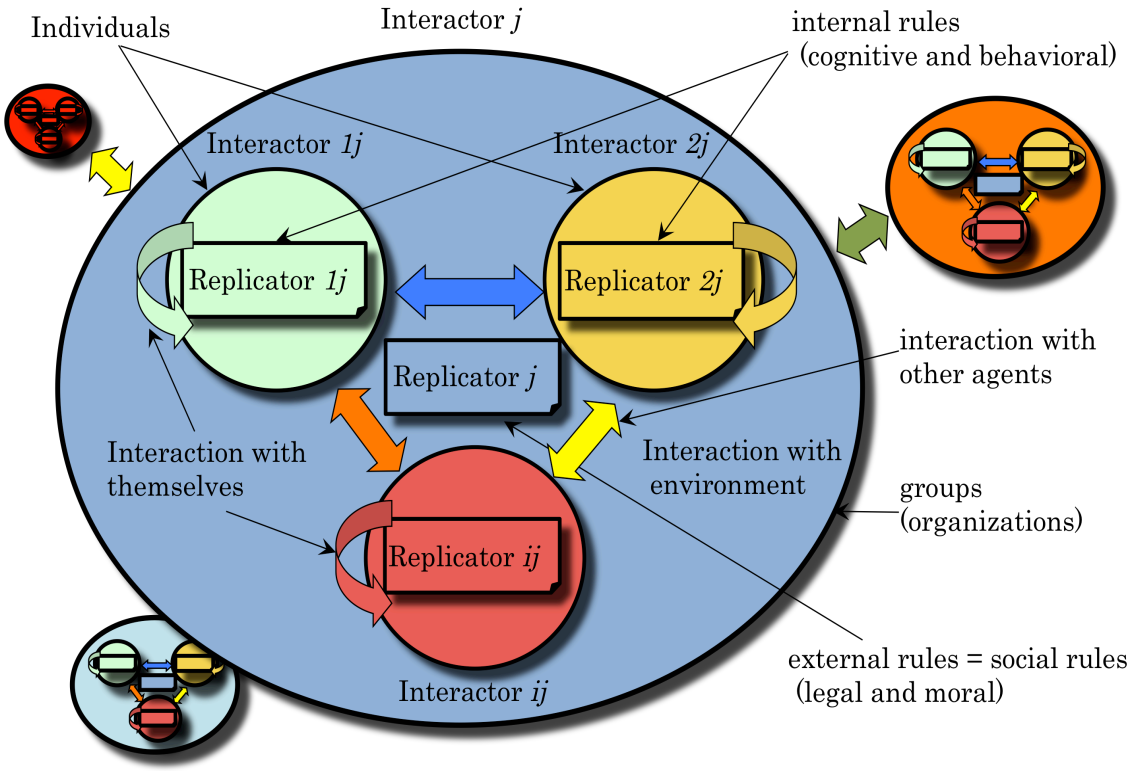
in human reason was defeated. Hayek's criticism of 'the fatal conceit' (Hayek, 1988) that targeted at constructivism and scientism had dominant influences since then. Too much emphasis had been put on fallibilism, boundedness of rationality and liberalism after Hayek, and, as a result of it, design had become to be only negatively told until the end of 20th century. Although the concept 'design' in itself might imply artificial planning and construction, it is fairly possible to introduce a new way of 'design' based on the natural, complex and non-deterministic properties of evolution. That is quite different from such constructivist institutional design as in socialist economic planning or such mechanism design as in market socialism or auction mechanism design, nor from such operationalist institutional design as in Keynesian 'fine tuning' adjustment of effective demand. We would like to present evolutionist institutional design as a new idea and way for policy-making practices.

Here let us introduce several basic concepts and ideas in evolutionary economics so that we can use those to clarify the aims and significances of evolutionist institutional design. What are similar and different between biological evolution and socio-economic evolution? Biological evolution in view of Neo-Darwinism is conceived as complex phenomena composed by the following three different mechanisms: 1) variance via mutation, 2) heredity, 3) natural selection. In case of socio-economic evolution, considering the peculiar ability of *Homo sapiens* to learn and communicate each other by using language and money, we need to give some important revisions to the aforementioned model of biological evolution even if we have similar three mechanism: 1) variance via natural and artificial mutation (innovation), 2) replication/ transmission of knowledge/ information, 3) natural and artificial selection (competition and cooperation). If we add 4) self-organization as another mechanism missing in Neo-Darwinism in order to explain how order spontaneously emerges, we now have four independent mechanisms in socioeconomic evolution.

Evolutionary economics has two basic concepts: replicators and interactors. On the one hand, replicators in socio-economic evolution that correspond to genes or DNA in biological evolution are institutions that consist of a bundle of rules in the form of 'if ~ then…' shared by a relatively large number of agents. Such institutions constituted as rules are classified from the viewpoint of agents into internal (strategies of game,

frames of cognition, psychological biases and routines of behaviors) and external (rules of game, laws, conventions, norms and morals). On the other hand, interactors as causal agents that correspond to organism and groups or populations in biological evolution are individuals or groups of individuals who execute rules (act according to both internal and external rules) and interact with themselves and others as well as outer environments. Then we can visualize our socio-economy as coexistence with a diversity of rules or institutions that form mutually complementary and substitutive relations. We call such a dynamic system the 'institutional ecology.'

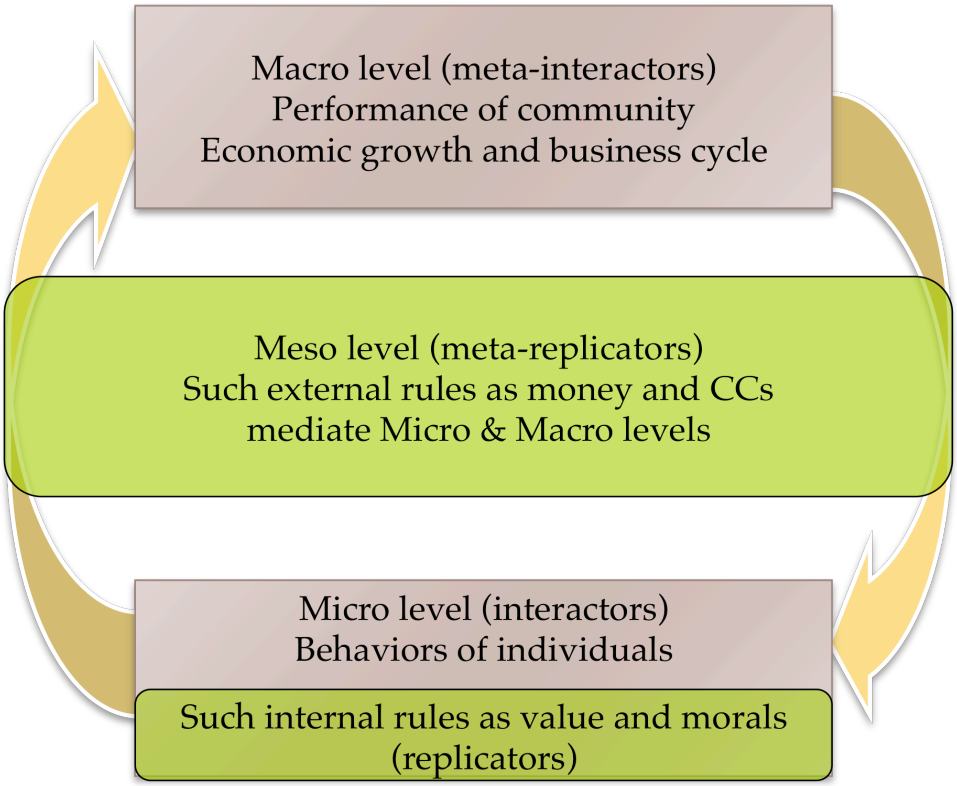
In most cases, replicators and interactors form multilayered nested structures. While individuals are agents with their own replicators as internal institutions (rules), such groups of individuals as organizations (firms), communities and states are also agents with their own replicators that are preferentially imposed as external institutions (rules) on individual members as long as they belong to those groups. If some individual members cannot fully accept all the rules of the belonging group, in other words, any of the internal rules of the individual members conflict the external rules of the belonging group, they must quit or be kicked out of the group.



(Fig 2) Multilayered nested structures composed by replicators and interactors

Fig. 2 depicts an example of multilayered nested structure. Three individuals (interactors *1j*, *2j* and *ij* symbolized by three small circles) with their own replicators as internal rules for cognition and behavior (replicators *1j*, *2j* and *ij* symbolized by three small rectangles in small circles, respectively) belong to an organization (interactor j symbolized by a big circle) with its own replicators (replicator *j* symbolized by a rectangle at the center of a big circle) as external rules for laws, norms and morals.

We now present another model with three levels of 'Micro-Meso-Macro loop' to describe dynamic characters of an evolutionary system as in Fig. 3. Such symbolically generalized communication media as language, law and money can be regarded as platform institutions (basic replicators) located on the Meso level in Fig. 3 because they determine the fundamental frames of cognition and rules of action of agents that should be incalcated as internal rules within agents on the Micro level so that agents can behave based on the such frames and rules. In short, platform institutions on the Meso level basically regulate how agents on the Micro level interact one another.



(Fig. 3) Micro-Meso-Macro Loop

4. CCs as strategic platform media in evolutionist institutional design

CCs are integrative communication media located on the Meso level as well and mediate both directional causal relations between socio-economic performances and patterns on the Macro level and behaviors of agents based on such internal rules as value and morals on the Micro level.

Thus if we set new rules or revise some rules of CCs as platform institutions on the Meso level, such a change would affect socio-economic performances and patterns on the Macro level because agents change their behaviors in a response to the change of external rules even though agents keep such internal rules as frame of cognition, motives and routines unchanged. Even though agents follow the same internal rules written as 'if ~ then…' rules, if any input conditions in the subordinate clause (if~) including any change in external rules, they might change their behaviors as output in the main clause (then…) according to the change in the subordinate clause. But if such internal rules change as value, motives and routines on the micro level caused by the change of external rules on the Meso level, then it means that agents eventually change their 'ways of behaviors', not behaviors as output in the same internal rules.

For example, let us assume that you always behave as a utilitarian according to the rule of maximization of your utility, and if the criminal laws are amended to allow you to steal anything from others without penalty, you are supposed to start to steal things to maximize your utility, rather than to pay money to buy things. But if you had a chance to refrain from stealing things from others in view of the moral standard that stealing is not right because it hurts others, you would eventually give priority to the moral standard not the utilitarian rule and you would not behave according to the rule of maximization of your utility. This means that you would not change your behavior itself, but change your internal rules, i.e., your ways to behave, even though you would behave the same as before since you don't steal anything both before and after the amendment of the law.

After all, the change of external rules on the Meso level can affect not only performance on the Macro level but also internal rules on the Micro level. Both constructivist and

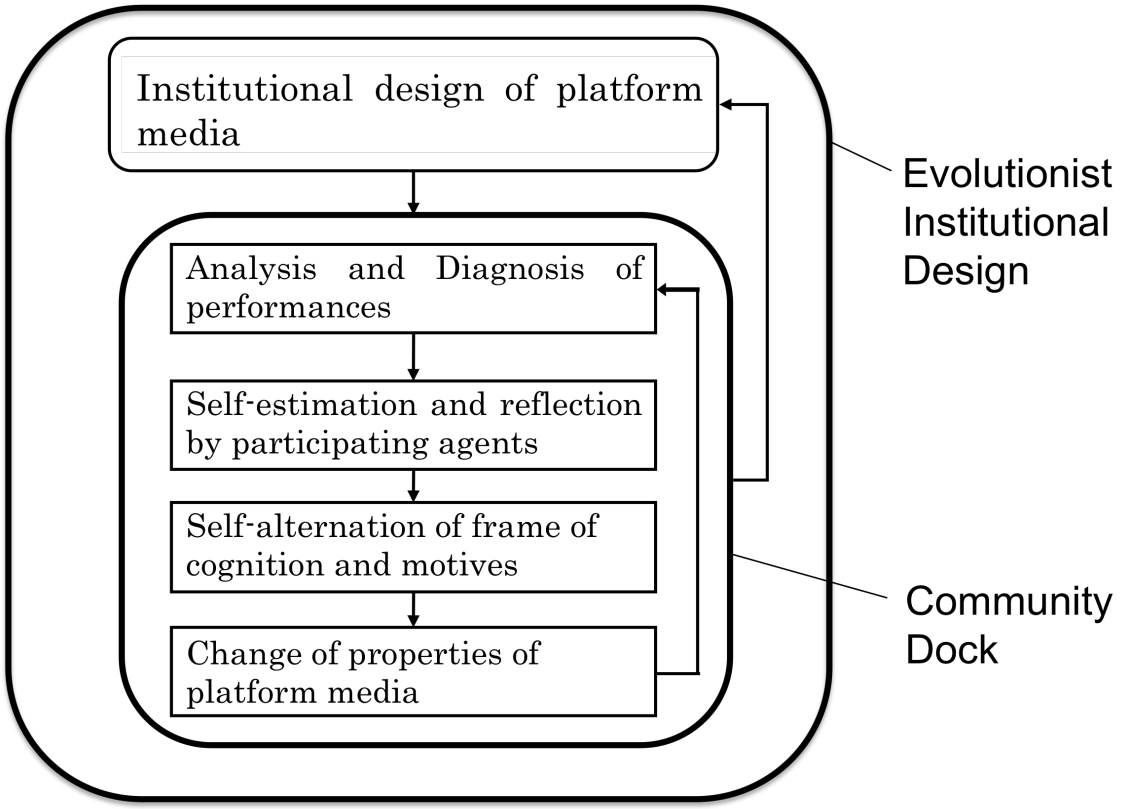
operationalist approaches of conventional institutional design presume that such internal rules on the Micro level are all fixed as constant because such internal rules are given by such optimality principle as maximization of utility and profits. Constructivist approach, on the one hand, aims at constructing systems or structures on the Macro level based on such utilitarian behavioral principle imposed on agents on the Micro level. Operationalist approach, on the other hand, aims at discretionally controlling fluctuation and instability of the mechanism on the Macro level.

However, different from those, evolutionist approach thinks of internal rules on the micro level as variable, and tries to consider the effects on both performances and patterns overall on the Macro level and internal rules on the Micro level simultaneously caused by the policymaking alternation of such external rules embodied in platform institutions as money and accounting on the Meso level.

Conventional national currencies are the platform institutions that determine the grand design (basic replicators) for capitalistic market socio-economy to evolve. In contrast with this, CCs can be thought of as different kinds of platform institutions with different basic replicators that can gradually change both external and internal institutions of agents and potentially can evolve from capitalistic market socio-economy to non-capitalistic market-economy. Even though replicators built in CCs have high potentials to transform capitalistic market economies into non-capitalistic ones, the real problem is that they only have weak power for survival and prevalence. So it would be desirable from the strategic viewpoint to consider the aforementioned dynamic character of the Micro-Meso-Macro level of the system with CCs as platform media and put such basic ideas of evolutionist institutional design into more specific and realistic model that can be introduced to actual administrations of CCs.

Fig. 3 shows the nested structure of institutional design with community dock. Community dock, analogous to 'human dock' in Japanese that is periodic complete medical checkup, signifies periodic complete checkup of both such subjective data as results of questionnaires, interviews and discussions and such objective data as statistics of transactions, turnover of money, and properties of network among participants, etc. It is designed as part of evolutionist institutional design for

embodying a strategic and systemic method of self-estimation of socio-economic situations of the community and self-alternation of such internal rules as frames of cognition, motives, values and norms for participating agents of CCs.



(Fig. 4) The nested structure of institutional design with community dock

Community dock is composed of the following four phases: 1) analysis and diagnosis of current performance of socio-economies of the community, 2) self-estimation and reflection on the performance of the community and their own internal rules by participating agents of CCs, 3) Self-alternation of their frames of cognitions, motives, values and norms by participating agents of CCs, 4) Change of properties of CCs as platform media.

The loop of community dock is subsumed by media design of CCs on Fig.4. This indicates that, after sufficient numbers of repetitions of community dock, external rules of CCs as platform media can be redesigned in order to adapt the altered internal rules of participants and more effectively attain the initial goals. Media design of CCs is thus

situated on the upper level of community dock in the whole picture of evolutionist institutional design.

Whether or not CCs as platform media can produce successful outcomes really depend on the overall distribution of the internal rules that participating agents have at the moment. It is thus significant to pay attention to the dynamic process created through implementing community dock.

The framework of evolutionary institutional design is thus established so that we can understand the theoretical aspects of CCs more deeply from the more realistic viewpoint of evolutionary economics and can present more suitable method of self-management of CCs for their practitioners.

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