

The "Hold-up" Problem with Political Entrepreneurship for Collective Action: An Incomplete-Contract Approach to Collective Goods

Yoshifumi Ueda

Abstract

The organizing work is a prerequisite for any collective action, but it must be undertaken with a fear of being "held-up" due to its relation-specific and non-verifiable nature. If compensation for that work is not assured, the incentive for that work is lost. By examining a three-stage game model to illustrate the whole process of providing a collective good, I derive the results (i) that the possibility of collective action depends on whether or not political entrepreneurs can solve the "hold-up" problem with leadership for collective action, and (ii) that a group optimality can be attained under the leadership of a financially-independent type of political entrepreneur under the condition of costless re-negotiation.

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1. Introduction

Various costly works prior to production processes are an indispensable prerequisite for the provision of any collective good. Creating innovative ideas, making strategies or plans, persuasion or negotiation, and setting up new teams or organizations, etc. are some of those examples. In this paper I call those works required at pre-production stages *organizing work* in a lump, and on the other hand, others required at the production stage *managing work*, for convenience. Then, someone has to take on that organizing work at the pre-production stage. But if taken, he or she incurs non-negligible cost, which is often prohibitively high for a self-interested individual. Who on earth can undertake that work?

In order to emphasize the innovative and risk-taking nature of the organizing work in business arena, an economic agent who dares to take on it as well as the managing work has been called *business entrepreneur* in economics literature. By analogy, a self-interested agent who dares to undertake it in collective action arena has been called *political entrepreneur*, and his or her leadership for collective action has been emphasized as a key to solve the collective action problem¹. According to this logic, the political leadership is a requirement, and collective goods can be provided by the leadership of a political entrepreneur.

However, any self-interested agent is not willing to do any costly work without some prospect of compensation for or reward to it. Then, can we always assume that the political entrepreneur is well motivated to undertake the

organizing work as well as the managing work? This question should be worth calling more attention to, when we take into consideration the fact that the organizing work is usually of a relation-specific and non-verifiable nature, leading to the "hold-up" problem. The possibility of being "held-up" discourages political entrepreneurs to take on the organizing work in spite of its indispensability for providing any collective good. Even if free-riding incentive to deviate from cooperative burden-sharing in the direct cost can be overcome at a sufficiently low monitoring and punishment cost, the problem of who should take on the organizing work remains to be solved. It is of a public good nature, and all types of collective goods are involved in it in common.

Whilst the work of management is rarely missed in any economic analysis, the organizing work has not been explicitly examined, in particular, in the analysis of collective goods. In this paper I investigate the possibility of collective action from the motivational perspective of a self-interested political entrepreneur, who has to take the initiative for collective action not only at the direct production but also at organizing stage of the whole process of providing a collective good.

For this purpose, in this paper I come up with a three-stage game model in which the whole process of providing a collective good, consisted of the organizing, renegotiation, and production stage, is viewed as business activity of a political entrepreneur (hereafter, referred as he). According to his rational and selfish calculation, he can dare to launch onto that business, (i) when he can have the prospect of sufficiently high effective demand for his work, and (ii) when the payment for his work is assured at sufficiently low transaction cost. The first condition above mentioned means that if the initiative is taken by a political entrepreneur, each group member (hereafter, referred as she) is ready to share the cost burden to the collective good. On the other hand, the latter condition means that the cost of solving incomplete contract problems is sufficiently low.

It should be noted here that renegotiation plays a crucial role in solving the incomplete problem with the organizing work. To make this point, suppose a political entrepreneur has just mobilized a sufficient size of group members at the organizing stage. If his managing work is crucially required to provide the collective good at the production stage, he is in a position favorable to renegotiating on the compensation for his organizing work just before proceeding to that production stage. On the contrary, if not, he may expect that his relation-specific and non-verifiable organizing work is not sufficiently compensated, because he himself or his task itself at the production stage can be taken over.

Accordingly, the possibility of renegotiation depends on whether or not a political entrepreneur is indispensable not only at the organizing stage but also at the production stage. By recourse to that concept, we can explain why the organizing work can be carried out in some cases, but not in others. It can explain, on one hand, why citizens' collective actions are not so easily organized even for small groups in the case that some incumbent politicians or government organs can take over those organizer's tasks at the production stage. On the other hand, it explains why the organizing work to establish new constitutions or governments can be taken up in spite of large groups being required to be organized, in the case that political entrepreneurs are indispensable successively at the production stage.

According to the analysis of Che and Hausch (1999), incomplete contractsⁱⁱ dealing with "cooperative"

investments cannot solve inefficiency problems, provided that the possibility of renegotiation cannot be ruled out. This paper, on the contrary, shows the possibility of renegotiation is a necessary condition to attain a group optimality.

At the renegotiation stage of the three-stage game mentioned above, default payoffs must be calculated as the reference point of bargaining. Here, it is noted that the default payoffs of the organizer and the organized are influenced by the underlying network structure of each group.ⁱⁱⁱ Some groups such as business clubs have economic incentives to be connected directly or indirectly with each other without strong external initiatives, but other groups such as consumers or citizens need an external initiative in order for them to be connected. The political entrepreneur who tries to organize the former type of group can more easily escape from the burden of non-human assets such as offices, cars, and members' list, required for carrying out his tasks. This is because the organizer for that type of groups can be parachuted down to a connected group as a result of his being chosen, and because the group's non-human assets can be shared in use with him for the purpose of collective action. Many of the bureaucrat-turned politicians belong to this type of political entrepreneur. On the other hand, the political entrepreneur who tries to organize the latter type of group with weak incentives to be voluntarily connected has to provide those non-human assets on his own. Only so-called junior politicians can escape from this burden by inheriting those non-human assets from their predecessors. That is why many of incumbent politicians are junior politicians. Obviously, the default payoff is considered to be higher for the type of political entrepreneur organizing the latter type of the groups in the above, in the sense that he can have a wider range of options in his selecting political supporters.

I describe the influence of the above non-human assets on the default payoffs by recourse to the analytical framework of an incomplete contract approach, put forth and / or refined by Grossman and Hart (1986), Hart and Moore (1990), Hart (1995). According to their logic and classification, those non-human assets required to undertake political enterprises belong to the political entrepreneur's or organized members' side. In this paper, the political entrepreneur of the former type is called a financially independent type, and that of the latter a financially dependent type. The former type is given stronger incentives to spend his energy on the organizing work than the latter type, because his default payoff and therefore his total payoff become higher.

From the examination of the three-stage game, I derive the following main conclusions and implications; (i) that the possibility of collective action depends on whether or not the political entrepreneur can be well motivated to take on his work, but not necessarily on group size itself, (ii) that a group optimality can be attained under the leadership of a financially-independent type of political entrepreneur, and (iii) that in order to achieve common interests, a business-oriented type of social organizer may be recommended to take the leadership for it.

As the last note, it should be emphasized that the three-stage game model of this paper is a simplified image of the organizer's tasks and payoff calculation, which are conjectured by him in making decision on whether or not to take on the leadership for collective action. The main focus of this paper is on the relation between the organizing work and incentives for it. For this reason this paper does not deal with many distortions at the stage of producing collective goods, except for coalition effect. It remains to combine the analysis of the organizing

process with that of the distortion problem.

This paper is organized as follows: In the next section, the logic of collective action argued by Olson (1965) is reconsidered from the perspective of this paper. In the third section the basic model of this paper is illustrated. In the fourth section I examine the possibility of collective action, based on our model. The last section gives some main conclusions and implications.

2. The Logic of Collective Action Reconsidered

Taking into consideration the prerequisite nature of the organizing work for any collective action, the problem of collective action can be restated as follows: although all members of a latent group are ready to share the burden of the direct cost of a collective good^{IV}, it is not provided on its efficient level, because the political entrepreneur does not take the initiative for organizing the group members into collective action owing to the lack of economic incentives for it. In other words, the collective good can be provided, if each group member has so sufficiently a high effective demand for the collective good as to be ready to share its direct and indirect cost burden, and if the political entrepreneur is assured of the compensation for or reward to his organizing as well as managing work.

In order to illustrate this logic, we can appeal to the concept of participation constraint, incentive compatibility, and transaction cost, as follows: the payoff of each group member, obtainable from the benefit of a collective good minus her cost burden, exceeds her status quo payoff. On the other hand, her talents are not suitable for political entrepreneurship. That is, the payoff of an organized member is larger than that obtained when she takes on the role of the political entrepreneur. So, she is satisfied with the status of an organized member, and ready to share the cost burden of the collective good.

On the other hand, the political entrepreneur is not so sufficiently satisfied with the net benefit of the collective good itself as to exceed his status quo payoff. If he can be satisfied enough, he is actually a "privileged member" of the group, a contradiction with the assumption of latent group. In order to motivate him to take on the political entrepreneurship, accordingly, he must be able to have the prospect that sufficiently large compensation for or reward to his work is paid at sufficiently low transaction cost.^V Furthermore, his payoff must be larger than the payoff obtained when he submits to the status of an organized member. If those participation constraints and incentive compatibilities are satisfied, the collective good can be provided on a sufficient level.

The circumstances under which the "by-product theory" of Olson (1965) holds good correspond with that where the above conditions are met, if the collective good in the above is replaced with the "selective incentives." This replacement has merely the effect of reducing the transaction cost. He noted the requisite nature of the "cost of organization" (Olson, 1965; p.47), but did not pick out explicitly any organizing agent in person who takes on that cost of taking the initiative for organizing other group members into collective action. However, the "selective incentives" can be brought about only when the political entrepreneur dares to undertake the organizing and managing work, under the condition that there is a sufficiently high effective demand for them. Though the "by-product" theory of collective action has been criticized for the reason of its falling into a circulation argument, it could avoid such a criticism when it explicitly put the political entrepreneur into its analytical framework.

It is sure that when a latent group has been organized on a sufficient scale thanks to his organizing work somehow, the political entrepreneur can avoid the organizing cost of providing collective goods for this same group. Then, it becomes easier for him to provide those collective goods, because he can avoid the organizing work required for those collective goods. This is the circumstance where Olson (1965) insisted that collective goods for latent groups could be provided only when the "selective incentives" can be sustained.

Of course, it is unrealistic to assume that the above conditions can be always met. First of all, the participation constraint of each group member may not be satisfied, because of her low effective demand for the collective good, relative to her cost burden. Secondly, the participation constraint of the political entrepreneur may not be satisfied owing to the relation-specific and non-verifiable nature of the organizing work, and to the pessimistic prospect of renegotiation.

The organizing work is usually very costly and of a relation-specific nature, but must be done "now" without complete contract for that work. On the other hand, it is only "later" that it can be compensated or rewarded. Nonetheless it is not verifiable just when he makes a claim for the reward to or compensation for it. Thus, he is faced with the "hold-up" problem, if he and his tasks can be taken over at the following stage. If at the beginning of the game he anticipates this problem is sure to arise "later," the organizing work is not taken "now." This is the same situation as where in spite of the "perfect consensus" about the provision of a collective good, political entrepreneur cannot dare to launch onto the organizing work because of no assurance of the compensation for it. This leads to collective failure not because of free-riding but because of no assurance of the payment for the political entrepreneurship.

According to the above arguments, we have to classify the collective goods which each member of a latent group has "perfect consensus" about her cost burden of or sufficiently high effective demand for, into two types; (i) those that can overcome the incomplete contract problem at sufficiently low transaction cost, and (ii) those that cannot. It is in the former case that active politicians and political lobbyists have been ubiquitously observed, and in the latter that we have been suffering from the collective action problem. The "non-excludability" characteristic of the public goods is another expression of a prohibitively high transaction cost to overcome the incomplete contract problem. We must be able to explain both cases consistently on the behavior assumption of a self-interested political entrepreneur.

3. Basic Model and Assumptions

The Time Line

In order to take into account the prerequisite nature of the organizing work and the renegotiation possibility, in this section I come up with a game model where the whole process of providing a collective good is separated into three stages; the first (organizing), second (renegotiation), and third (production) stage. Only when at the first stage group members beyond a threshold are organized by political entrepreneur, and when at the third stage the managing work can be done somehow, the collective good is provided in the end. Though the political entrepreneur has to launch onto the organizing work without any complete contract to ensure himself a

compensation for his organizing work, he has an opportunity to renegotiate with the organized members at the second stage, provided that his own management work is required at the third stage. That is because each player involved with the first stage has his or her sunk cost at the end of that stage, and so going ahead is better. The time line is illustrated below. Throughout this paper, future outcomes are not discounted for simplicity.

. 1 st Stage	. 2 nd Stage	. 3 rd Stage
Organizing work	Renegotiation	Managing Work

The Players and Collective Good

We suppose a latent group comprised of n symmetric members and one political entrepreneur, and there are only two types of goods, a private good and a collective good. It is assumed that the collective good can be provided only when some political process can be successfully gotten through at the first stage. For the successful political process, though, at least $C(n)$ size of the members must be organized into cooperative actions.

Furthermore, it is assumed that the collective good has coalition effect. That is, the collective good is not only positively related with the direct input in a mechanical sense as usual, but also is additionally augmented quantitatively or qualitatively by bargaining power strengthened by the size effect of the organized members. This assumption is suitable to coping with such collective goods as government subsidies. We assume the coalition effect is separated from the mechanical effect.

We denote by $\phi_Q(Q)$ the output of the collective good brought about by the mechanical effect of direct input volume, Q , and by $\phi_C(C)$ the output of the coalition effect of actually organized members' size, C . Both functions are assumed to be an increasing and concave function, as usual. Without loss of generality, it is assumed $\phi_Q(0) = 0$, and $\phi_C(C(n)) = 0$. Then, the total output of the collective good, denoted by $\phi(Q, C)$, is shown by(1).

$$\begin{aligned} \phi(Q, C) &= \phi_Q(Q) + \phi_C(C), \quad \text{only when } C \geq C(n), \\ &= 0 \quad \text{otherwise.} \end{aligned} \tag{1}$$

The collective good is produced at the third stage by the managing work of the political entrepreneur or someone who can take over him, on the condition that at least the $C(n)$ size of the members are organized at the first stage, and furthermore that at the second stage negotiations on compensation for the organizing work have been made. Note that the possibility of the negotiations is another expression of the prospect of the organizer being required successively at the production stage. It is assumed that if the political entrepreneur accepts the managing work, he has to spend one unit of his time and energy on that work at the production stage. It is, further, assumed that the free-riding incentive of each organized member to deviate from her contribution to the direct cost at the third stage can be overcome by the managing work.

The political entrepreneur knows better about how to provide the collective good, and to be better endowed with basic talents required for political entrepreneurship than other group members. The member who takes over

his managing work can do it but less efficiently and inflicts additional direct cost on the organised members. It is assumed for simplicity that any other group member than the political entrepreneur cannot organize $C(n)$ size of members subject to her income constraint, because of the lack of her talents for the organizing work.

The Organizing Stage and Payoff functions

At the organizing stage the political entrepreneur is assumed to persuade each member one by one into cooperative action. He has to spend his time and energy, one unit of it per each member, on organizing her into cooperative action. The total volume of his energy expenditure at the organizing stage is denoted by z . At each moment of his organizing activity one member (called i hereafter^{vi}), the political entrepreneur makes a proposal, called initial simple contract,^{vii} to each member, which stipulates the threshold level of the input of the collective good, Q_0 and the equal burden-sharing in its direct cost, $q_0 = Q_0 / C(n)$. Q_0 and q_0 are set at the level where the participation constraint of each member is just satisfied. (Those precise definitions are given later after some relevant concepts are defined).

On the other hand, each member, when presented the proposal, has to decide on whether or not to go along with the proposed plan. This is a binary choice between "Accept" and "Reject." The choice of the former is denoted by 1 and the latter by 0, respectively. Define a variable taking 1 or 0 as v . If she sets v at 1 ("Accept"), she has to spend her time and energy, C_i , on learning the proposal and negotiating more with the political entrepreneur, and otherwise incurred no cost. For simplicity, C_i is assumed to be constant.

Assuming a quasi-linear utility function, the net payoff of the member i , U_i , which is realized at the final stage, is given by(2).

$$U_i = U_i (y_i, Q, C) = y_i + \theta_i (\phi_Q(Q) + \phi_C(C)), \text{ for } i \in [0, n], \quad (2)$$

wherein y_i is her consumption of the private good, and θ_i , $\theta_i \geq 0$, is her valuation on the collective good. When the member i actually contributes q_i to the total input at the final stage, her income constraint is shown by(3).

$$I_i = y_i + C_i v + pq_i, \text{ for } i \in [0, n], \quad (3)$$

where I_i is her income, and p is the price of the direct input in terms of the private good.

Using (2) and (3), Q_0 and q_0 are determined by the following equation.

$$U_i (I_i - C_i - pq_0, Q_0, C(n)) = U_i (I_i, 0, 0), \text{ for } i \in [0, C(n)] \quad (4)^{\text{viii}}$$

So, precisely speaking, $Q_0 = Q_0(C(n))$, and its first derivative is proved to be positive. We can recognize (4) as the participation constraint of each member or as the "perfect consensus" assumption, because when actually organized size, C , exceeds $C(n)$, the actual equal burden share, Q_0/C , given Q_0 , is lower, and because when the optimal level of Q is brought about on the basis of the realized C , then the payoff can be increased even if we omit the coalition effect. It means each group member is prepared to accept the initial simple contract.

Here, we assume C is an increasing function of the organizing work, z . It is given by (5), wherein $f' > 0$ and $f'' < 0$ as usual.

$$C = f(z) \quad (5)$$

On the other hand, when the political entrepreneur launches onto the organizing work, he does not know whether or not he can organize the group members beyond $C(n)$ subject to the constraint of his income or initial endowment, I_E . So, he has to stop the organizing work on the way, if the total cost of his organizing work has reached his income constraint. If, on the contrary, he could organize the group members beyond $C(n)$ within the limit of his income or endowment, the game goes ahead to the next stage.

The income constraint of the political entrepreneur is given by (6).

where y_E is his consumption of the private good, and c_z and c_x are the cost of the organizing and of the managing

$$I_E = y_E + c_z z + c_x x, \quad (6)$$

work in terms of the private good, respectively.

The political entrepreneur also gains his utility from the private and collective good. So, his payoff function, U_E , is given by (7).

$$U_E = U_E(y_E, Q, C) = y_E + \theta_E (\phi_Q(Q) + \phi_C(C)), \quad (7)$$

where θ_E is his valuation on the collective good.

Then, the feasibility condition that the political entrepreneur can organize the group beyond $C(n)$ subject to his income constraint is shown by,

$$f(z) \geq C(n), \quad \text{subject to } c_z z + c_x x \leq I_E \quad (8)$$

In order to emphasize the heavy burden of his organizing and managing work, respectively, we assume here that the benefit of the collective good is not enough to compensate for each of his work. Those relations are demonstrated by (9) and (10).

$$U_E(I_E, 0, 0) > U_E(I_E - c_z z, Q, C), \quad \text{for any } Q \text{ and } C. \quad (9)$$

$$U_E(I_E, 0, 0) > U_E(I_E - c_x x, Q, C), \quad \text{for any } Q \text{ and } C. \quad (10)$$

In order for him to be able to take on the entrepreneurship, accordingly, he has to be able to compensate his work with some privileged reward, R , satisfying the following relation (his participation constraint):

$$U_E(I_E - c_z z - c_x x, Q, C) + R \geq U_E(I_E, 0, 0), \quad \text{for } f(z) \geq C(n) \quad (11)$$

The equation (11) also implies the incentive compatibility of the political entrepreneur, because the inequality, $U_E(I_E, 0, 0) \geq U_E(I_E - C_E, 0, 0)$, holds trivially and because the right hand of this inequality is the payoff obtained when one of the group members takes on the organizing work on his behalf. (Recall she cannot organize

the threshold size, $C(n)$, subject to her income constraint because of her poor talents for the political entrepreneurship).

The Renegotiation Stage

At the renegotiation stage, both the political entrepreneur and the organized members observe the results of the first stage. When the number size of the organized members turns out to exceed or be at least equal to the threshold level, the political entrepreneur has to decide on whether or not to take on the management work. When an organized member would take over him, her work is less efficient. Anyway both parties have already spent the organizing or organized cost. Thus, there arises the possibility that he can renegotiate with the organized members on his compensation for or reward to his organizing work and managing work.

Here, it is assumed that the default payoffs are dependent on the ownership of the non-human assets required for political entrepreneurship, *a la the property right approach*. Offices, cars, materials for public relations, and members' list are some of the examples.

The efficient level of the collective good is calculated on the basis of the information on the member size of the actually organized members. The net social benefit calculated on the basis of this information is divided between the political entrepreneur and the organized members in accordance with the Nash bargaining rule. If they are satisfied with the conclusion of the renegotiation, or if some member could take over the political entrepreneur in default, the game goes ahead to the third stage. If not, the game ends at this second stage.

This second stage is an abstracted image of a decision-making phase of any social organizer, where he has to decide on whether or not to continue to pursue his political entrepreneurship. He is sure to come to this phase, because even if he started as a bona fide social organizer, he is, at some moment, pressed to decide on whether or not to go ahead with the social activity he has been involved with, as far as he has to make a living by his own work.

The Production Stage

At the third stage the collective good is produced in line with the conclusion made at the second stage. When C is larger than $C(n)$, the output level of the collective good is higher than that stipulated by the initial contract, because additional effects are brought about. They are divided into two; the mechanical effect brought about by recalculating the efficient level of the collective good, and the coalitional effect. The organized member equally shares in the direct cost burden of the collective good.

The Latent Group at the Production Stage

Now we can give the precise definition of the latent (or large) group, based on the concepts of this paper. According to the definition given by Olson (Olson, 1965; pp.43-51), it meets the following three conditions: (i) that there is no privileged player, (ii) that payoff obtainable from collective action is bigger than the status quo payoff, and (iii) that once collective action is realized, the payoff of each cooperative member, even if

reduced by deviating action of any one player, still remains bigger than the status quo. So, a deviator can free-ride on other members' contributions.

The condition (i) is shown by,

$$U_i (I_i - C_i - pQ_0, Q_0, 0) < U_i (I_i, 0, 0), \text{ for any } i. \quad (12)$$

The condition (ii) is the same as the participation constraint given by inequality (4). The condition (iii) is shown by,

$$\text{If } U_i (I_i - C_i - pq, Q, C) > U_i (I_i, 0, 0), \text{ for any } q = Q/C, C \geq C(n),$$

$$U_i (I_i - C_i - pQ/(C-1), Q, C) > U_i (I_i, 0, 0). \text{ for any } i.$$

It means that if the collective action is realized beyond the threshold level, it still pays any one of the cooperators to bear some additional cost burden on behalf of any one deviator.

Under the condition (iii), the free-riding incentive for deviation from the cost-sharing, q , is shown by the following;

$$U_i (I_i - C_i, (C-1)q, C-1) > U_i (I_i - C_i - pq, Cq, C).$$

To the extent that the collective good has the characteristics of the public good, each member of the latent group is motivated to deviate from the direct cost burden. The assumption of sufficiently low transaction cost to overcome the incomplete contract problem, though, can make this free-riding problem solvable.

4. The Analysis

In this section, we investigate the collective action of a latent group by analyzing the three-stage game model presented in the previous section. First of all, we have to calculate the default and renegotiation payoff on which the decision making of the political entrepreneur is dependent. We assume net payoff augmented by way of renegotiation is shared between political entrepreneur and organized members at a ratio of μ to $1-\mu$.

4.1. Default Payoffs

The default payoffs depend on who has the property right to non-human assets required for political entrepreneurship. Offices, cars, capital assets for publicity work, members' list and so on are the examples for those non-human assets. It is the case that the organizing work affects the productivity of these assets. The more of z and therefore the more of C , the higher the productivity of those assets becomes. This is one of the social and technological backgrounds of the relation between C and $\phi_c(C)$. The default payoffs depend on the property right structure of those assets, because the owner has legal power to decide on how to use those assets. They may belong to political entrepreneur or to organized members. We investigate each case in turn.

(Case E) The Ownership of Political Entrepreneur

When the renegotiation breaks down under the ownership of political entrepreneur and he sets x at 0 , the default payoff of the political entrepreneur and of the organized member i are shown by (13) and (14), respectively.

$$\Pi'_E(E) = U_E(I_E - c_z z, 0, 0) < U_E(I_E, 0, 0) \quad (13)$$

$$\Pi'_i(E) = U_i(I_i - C_i, 0, 0) < U_i(I_i, 0, 0), \quad i \in [0, C]. \quad (14)$$

The inequality part of (13) is derived from the participation constraint of the political entrepreneur, (9).

If, on the contrary, the political entrepreneur sets x at 1 and if, therefore, he could attain the provision level of the collective goods, $\phi_Q(Q) + \phi_c(C)$, then his payoff would change to $U_E(I_E - c_z z - c_x x, Q, C)$. From (10), however, the following inequality is derived:

$$U_E(I_E - c_z z - c_x x, Q, C) < U_E(I_E - c_z z, 0, 0) \equiv \Pi'_E(E)$$

Thus, it is rational for him to choose x to be 0 when the renegotiation is broken up. Accordingly, his and i member's default payoff are given by (13) and (14), respectively.

(Case S) The Ownership of Organized Members

When the renegotiation is broken up under the ownership of the organized members, they may be able to replace the political entrepreneur or to take over his tasks somehow. A sufficient size of members, C , has been already organized just before the renegotiation, but they cannot completely take over the know-how and skill of the political entrepreneur. (Note the incentive compatibility condition). We assume here that when he is dismissed, the direct cost of providing Q is raised from q_i to $(1+\lambda)q_i$, $\lambda > 0$, for each i . Then, the dismissal is more remunerative for the organized members, when the following inequality,

$$\theta_i(\phi_Q(Q) + \phi_c(C)) > (1+\lambda)pq_i, \quad i \in [0, C], \quad (15)$$

holds true. Taking into account the participation constraint shown by (4), the inequality (15) is met, to the extent that λ is not so large. We assume the inequality (15) is held in what follows.

Then, the default payoff of the political entrepreneur and of the member i under the ownership of the organized, denoted by $\Pi'_E(S)$ and $\Pi'_i(S)$, respectively, are given by,

$$\Pi'_E(S) = U_E(I_E - c_z z, Q, C) < U_E(I_E, 0, 0) \quad (16)$$

$$\Pi'_i(S) = U_i(I_i - C_i - (1+\lambda)pq_i, Q, C) > U_i(I_i - C_i, 0, 0), \quad i \in [0, C] \quad (17)$$

The inequality part of (16) is derived from (9), and that of (17) is the same as (15). From (17), it is derived that the organized members can get better off when they go ahead with providing the collective good by breaking off with the political entrepreneur than when they end at the second stage.

A reinterpretation of the olsonian logic of collective failure from the viewpoint of the renegotiation possibility :

The Olsonian logic of collective failure overlooked the possibility of the renegotiation. This amounts to assuming the situation where x is always set at zero or the political entrepreneur is taken over at the final stage of our game model. Under the ownership rule of Case (E), the default payoff of the political entrepreneur and of the member i are $\Pi'_E(E)$ and $\Pi'_i(E)$, respectively. Both of them are worse than the status quo. When, therefore, he decides on z at the first stage, it is optimal to set it at zero, which leads to the collective failure. Under the ownership rule of Case (S), the default payoff of the political entrepreneur and of the member i are given by $\Pi'_E(S)$ and $\Pi'_i(S)$, respectively. As shown by (16), $\Pi'_E(S)$ is worse under the default condition than the status quo, which leads to no organizing work at the first stage.

In either case, the political entrepreneur rejects any organizing work at the first stage, if he is sure that the renegotiation would have fallen to collapse at the second stage, which is the same as no prospect of being compensated for his organizing work.

4.2. Renegotiation Payoffs

Both parties at the renegotiation stage is supposed to calculate the optimal level of the collective good for each interested party, based on the information on actually organized members' size, C . If the net benefit of this optimal output is positive, both parties have incentive to cooperate in producing it at the third stage. This positive net benefit is shared at the μ to $1-\mu$ ratio between the political entrepreneur and organized members. In what follows, θ_i , q_i and I_i are denoted by θ , q ($= Q/C$), and I , respectively for every i , to emphasize symmetric assumption. The optimal net payoffs are also dependent on ownership structure. We have to derive them for each ownership structure.

(Case E) Ownership of the Political Entrepreneur

When the non-human assets belong to political entrepreneur, cooperative payoff, $B(E)$, is determined by finding the maximizing value $Q(E)$ and $q(E) = Q(E)/C$ given $C = f(z)$ so as to satisfy the following:

$$B(E) = \text{Max} \int^C [\theta(\phi_Q(Q) + \phi_c(C)) - pq] d_i - [c_x - \theta_E(\phi_Q(Q) + \phi_c(C))] \quad (18)$$

The member i gains $(1-\mu)B(E)/C = (1-\mu)B_i(E)$, and $B_i(E)$ is defined by (19).

$$B_i(E) = \theta(\phi_Q(Q(E)) + \phi_c(C)) - pq(E) - [c_x - \theta_E(\phi_Q(Q(E)) + \phi_c(C))] / C \quad (19)$$

Then, the renegotiation payoff of the political entrepreneur and of the member i are given by (20) and (21), respectively.

$$\Pi_E(E) = U_E(I_E - c_z, 0, 0) + \mu B(E) \quad (20)$$

$$\Pi_i(E) = U_i(I_i - C_i, 0, 0) + (1-\mu) B_i(E), \quad i \in [0, C] \quad (21)$$

It is realistic to suppose $B(E)$ and $B_i(E)$ are positive, and $\Pi_i(E)$ is always supposed to meet the participation

constraint and incentive compatibility.

(Case S) Ownership of the Organized Members

If cooperation is agreed under the ownership rule of the organized members, the member i can save λpq , but the political entrepreneur has to set x at 1 . The cooperative benefit is derived by finding the maximizing value, $Q(S)$ and $q(S)$ ($= Q(S)/C$) given $C = f(z)$ for some z , of the following;

$$B(S) = \text{Max} [\int^C \lambda pq \, di - c_x] = \lambda pQ - c_x \quad (22)$$

$(1-\mu)B_i(S) = (1-\mu)B(S)/C$ is allocated to the member i , shown by (23).

$$B_i(S) = \lambda pq(S) - c_x / C, \quad i \in [0, C] \quad (23)$$

The renegotiation payoff of the political entrepreneur and of the member i are given by (24) and (25), respectively.

$$\Pi_E(S) = U_E(I_E - c_z, Q(S), C) + \mu B(S) \quad (24)$$

$$\Pi_i(S) = U_i(I - C_i - (1+\lambda)pq(S), Q(S), C) + (1-\mu) B_i(S), \quad i \in [0, C] \quad (25)$$

4.3. Comparison

Decision Making at the First Stage

At the first stage of the game, the political entrepreneur has to decide on the optimal z , so as to maximize his renegotiation payoff gained at the third stage. Taking it into consideration that his incentive compatibility is satisfied whenever his participation constraint is met (Recall the poor talents of each group member for the organizing work), the participation conditions for *Case (E)* and *Case (S)*, respectively, are given by the following:

$$\Pi_E(E) \geq U_E(I_E, 0, 0), \quad \text{for } z, f(z) \geq C(n), \text{ and}$$

$$\Pi_E(S) \geq U_E(I_E, 0, 0), \quad \text{for } z, f(z) \geq C(n).$$

If the above inequality is not met, the political entrepreneur is not willing to launch onto the organizing work in spite of its being feasible to organize at least the threshold number. In what follows, we examine the cases where the above participation conditions are met. First of all, we derive the group optimality conditions as a yardstick. The optimal level of z and Q , denoted by z^* and Q^* , respectively, are derived from maximizing M defined by,

$$M = \int^C U_i(I - C_i - pq, Q, C)di + U_E(I_E - c_z - c_x x, Q, C), \quad \text{for } f(z) \geq C(n)$$

From the concavity and increasing nature of $\phi_Q(Q)$, $\phi_c(C)$, and $f(z)$, we can derive z^* and Q^* so as to satisfy the following maximization conditions.

$$(C\theta + \theta_E) \phi_c'(C) f'(z) = c_z \quad \text{at } z = z^*, \text{ and} \quad (26)$$

$$(C\theta + \theta_E) \phi_Q'(Q) = p, \quad \text{at } Q = Q^* \quad (27)$$

where $\phi_Q'(Q)$, $\phi_c'(C)$, and $f'(z)$ are the first derivative, respectively.

Next, let's derive the selfish optimality. Under the ownership rule of *Case (E)*, the political entrepreneur chooses $z(E)^*$ so as to maximize $\Pi_E(E)$ defined by (20), and the organized members choose $Q(E)^*$ so as to maximize $\Pi_i(E)$ defined by (21). They satisfy (28) and (29), respectively.

$$\mu (C\theta + \theta_E) \phi_c'(C) f'(z) = c_z \quad \text{at } z = z(E)^* \quad (28)$$

$$(C\theta + \theta_E) \phi_Q'(Q) = p \quad \text{at } Q = Q(E)^* \quad (29)$$

Under the ownership rule of *Case (S)*, the political entrepreneur chooses $z(S)^*$ so as to maximize $\Pi_E(S)$ defined by (24), and the organized members choose $Q(S)^*$ so as to maximize $\Pi_i(S)$ defined by (25). Then, they satisfy (30), and (31), respectively.

$$\theta_E \phi_c'(C) f'(z) = c_z, \quad C = f(z(S)^*) \equiv C(S)^* \quad \text{at } z = z(S)^* \quad (30)$$

$$\theta \phi_Q'(Q) = (1 + \mu \lambda) p/C, \quad \text{at } Q = Q(S)^* \quad (31)$$

Comparison of Case (E) with the Group Optimality

From Equation (26) and (28), we can derive the following relation:

$$\mu (C\theta + \theta_E) \phi_c'_{(C(E)^*)} f'(z(E)^*) = (C\theta + \theta_E) \phi_c'(C^*) f'(z^*)$$

Since μ is less than one, from the above relation it is derived that $z(E)^* < z^*$.

Furthermore, it can be easily proven that the bigger is μ , the more effort he spends on the organizing work.

From (27) and (29), on the other hand, we obtain the following relation:

$$(C\theta + \theta_E) \phi_Q'_{(Q(E)^*)} = (C\theta + \theta_E) \phi_Q'_{(Q^*)}$$

This leads to $Q(E)^* = Q^*$. That is, the group optimal level of the collective good is achieved under the ownership of the political entrepreneur.

Comparison of Case (S) with the Group Optimality

From (26) and (30), we obtain the following;

$$\theta_E \phi_c'_{(C(S)^*)} f'(z(S)^*) = (C\theta + \theta_E) \phi_c'_{(C^*)} f'(z^*),$$

from which we can derive $\phi_c'_{(C(S)^*)} f'(z(S)^*) > \phi_c'_{(C^*)} f'(z^*)$. It is proved from this inequality that $z(S)^* < z^*$.

Furthermore it is proved that the less is θ_E , which is usually the case for a professional political entrepreneur, the wider is the gap between z^* and $z(S)^*$.

From (27) and (31), on the other hand, we can derive the following relation:

$$C\theta\phi_{Q'}(Q(S)^*) / (1 + \mu\lambda) = (C\theta + \theta_E)\phi_{Q'}(Q^*)$$

Since $1 + \mu\lambda > 1$, from the above relation we get $\phi_{Q'}(Q(S)^*) > \phi_{Q'}(Q^*)$, which leads to the following; $Q(S)^* < Q^*$. For Case (S), therefore, the collective good is still sub-optimal, even if renegotiation can give political entrepreneurs the incentive to take on the organizing work.

Comparison of Case (E) with Case (S)

From (28) and (30), we obtain the following relation:

$$\mu(C\theta + \theta_E)\phi_{c'}(C(E)^*)f'(z(E)^*) = \theta_E\phi_{c'}(C(S)^*)f'(z(S)^*)$$

From the above, we can derive that the bigger is μ and the smaller is θ_E , then the more plausible it is that $z(E)^* > z(S)^*$. The political entrepreneur spends more on the organizing work under his ownership than under the supporters' ownership, as μ gets larger and/or θ_E becomes relatively smaller. On the other hand, we have already derived the relation; $Q(E)^* = Q^* > Q(S)^*$.

5. The Main Conclusions and Summary

We investigated the possibility of collective action in a latent group, based on an economic model of social organizer. The idea of our model was inspired by the fact that at some ex ante stage prior to the direct production of any collective good, someone has to take the initiative for organizing collective actions, but that it usually takes heavy cost for him to take on it. To make the matters worse, the organizing work at the ex ante stage is of a relation-specific and non-verifiable nature, and so the undertaker of the organizing work is faced with the "hold-up" problem. Therefore, no self-interested person is willing to take on that work, unless it is solved.

If, however, the self-interested political entrepreneur can have some good prospect of compensation for and reward to his leadership, he can dare to launch onto the organizing work. This prospect is influenced by the prospect that his leadership is required at the production stage successively after his organizing work has been successively finished. The renegotiation possibility reflects it. It is because of that prospect held by active politicians and political lobbyists that we can observe "too many" collective actions of latent groups in pork barrel politics. And it is because of the same prospect that collective actions to establish new governments or constitutions have been organized in spite of their scale being large. On the other hand, one of the reasons why global commons have difficulty in achieving global agreements to preserve them is ascribed to the lack of this prospect. (Can one imagine that an organizer who tries to organize collective actions for cutting CO₂ emissions can make successful political career?) Our logic of collective action may lead us to look for new solutions to the tragedy of the global commons, when we have to take into consideration the hold-up problem of the political entrepreneurship.

The Olsonian logic of collective action has not thought much of the significance of the organizing work and renegotiation possibility. This led us to look for a missing-ring, the "selective incentive," to reconcile that robust

logical conclusion with ubiquitous counterexamples against it. The concept "selective incentive" itself has been criticized for its falling into a logic in circulation. In this paper, however, we showed that the circumstances where the "selective incentives" can be found out are those where the political entrepreneur can organize collective actions on a benefit-cost basis, and that the criticism can be avoided if the indispensability of the organizing work for any collective action is taken into consideration.

From the qualitative analysis of our three-stage game, we derived the following results: (i) whether or not collective actions can be organized depends on whether or not the political entrepreneur can be motivated well, but not necessarily on group size itself, (ii) the group optimality of the collective good for interested members can be achieved under the leadership of the financially independent type of political entrepreneur, (iii) the organizing work done by this type is still less than the group optimal level. But the bigger is his share in cooperative outcome, the more effort he spends on the organizing work, (IV) the group optimality of the collective good is not achieved under the leadership of a financially dependent type of political entrepreneur, and (V) the bigger is his share in cooperative outcome and the smaller is his valuation on the benefit of the collective good, then the wider is the gap between the organizing work under political entrepreneur's ownership and that under organized members' ownership.

Those results altogether may recommend us to promote more business-oriented social activities in order to achieve collective interests of our communities, which remain to be investigated for further study.

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Notes

- i See Wagner (1965), Ostrom (1965), Salisbury (1969), Flohlich et al. (1971), Jones (1978), Guttman (1982), Blanco and Bates (1990), Calvert (1992), Kuhnert (2001), and Arce M. (2001). Ostrom (1965) and Kuhnert (2001) chose a different terminology "public entrepreneur," but I subsumed it under the concept of the political entrepreneur, because both concepts have the common factors of the organizing and managing work. Compared to the above approach, Tullock (1971) and Silver (1974) keep to the "economic approach" more coherently. In this sense my paper may be considered as a ramification of their approach.
- ii As to the incomplete contract, see Williamson (1979).
- iii As to the concept of the networking, see Myerson (1977), Jackson and Wolinsky (1996), Qin (1996), Dutt, et al. (1998).
- IV This is the same assumption as the "perfect consensus" defined by Olson.

(See Olson, 1965; pp.59-60.)

V This logic implies that the concept of excludability be taken over by that of transaction cost. Regarding this idea, see Coase (1960) and Demsetz (1964). Sandler also recognized the organizing cost as one of the transaction cost (Sandler, 1992; p.48).

VI Each group member is named after a discrete number for convenience, but she is located along a continuous line from 0 to n , denoted by $[0, n]$.

VII The simple contract is an inevitable outcome of the incomplete contract condition. Refer to Edlin and Reichelstein (1996) and Che and Hausch (1999), as to the initial simple contract.

VIII Because both ϕ_Q and ϕ_C are an increasing and concave function, the equation (4) has two solutions. Here the smaller one is selected as Q_0 .

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