

Voice, Exit, and Co-Production: Political Economy of Citizen Engagement

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Co-Production: Crossing the Great Divide

Elinor Ostrom pioneered studies of co-production, where governments and communities pool their resources in joint delivery of public goods and services

In the modern world, the borderlines between governments, communities, and private sector are increasingly blurred, and co-production occurs in urban infrastructure, health care, public safety and security, education, social safety nets, etc.

Blessing or Curse?

If a community has the capacity to be engaged in the delivery of public goods and services, is such capacity an asset or a liability?

A sanguine outlook: communities contribute additional resources and make use of their comparative advantages vis-à-vis the government, such as better information, stronger incentives and greater flexibility.

A skeptical outlook: why duplicate the government? And why create the temptation for governments to free-ride on communities, offloading onto them government responsibilities, while keeping in full tax revenues?

Co-Production, Speaking Technologically

“Coproduct is an improvement ... [when] the technologies in use must generate a complementary production possibility frontier ... rather than merely a substitutive one” (Ostrom, 1996).

If the contributions of government and society are substitutes, the production should be carried out entirely by one of the parties, which does it at lower social cost.

If these contributions are complements, co-production makes sense economically, as it generates value-adding synergies.

Technologically Successful Co-Production

- Irrigation: trunk and feeder lines
- Education: parents interacting with teachers
- Law and order: regular policing and “neighborhood watch”

Political Economy of Co-Production

Government provision of public goods is not lump sum, and depends on political incentives, which could be affected by co-production. Therefore, co-production could generate an indirect political effect, in addition to the direct technological one. Such two effects could work in the same or opposite directions, making the overall social payoff to co-production uncertain and possibly even negative.

Baseline Model

Social welfare: $V(G)$.

Government's provision of public good:

Baseline model: $\max_G [\sigma V(G) + B - G]$; $\sigma V'(G) = 1$.

Accountability of government to society: $\sigma \in [0, 1]$.

Public good provision increases in government's accountability.

Co-Production Equilibrium

Co – production social welfare function: $V = V(G, H)$, where G and H are, respectively, government and community inputs. Community's size is normalized to unity.

Community input reflects the stock of social capital in the community.

Government's provision with co-production:

$$\max_G [\sigma \{V(G, H) - H\} + B - G]; \quad \sigma \frac{\partial V}{\partial G}(G, H) = 1$$

Substitutes and Complements

A: Government and community inputs are complements: $\frac{\partial^2 V}{\partial G \partial H} > 0$.

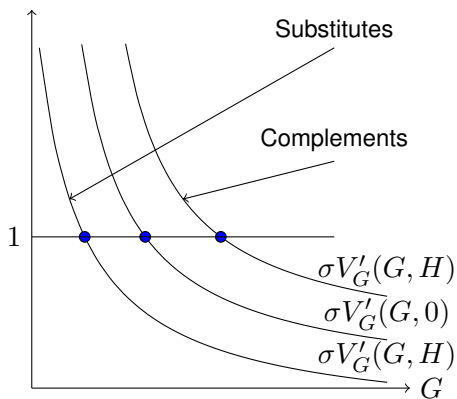
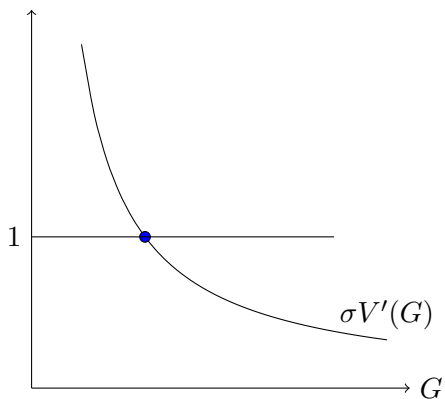
B: Government and community inputs are substitutes: $\frac{\partial^2 V}{\partial G \partial H} < 0$.

A: Greater contribution of the community increases social payoff to government input, and hence in equilibrium such input goes up. The political effect of co-production is positive.

B: Greater contribution of the community decreases social payoff to government input, and such input goes down. The political effect of co-production is negative.

Complementarity is a prerequisite of successful co-production not only technologically, but also politically.

What makes two inputs substitutes or complements?



Core and Auxiliary Inputs

Social welfare function $U(y_1, y_2)$; y_1 – core input (“trunk lines”), y_2 – auxiliary input (“feeder lines”).

Core and auxiliary inputs are complements: $\frac{\partial^2 U}{\partial y_1 \partial y_2} > 0$.

Government can invest only in the core input (due to inflexibility and a lack of information).

Communities can invest in both inputs, but are less efficient than governments in investing in core inputs due to a lack of specialization and economy of scale. Comparative disadvantage of communities vis-a-vis governments as suppliers of core inputs is $\alpha \in (0, 1]$.

Allocation of Community Resources

Community optimally allocates its contribution H between two inputs, given government's input G :

$$V(G, H) = \max\{U(G + \alpha h_1, h_2) | h_1 + h_2 = H; h_1, h_2 \geq 0\}$$

Denote:

$$\Psi(I) = \max\{U(y_1, y_2) | y_1 + \alpha y_2 = I; y_1, y_2 \geq 0\}$$

Whenever community contributes to the core input, one has $V(G, H) = \Psi(G + \alpha H)$. Otherwise $V(G, H) = U(G, H)$.

Assume that community input falls short of the socially optimal provision of the auxiliary input, so that $\frac{\partial U}{\partial y_2} > 1$ across the range of equilibria.

Low Accountability: Communities Replace Government

Assume:

$$\sigma < \underline{\sigma} \equiv 1/\Psi'(\alpha H)$$

Below this accountability threshold, government does not contribute to the core input, fully relying (free-riding) on community provision. In this range, there is no co-production political effect at the margin (“communities got nothing to lose”) and the social payoff to community input is positive:

$$\frac{d}{dH}[V(0, H) - H] = \Psi'(\alpha H) - 1 = \frac{1}{\underline{\sigma}} - 1 > 0$$

Intermediate Accountability: Communities Substitute for Government

There exists another accountability threshold $\bar{\sigma} > \underline{\sigma}$, s.t. in the $(\underline{\sigma}, \bar{\sigma})$ range government makes contribution to the core input, but such contribution is too small, and communities make additional contributions to the same input (and to the auxiliary input).

Intermediate Accountability: Communities Substitute for Government

Over this accountability range, one has:

$$\sigma \frac{\partial V}{\partial G}(G, H) = \sigma \Psi'(G + \alpha H) = 1$$

Hence for a given accountability level:

$$G + \alpha H = \frac{1}{(\Psi')^{-1}(1/\sigma)} = \text{const}$$

Inputs of government and community are now perfect substitutes, the political effect at the margin is negative, and the social payoff to community input is also *negative*:

$$\frac{d}{dH}[V(G, H) - H] = -1$$

High Accountability: Communities Complement Government

When accountability exceeds threshold $\bar{\sigma}$, communities no longer contribute to the core input, and their contribution instead goes in full to the auxiliary input, which complements the core input.

Government is now the sole contributor to the core input, and its contribution satisfies the equation:

$$\sigma \frac{\partial V}{\partial G}(G, H) = \sigma \frac{\partial U}{\partial G}(G, H) = 1$$

High Accountability: Communities Complement Government

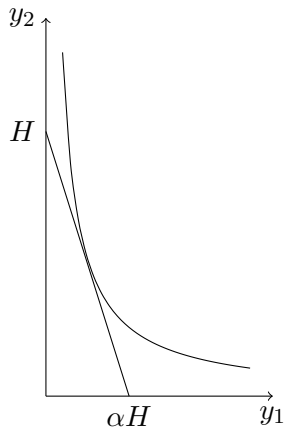
Due to complementarity between the core and auxiliary inputs, government contribution is an increasing function $G = G(H)$ of the community input, and the political effect at the margin is positive:

$G'(H) = -\frac{U_{GH}}{U_{GG}} > 0$. Co-production now works hand-in-hand with political accountability to the same effect.

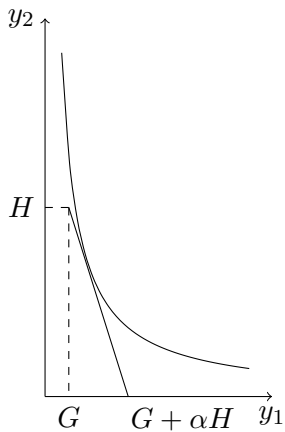
Of course, the social payoff to community input is *positive* as well, being a total of the positive technological *and* political effects:

$$\frac{d}{dH} = [V(G(H), H) - H] = U_G G'(H) + U_H - 1 > 0$$

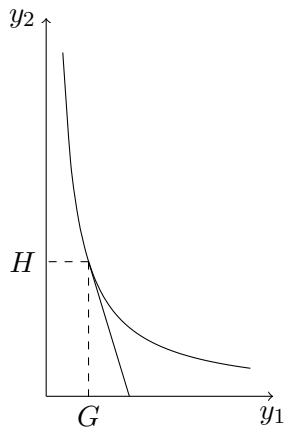
Replacement



Substitution



Complementarity

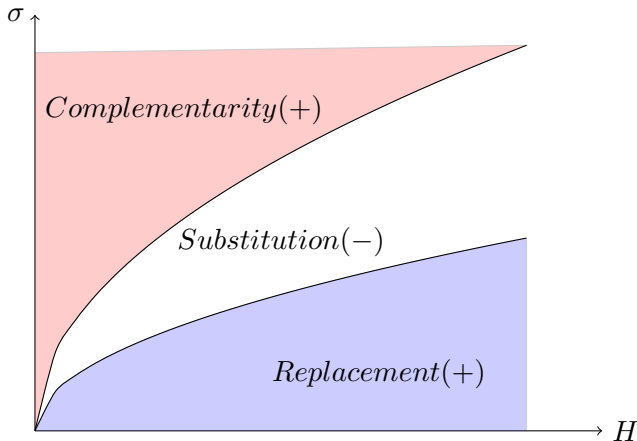


U-shaped Payoff to Co-Production

Co-production enhances social welfare, when accountability of government to the society is either very low, in which case communities supplant non-performing governments, or high, in which case communities complement well-functioning governments, and make governments work even better.

In the interim range of government accountability, communities substitute for underperforming governments, and net social payoff to such efforts is negative.

U-shaped Payoff to Co-Production



Russian Evidence

- 1 Social Capital in Russian Cities (Menyashev, Polishchuk, 2018).
Payoff to grassroots social capital in Russian cities is positive for low and high endowments of civic culture, and negative over an intermediate range of civic culture.
- 2 Russian Condominiums (Borisova, Polishchuk, Peresetsky, 2015).
Grassroots social capital improves the upkeep of residential housing, when condominiums are “captured” by predatory management, but has no significant effect in better-governed condominiums
- 3 Private Provision of Security in Russian Regions (Vasilionok, 2019).
For high levels of investment risks (reflecting low institutional quality and poor accountability of regional governments), public and private investments to safety and security are substitutes. For regions with low investment risk, public and private investments exhibit mild complementarity.

Voice, Exit, and ... Co-Production

Growing capacity for collective action can be released through either “collective voice”, which would improve government accountability and increase government provision of core inputs, or through a-political co-production, which is a “collective exit”.

Collective exit could be a highly imperfect substitute for collective voice, possibly leaving societies worse-off.