A Appendix

A.1 Proof of proposition 1

Here we prove that full cooperation is a sequential equilibrium in every economy and treatment. We say that a norm of cooperation is being followed in the group whenever all players adopt the trigger strategy discussed in Section 4. For clarity, let the defection payoffs be, respectively, $d = 6$ and $d - l = 3$ to a producer and a consumer. Let $k_i := 9 + 2i + y$ denote the cooperation payoff to a consumer of type $i = 1, 2, 3$, with $y = 0, a_i$ in a fixed pair and mixed group, respectively. Here, the gain from integration a explicitly depends on the type of player, as it happens in some treatments. A necessary and sufficient condition for full cooperation to be an equilibrium is reported in the following lemma:

Lemma 1. *Fix an economy. Let k denote the smallest cooperation payoff in that economy. If the continuation probability*

$$\beta \geq \beta^* := \frac{d}{k - d + l} \in (0, 1),$$

then full cooperation is a sequential equilibrium.

Study the payoff to a type i player. Under full cooperation, she earns k_i every other round as a consumer (zero, as a producer). Let $s = 0, 1$ denote the role of the player at the start of a round, where 0=producer and 1=consumer. The type of counterpart does not affect the player's payoff—only their action as a producer. The equilibrium payoff is

$$v_0 := \frac{\beta k_i}{1 - \beta^2} \qquad \text{and} \qquad v_1 := \frac{k_i}{1 - \beta^2}.$$

To understand v_0 note that in equilibrium every player always cooperates as a producer. Hence, a player of type i who is a producer earns 0 in the current period, and k_i next period (as a consumer), a value discounted by β. As this two-period cycle is indefinitely repeated, we obtain v_0. The explanation is similar for v_1.

Off-equilibrium there is full defection so the payoff corresponds to the one associated to infinite repetition of the static Nash equilibrium, denoted

$$\hat{v}_0 := \frac{d + \beta(d - l)}{1 - \beta^2} \qquad \text{and} \qquad \hat{v}_1 := \frac{d - l + \beta d}{1 - \beta^2}.$$

Full defection payoffs do not depend on the type i, unlike equilibrium payoffs. It is immediate that off-equilibrium a producer has no incentive to deviate from following the sanctioning rule (always defect), because defecting is the unique best response to every other producer defecting in every round. Hence, we only need to show that $v_0 \geq \hat{v}_0$, i.e., in equilibrium the player has no incentive to defect as a producer, by refusing to help some consumer.[22] This inequality can be rearranged as $\beta \geq \beta_i^* = 6/(6+2i+y)$ for the case of fixed pairs and mixed groups, and the Lemma automatically follows. Note that $\beta_i^* < 1$ because $k_i - (2d-l) > 0$ by assumption for all player types in all economies. The Lemma exploits the fact that the lowerbound probability β consistent with cooperation is a decreasing function of the player's return from cooperation k_i. Hence β_i^* decreases in i; players of "higher" type have higher returns from cooperation, hence a greater economic incentive to cooperate; see Table A1. Proposition 1 follows from observing that in the experiment $\beta = 0.75$ and the most stringent requirement for existence of equilibrium comes from fixed pairs composed of type 1 players, in which case $y = 0$ and $k_i = 11$; here, $\beta_1^* = 0.75$, which is the smallest lowerbound threshold.

Table A1: Threshold continuation probability β^*.

	Isolated econ.			Integrated econ.		
Treatment	i =1	2	3	i =1	2	3
Neutral	.75	.60	.50	.55	.46	.40
Converge	.75	.60	.50	.46	.46	.46
Diverge	.75	.60	.50	.67	.46	.35
Neutral+	.75	.60	.50	.46	.40	.35

[22]Though in the experiment discounting starts on round $T = 18$, the round in which the random termination rule started, one can demonstrates that the incentives to cooperate monotonically decline until round t. It follows that by studying the incentives to cooperate in equilibrium using payoffs associated with the beginning of round T ensures those incentives are satisfied in all $t < T$. In round $t = T$ payoffs correspond to v_s above. The details of this demonstration are provided in Bigoni et al. (2019).