Erratum to "Random marginal and random removal values" [Int J Game Theory (2008) 37: 533-563].

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In the above-referenced paper, on page 541 and 542, an example is given illustrating how the Hart and Mas-Colell bargaining procedure [see Hart and Mas-Colell (1996)] can produce multiple equilibrium proposals. In the example there are three consistent payoffs: $c_N = (50, 50)$, $a_N = (56.25, 37.5)$, and $b_N = (37.5, 56.25)$. It is shown that two of them, a_N and b_N, can be obtained as limits of a sequence of two equilibrium payoffs proposals. On page 542, and referring to the Hart and Mas-Colell procedure, it is written:

> "...this bargaining procedure *does not allow an approximation to all payoff solutions*: In our example, point $c_N = (50, 50)$, which is precisely the symmetric equilibrium payoff, is excluded."

This statement is incorrect.

Actually, the point c_N can also be obtained with the same limit approach. We can see this fact with the help of Figure 1. If we make $c_{N,1}(\rho') = b_{N,2}(\rho)$ and $c_{N,2}(\rho') = a_{N,1}(\rho)$, the new points obtained $c_{N,1}(\rho')$ and $c_{N,2}(\rho')$ are in the same contour set:

$$\left(c^1_{N,1}(\rho') - r^1\right)\left(c^2_{N,1}(\rho') - r^2\right) = \left(c^1_{N,2}(\rho') - r^1\right)\left(c^2_{N,2}(\rho') - r^2\right) = \pi_0,$$

and this fact implies that conditions HM.1 and HM.2 are satisfied. Hence, they are equilibrium proposals for some ρ'. Now we can take a sequence of contour sets such that $\pi_n \to \pi_c$, where

$$\left(c^1_N(\rho') - r^1\right)\left(c^2_N(\rho') - r^2\right) = \pi_c,$$

and we can associate the sequence of points $c^1_{N,1}(\rho^n)$ and $c^2_{N,1}(\rho^n)$ which are in the intersection of the contour sets with the boundary. Therefore we obtain the desired sequences which satisfies $c^1_{N,1}(\rho^n) \to c_N$, $c^2_{N,1}(\rho^n) \to c_N$, and $\rho^n \to \rho$.

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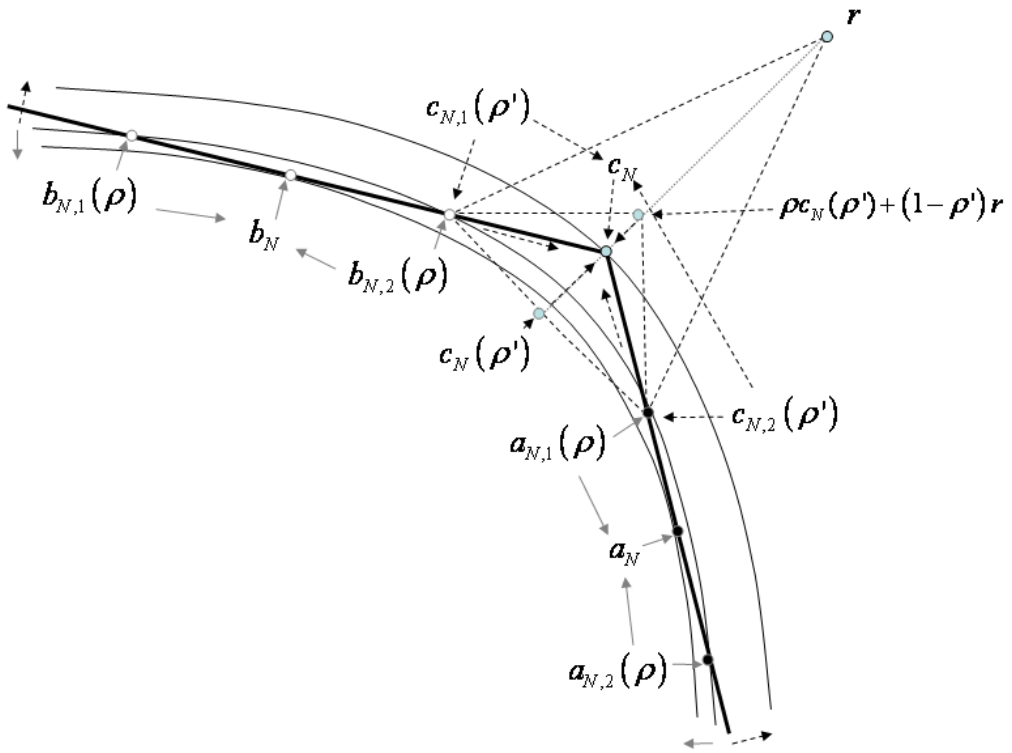

Figure 1

An example where there is a consistent payoff which cannot be approached with a sequence of equilibrium proposals of the HM bargaining procedure is the following. Let $N = \{1, 2\}$ be the set of players. The feasible set is the comprehensive convex hull of $\{(0, 75), (50, 50), (75, 25)\}$, and $r = (75, 75)$. Here the consistent payoffs are only $b_N = (37.5, 56.25)$ and $c_N = (50, 50)$. As any equilibrium proposals $\{c_{N,1}(\rho), c_{N,2}(\rho)\}$ associated with $\rho < 1$ must be in the intersection of the contour set

$$\left\{x_N \leq r : \ \left(x_N^1 - r^1\right)\left(x_N^2 - r^2\right) = \pi\right\}$$

with the boundary $\partial V(N)$, it can be seen from Figure 2 that any of such sequences can only converge to b_N when $\rho \to 1$.

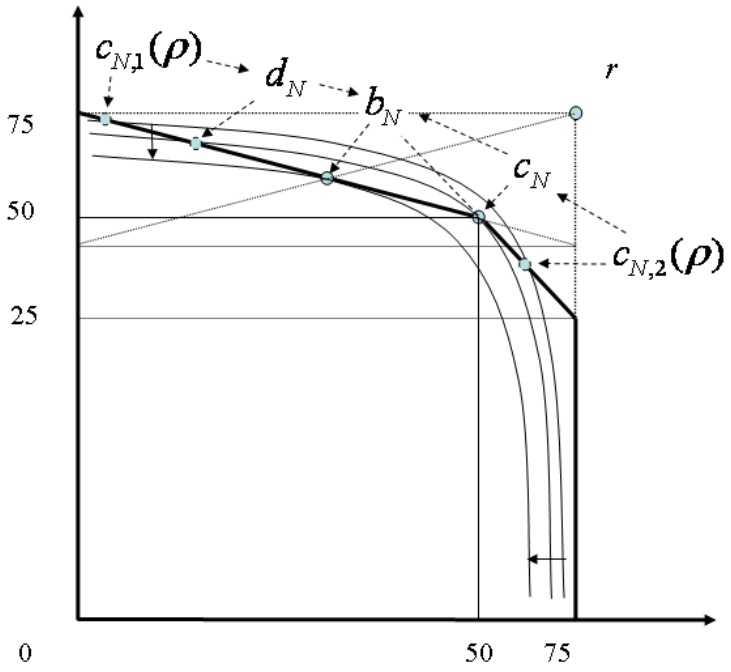

Figure 2

1 References

Hart, S., and A. Mas-Colell (1996): "Bargaining and Value," *Econometrica* 64, 357-380.