

Cooperative vs. Non-Cooperative Truels: Little Agreement, But Does That Matter?

Abstract

It is well-known that non-cooperative and cooperative game theory may yield different solutions to games. These differences are particularly dramatic in the case of truels, or three-person duels, in which the players may fire sequentially or simultaneously, and the games may be one-round or n -round. Thus, it is never a Nash equilibrium for all players to hold their fire in any of these games, whereas in simultaneous one-round and n -round truels such cooperation, wherein everybody survives, is in both the α -core and β -core. On the other hand, both cores may be empty, indicating a lack of stability, when the unique Nash equilibrium is one survivor.

Conditions under which each approach seems most applicable are discussed. Although it might be desirable to subsume the two approaches within a unified framework, such unification seems unlikely since the two approaches are grounded in fundamentally different notions of stability.

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