**The Complementarity of Centralized and Decentralized Institutions in Fostering Cooperation**

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**Abstract:**

Aim: Cooperation - behavior that is costly to the individual, but increases overall welfare - can have its roots in different factors.

It could be the result of (1) an intrinsic motivation to cooperate, due, for example, to prevalent norms; (2) informal punishment (e.g., peer-pressure), which also relies on the prevalence of (punishment) norms; or (3) formal sanctioning institutions (i.e., police and courts), which aim to change behavior in the absence of norms.

We report on laboratory experiments conducted in the UK and in Turkey (N=632), designed to disentangle and quantify the relative impact of these three factors, and relate them to the particular normative setting (UK vs. Turkey).

Method: We conduct four variations of a repeated public goods game: without punishment, with informal peer-punishment (punishment takes place after contribution decisions), with a formal sanctioning institution (investment in a punishment system takes place before contribution decisions), and with a combination of both.

Results: In the UK, where norms to cooperate and to punish non-cooperators are relatively salient, Informal peer-punishment induced high and stable cooperation levels, with decreasing levels of punishment (and, consequently, increasing levels of social welfare).

The formal sanctioning institution was considerably less effective than both informal punishment alone and the combination of both types of punishment.

Despite considerable resources that went towards funding it, it was not very effective in increasing contributions, and the end result was a low level of social welfare.

A best-reply analysis reveals that formal sanctions crowd out voluntary contributions.

The picture is very different in Turkey, with less cooperation, more investment in formal sanctioning, more anti-social peer punishment, and, consequently, much reduced social welfare.

Conclusions: Overall, we demonstrate that formal sanctioning institutions encourage best-reply reasoning and induce cooperation only when the monetary incentives are high enough.

They cannot effectively foster cooperation in the long run, unless they have the support of informal peer-punishment, which, in turn, requires sufficient cooperation norms.