



## **Department of Economics**

### **Athens University of Economics and Business**

#### **WORKING PAPER no. 04-2025**

#### **Institutions and Ethics**

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**February 2025**

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# Institutions and Ethics

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## Abstract

Institutions in societies with moral individuals should be trusted as ethical, i.e., as equitably fulfilling their promised palpable commitments. This is proven by means of a strategic infinite positional topological game of perfect (within players) information. In particular, by imagining that the society is playing a Banach-Mazur game.

*Key Words:* Institutions, Ethics, Banach-Mazur game.

*Classification:* D02, C70, C72, C79.

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Let the following two sets:

- (i)  $(\emptyset \neq) \mathcal{S} \ni s$ , which is a (finitely populated) human rights fostering and preserving (i.e., democratic and egalitarian) *society of benevolent individuals*,  
and
- (ii)  $(\emptyset \neq) \mathcal{I} \ni I$ , which is the (finite set) of all the extant *institutions* (laws, regulations, legislations, customs, traditions, and so forth) of  $\mathcal{S}$ , that have been generated in accordance with  $\mathcal{S}$ 's etiquette or culture.

Institutions of  $\mathcal{S}$  have an almost mandatory context<sup>1</sup> and are:

- (a) of *impartial* implementation to all individuals  
and
- (b) of *equal* - or, more loosely thinking, of *fair* by a principle of proportionality<sup>2</sup> - consequentiality across all individuals.

Let  $\mathbb{R}$  (with the usual topology) contain all the alternative *outcomes* or *consequences* that can be yielded by the activation of any  $I \in \mathcal{I}$ . Positive real numbers capture the objectively favourable (or liked) outcomes that are ensued by some  $I$ , i.e., someone's rights in  $\mathcal{S}$ . Negative real numbers represent the objectively unfavourable (or disliked) consequences that follow by some  $I$ , i.e., somebody's liabilities towards  $\mathcal{S}$ .  $\mathbb{R}$ , therefore, is the extended outcome space: it accounts for all the outcomes that could, in theory, occur when some  $I \in \mathcal{I}$  gets activated in  $\mathcal{S}$ .

Pick and fix an impactful  $I \in \mathcal{I}$  to  $\mathcal{S}$ . In practice,  $I$  makes a non-vacuous *promise* or *commitment*  $\mathbb{R}|_I := \mathcal{P} \subset \mathbb{R}$  to any  $s$  (thence, to the whole  $\mathcal{S}$ ) with respect to the range of the outcomes that the particular  $I$  can plausibly bring about. To be credible in the eyes of every  $s \in \mathcal{S}$ ,  $(\emptyset \neq) \mathcal{P}$  should be a manageably small, neat and coherent set of outcomes or consequences that represents  $\mathbb{R}$ . Say therefore that  $\mathcal{P} = \mathbb{Q}$ , the countable set of rational numbers, which is dense in  $\mathbb{R}$ .  $\mathbb{Q}$  is both a meagre (or first category) subspace of  $\mathbb{R}$  (that is, meagre in itself with the subspace topology induced from  $\mathbb{R}$ ) and a meagre subset of  $\mathbb{R}$ . This means that  $\mathbb{Q}$  is the countable union of nowhere dense subsets of  $\mathbb{R}$ , namely, of subsets the closure of which have empty interior. Harmlessly,  $\mathbb{Q}$  does not have the Baire property.  $\mathcal{B}(\mathbb{R})$  is the Borel  $\sigma$ -algebra of  $\mathbb{R}$ , and let  $\mathcal{F}$  be the family that collects all the intervals of  $\mathcal{B}(\mathbb{R})$ , which are Borel sets that contain a non-empty open subset of  $\mathbb{R}$ .

Eventually, (i) {equity+democracy+individual benevolence} and (ii) overall morality are not synonymous notions in  $\mathcal{S}$ . A society that is structured under principles that promote and sustain the human rights, and shelters moral individuals, is not necessarily ethical. This would then have to do with how powerful (or unbendable) the institutions of the society are in reality. This in turn would depend on how

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<sup>1</sup>This means that they are mandatory in principle, apart from some of them who are not mandatory, but then the lack of employment of the former by individuals implies their social exclusion.

<sup>2</sup>This renders egalitarianism and equitability equipotent concepts or virtues.

frivolous and/or how corrupted is the public authority<sup>3</sup> that is responsible for the production and maintenance of the institutions of the society.

In particular, define:

1.  $\mathcal{S}$  is an ethical society iff  $I$  keeps its promise iff each time  $I$  is activated in  $\mathcal{S}$  each  $s$  succumbs to (i.e., enjoys the privileges and/or is subject to the constraints of)  $\mathcal{P}$  iff  $\mathcal{S}$  is spanned by strong institutions.
2.  $\mathcal{S}$  is an unethical society iff  $I$  reneges iff there exist one activation of  $I$  and one  $s$  (within this activation) that does not succumb to  $\mathcal{P}$  iff  $\mathcal{S}$  is spanned by weak institutions.

It is of paramount importance that individuals believe that they reside into a trustworthy ethical community with moral aggregations (or ethical projections) of moral individual or unit behaviours. If such a question (should I trust  $I$ ?) is posed and then is answered in the affirmative, then the aggregatively created mutual institutions will serve and protect the individuals' private-to-collective interests. Or else, the society runs the danger of a collapse in its (personal-to-communal) moral values. The truth is, however, that either believer or not, an individual does not actually know whether  $I$  will keep its promise and deliver  $\mathcal{P}$ , irregardless of how reliable  $I$  seems to be, to wit, of what clues or signals  $I$  transmits to an  $s \in \mathcal{S}$ .

So assume that there are two types of moral individuals in  $\mathcal{S}$ .

1.  $s \in \mathcal{S}$  is of Type I iff  $s$  that does not trust that  $I$  will keep  $\mathcal{P}$ , i.e, believes that  $\mathcal{S}$  is immoral, until it is (i.e., it has to be) proven that  $I$  should have been trusted.
2.  $s \in \mathcal{S}$  is of Type II iff  $s$  that does trust that  $I$  will keep  $\mathcal{P}$ , i.e, believes that  $\mathcal{S}$  is moral, until it could be proven that  $I$  should not have been trusted, which scenario here is falsified.

Let then the two benevolent individuals be the two (strategically interacting) players, player I and player II respectively, that play the (infinite positional topological game of perfect within-players information) Banach-Mazur game<sup>4</sup>

$$MB_{\mathcal{S},I}(\mathcal{P}, \mathbb{R}, \mathcal{F}), \mathcal{P} = \mathbb{Q}, I \in \mathcal{I} \text{ and } \mathcal{S} \ni s.$$

With respect to  $I$ , player I is playing with a *non trusting strategy*, while player II is playing with a *trusting strategy*. Player I (the pessimist) starts the play, i.e., makes the first move to the game, player II (the optimist) then follows, and then the game is continued with countable infinitely many sequential moves of the two players, in this specific order. When player I initiates the game by being based on his disbelief

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<sup>3</sup>Which can be either central or decentralised.

<sup>4</sup>The term topological game was introduced by Berge (1957).

and pessimism, he chooses some (arbitrary) sufficiently lengthy<sup>5</sup> interval  $J_0^I$  from  $\mathcal{F}$  as a proxy for  $\mathcal{P}$ . Player II then, who is fully informed of and observes the choice of player I, chooses an informationally refined interval  $J_1^{II} \subset J_0^I$  for the same purpose. This process may be continued endlessly with the independent or autonomous (but strategically inter-correlated) intention of each player to approach as close as possible to the target set  $\mathcal{P}$ , so that the following sequence (of type  $\omega = \{0, 1, 2, \dots\}$ ) of players' choices or actions is formed

$$J_0^I \supset J_1^{II} \supset \dots$$

A strategy of Player II is a function defined for each finite sequence of moves of Player I. A strategy for Player I is defined analogously.

Player I one wins the game, or has a winning strategy over the  $MB_{S,I}(\mathcal{P}, \mathbb{R}, \mathcal{F})$  iff

$$\mathcal{P} \cap \left( \bigcap_{n < \omega} J_n^\bullet \right) \neq \emptyset,$$

that is, has positioned herself as close as possible to  $\mathcal{P}$  after a finite sequence of strategic moves. Otherwise player II wins, equivalently, has a winning strategy over the game.

The fact that  $\mathcal{P} = \mathbb{Q}$ , i.e., the promise of the institution  $I$  is concisely and precisely set without being subject to mis-interpretations, secures that player II (the moral idealist) wins the game<sup>6</sup>. So institutions with pragmatic outcomes should be trusted by ethical individuals.

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<sup>5</sup>For example, with a big (finite or infinite) value for the Lebesgue outer measure or the Caratheodory measure.

<sup>6</sup>See in Mycielski et al (1956), Oxtoby (1957) and Mauldin (1981, problem 43).



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