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# Constitutional Design and Political Communication

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**Abstract**

This paper models the constitutional design process, and points out the importance of political communication (defined as the level of information about the social distribution of policy preferences that individuals hold, at the time of this process) on the "extent" of "democratic restraints" of the socially preferred constitution and on the welfare derived by the society from its implementation. The results demonstrate that the level of political communication has a positive effect on the level of democracy of the socially preferred constitution and on social welfare. Moreover, it is proved that, even if there exist no tolerance for dictatorship by societies in general, the level of democracy demanded by the society, reaches the maximum possible level, only if political communication is "perfect". That is, the socially preferred constitution in cases of "imperfect" political communication incorporates both dictatorial and democratic elements.

JEL Codes: D60, D70, D81, K0.

Keywords: constitution, political communication, democracy

# 1    Introduction

The basic choice that a sovereign collective entity has to take at an early stage of its existence is the election of the specific set of rules that will define the distribution of decision making power among its component members. The set of these rules is, usually, included in the constitutional agreement, and it is, in principal, open to future amendments. The constitution institutionalizes the political rights of the component members of the sovereign entity, that is, it assigns a weight in each individual's political preferences and forms a collective preference aggregation mechanism that will be, thereafter, used to provide the political outcome. In, more traditional economic literature, words, the constitution determines which component of the sovereign entity, or group of components, possess' the formal power (power to implement policies) and how is the real power (power to decide which policy should be implemented) distributed among the members of the given entity.

The distribution of real power may, very well, vary among the constituent members of the sovereign entity. In a constitutional agreement akin to the Magna Carta (England, 1215 AC), the individual that bodies the institution of the monarch holds all real and formal power and in a constitutional agreement analogous to the ancient Athenian one (500 BC) the formal power is assigned to some small group of individuals, while the real power is distributed equally among all component members that own citizenship rights. Moreover, current constitutions are observed to be relatively more uneven than the ones described above, in the sense that monarchs or other elite groups sustain a political precedence over the rest of the citizens in terms of real power (monarchs, even if they lack the Magna Carta's monopoly of real power, preserve some unrestrained decision making power, elective officers have executive powers and economic elites have clear, and many times institutionalized, advantages in the costly political competition process) while citizens sustain real power too.

It is rather obvious that the distribution of real power, in a political environment of conflicting interests and policy preferences, is of crucial significance, as far as the welfare of the component parts of the given environment is concerned. If a society assigns to its authority all the real power, then it may not, through a constitutionally legal way at least, oppose to any policy implementation that could potentially decrease its welfare. As an example one can use the comparison between the Greek and the Irish constitution articles, that deal with the issue of international treaties ratification. The first one allows the authority to integrate any international treaty in the national legislation without the call of a public referendum, while the latter one not. As a result, and even though studies on the public opinion, clearly, demonstrated that a majority, in both countries, opposed to the acceptance of the Lisbon treaty, Greece ratified the treaty and Ireland did not.

Regardless of the fact that distribution of real power is of the circumscribed importance and of, clearly, economic nature, the modern economic literature has not yet treated the issue with the appropriate attention. Apart from Rousseau's and Locke's classical discourses on the nature of the constitutional agreement and the remarkable intuition offered by Buchanan and Tullock (1962) and Arrow (1963) related to social decision making, current literature deals with constitutions, mainly, in a macro-oriented approach, where the effects of constitutions in various economic performance indicators is studied[1]. Of course there exist various studies that investigate the constitutional design process, but, unfortunately, the issue of distribution of real power is treated in an epidermic,

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[1] Persson, Tabellini (2003)

partial or, even, absolute manner. Barbera and Jackson (2004) and Aghion, Alesina and Trebbi (2004) adopt a simple, but nonetheless instructional, approach in modeling the constitutional design procedure. The first define the constitution, solely, as a self stable voting rule while the latter, even though they address the important issue of real power distribution, they canalize their efforts on voting rules too. Acemoglu and Robinson (2001, 2006) protrude in the literature that focuses on democratic transition and the determinants of constitutional changes but they adopt an utter approach in terms of real power transition smoothness. That is, this literature studies the specific factors that lead one extreme (in terms of real power distribution) constitution to supersede another. Dictatorship (where real power is assigned to just one small group) gives its place to democracy (where real power is distributed equally to everybody) and vice versa.

The present paper will attempt to study a more theoretical and elastic constitutional design process. The society, that is the set of citizens, will have to decide the exact distribution of real power among the two composite entities that have been hinted above; the authority[2] and the society. Even if we assume that the society is the only composite member of the sovereign entity that will decide how much real power it wants for itself and how much it is willing to offer to the authority, the result of this procedure will not be a trivial one (the society will hardly ever decide to keep all real power for itself) and will depend on the level of political communication among the citizens, that is, on the level of information that each citizen holds about the social distribution of policy preferences. The reason for this apparent ambiguity is one of the fundamental issues that differentiate social and individual choice. The coherence privilege of a solid entity in comparison to a collective one. It shall be demonstrated that a high level of political communication converts a society to behave like a solid entity, that is, it leads society to adopt a constitution in which the real power is assigned mainly (if not absolutely) to itself and a lower level of political communication compels a society to, willingly, share the real power with the authority.

## 2  Conceptual Substratum

> "... there, and there only is political society, where every one of the members hath quitted (this) natural power, resigned it up into the hands of the community... and into men having authority from the community...", J.Locke "On Political or Civil Society".

The central point of the above words by Locke is the claim that a political society can exist only in those cases where individuals have given to the community the power to arbitrage any confrontation that may arise among them. This is primarily focused on confrontations related with property issues, as the right of property is one of the central interest of his work. It is true, though, that following a logical line of thought and observing historical evidence, one can generalize the above definition to all aspects of social interaction where the element of confrontation of interests is present. All political societies such as modern national states, ancient city-states and empires, and even the newly born realization of the supranational organization (European Union) share the common characteristic of being divided into two clearly distinct entities; the society and the authority.

The later is authorized by the society to deal with any issue that concerns society. In most political societies the authority is divided into groups of specialization (legislative, executive and

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[2] A small elitist group that is perceived to always hold all formal power. The elite is always, or nearly always, perceived to possess the formal power and will be, thus, called as authority.

judicial authority[3]). As Locke implies, the political society by the means of its authorized individuals solves confrontations that may arise among the individuals. The described authorized individuals seem to be the judges of a court, that is, the judicial authority, who listen to the engaged parties and take a decision. But the decision they take is in fact based on the laws of the political society, and the construction and implementation of these laws are the duties of the legislative and executive authority. Thus, the burden of solving a confrontation between members of a society is basically on the shoulders of the legislative and executive authority. Constructing and implementing a law, is nothing else than imposing an opinion of how to deal with an issue to the component members of the political society. And these individuals, the component members of the political society, may all have different opinions. Hence, legislation and implementation of a policy is the most important arbitrage procedure in an environment of conflict of interests such as this of the political society.

This line of thought results in a basic question. How is legislation and implementation of a policy being done in a political society? The question finds its answer in the power-map[4] of the political society, the written version of the social contract, the constitution. A constitution is a collection of written principles and rules that identify the sources, purposes, uses and restraints of public power. A constitution summarizes "the rules of the game in a society, or more formally the humanly devised constraints that shape human interaction"[5]. And since it has all these "human" characteristics, it is obvious that it is designed from humans and not delivered from a Divine being.

Given that the concept of the constitution is multidimensional, the attempt to model it as a whole would create great analytical obstacles. The sources and purposes of public power for example, are a list of principles that are not open for economic modelling. That is why, in the present paper, a constitution will be viewed as a collection of restraints of power.

What is interesting to explore, here, is what kind of restraints of power imposes the society to the authority when the society is in the process of constitutional design. Schofield (2002) suggests that "under normal circumstances, the rules of constitution are grounded in what might be called a core belief" specifying that the use of "core belief is to indicate an analogy with the notion of a core in a voting game. A voting core is an outcome, unbeaten under the particular system of rules and preferences of the society". That is, a constitution may be implemented only if it is preferred to all other available constitutions by the political society. But in any case, one should try to investigate not only which is the socially preferred constitution (which could be done using the above notion) but also to identify the nature of the restraints of power that, through its implementation, the society imposes on the authority.

There are two general categories of restraints of power that may exist in a constitution. The first one includes the "absolute restraints". These restraints are set at the time of the constitutional design and are not subject to any individual or collective evolution of preferences that may occur in a later period. For example, one could consider the individual right of a citizen to choose a religious belief. As long as this right is included in the bill of rights of the constitution and even if the society opposes to it at a certain period, the authority is obligated to defend this right. The second category includes the "democracy restraints". Before analyzing the exact concept of the "democracy restraints" of a constitution, one should feel sure that the notion of democracy is perfectly understood. Democracy is derived from the greek words "demos" (people) and "kratos" (rule, power), hence it is the rule that assigns to the people the decision making power. The

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[3] Montesquieu (1748)
[4] Duchacek (1973)
[5] North (1990)

definition of democracy is very simple, very specific and leaves no space for interpretations. Its realization, however, can take different forms and, thus, may be subject to an extended theoretical discussion.

As we saw above, there are two entities that interact in the framework of a political society; the society and the authority. The notion of "democracy restraints" of the constitution attempts to capture the distribution of decision making power between the society and the authority. These restraints determine the level of democracy a society involves in the decision making process. They are not absolute, but they vary subject to collective evolution of preferences that may occur in a later period. To understand the notion of "level of democracy" consider the following. In political society named Alpha, the constitution provides to the authority the power to directly implement its ideal policy. That is, the authority is just restrained by the absolute restraints, and need not request the approval of anyone to implement its preferred policy. In political society named Omega the authority before implementing a policy must get the approval of an elected parliament. That is, in this society the policy must be approved both by the authority and the elected parliament. The parliament is a collection of individuals that represent the society in the decision making process. One could define the "distribution of opinions of the ideal parliament" as a small sample approximation of the social distribution of opinions. In this way, the authority in political society Omega is restrained by the opinion of the elected members of the parliament, and their election depends on the preferences of the society at a specific period of time. As Omega is, obviously, a "representative democracy", the level of democracy involved in the decision making is higher than the one involved in political society Alpha.

In representative democracies, like the Omega political society, the exact level of democracy can be measured by the means of two basic elements of the political environment. The first one is the equivalence of the parliament's distribution of opinions with the social distribution of opinions. It is obvious that under a proportional election rule, the parliament's distribution of opinions is more representative of the society's distribution of opinions, than if the same political society were under a majoritarian election rule. The second element is the amount of participation of the parliament in the decision making. In presidential systems, for example, the president can take direct decisions without requiring the support of the parliament.

But what should be the theoretical notion of the highest level of democracy? This may be no other than the direct democracy outcome. A constitution of direct democracy means that requires pair-wise voting between all possible alternatives in the policy space. It is the decision rule that provides the Condorcet outcome and which according to a utilitarian approach is the outcome that maximizes social utility. The above definition implies that for any decision in the given political society an extensive set of pair-wise voting procedures among all available potential policies will be held, and the authority will have to implement in the end the Condorcet winner. In this constitution the society has all the decision making power and, thus it perfectly corresponds to the definition of democracy.

By the above, the particular nature of the described "democracy restraints of power", that are included in the constitution, is clearly illustrated. The authority in the political society Omega is implicitly restrained around the society's preferred policy, as by its constitution is explicitly restrained around the elected parliament's preferred policy. The tighter the authority's implemented policy around the social preferred policy is, the higher the level of democracy. And as the society's preferred policy may vary over time, "democracy restraints" move along with it.

# 3   The model

The purpose of the present paper is to provide a clear insight into the relationship between the level of political communication among individuals in a given society and the desired level of democracy involved in the decision making procedure by the same society at the time of the constitutional design process. Hence, from the two sets of restraints that might exist in a constitution, the one that makes sense to be analyzed here is the second one, that is, the set of democracy restraints. Later in the paper, an effort to integrate absolute restraints in the theoretical setup shall be conducted.

## 3.1   Basic elements

We consider a policy space represented by the segment $[0,1] \in \Re$. Let the society be a continuum of individuals characterized by their ideal policy, distributed in $[0,1]$ according to a distribution function $F(i)$. The median voter $m$ is formally defined by $F(m) = 1/2$. Preferences of the individuals on policy outcomes are single peaked. We formally define the utility of an individual $i$ after the implementation of a policy $b$ by: $u_i(b) = -|b - i|$, where $b$ is a policy outcome (decision of the authority) and $i$ the ideal point of individual $i$. Similarly, in our framework, a potential authority is interested just in implementing its ideal policy. That is, the utility of an authority $r$ after the implementation of a policy $b$ can be formally defined by: $u_r(b) = -|b - r|$, where $r$ is the ideal policy of the authority $r$.

Following the previous section description of the nature of democracy restraints, and given that they are the only restraints in the constitutions to be studied here, the role of a constitution is to exclude a measure of policies from the authority's choice set, that is, from the policy space $[0,1]$, such that these excluded policies are a function of the society's policy preference ordering. Adopting a utilitarian approach on how social preferences should be treated, that is, assuming that social utility is the sum of individual utilities (formally represented by $u_{F(i)}(b) = -\int\limits_0^1 |b - i| dF(i)$), it is observed[6] that, in the presented setup, social preferences are equivalent to the median voter's preferences. Hence, if a policy $b_1$ is preferred by the median voter to another policy $b_2$, then the utility derived by the society from $b_1$ is higher than to the utility derived by the society from $b_2$ and vice versa. Therefore, the policies that a constitution excludes from the authority's choice set could be viewed as a function of $m$. Formally, let $\Omega$ be the set of "all conceivable constitutions". Then, a constitution $x^j \in \Omega$, is defined by $x^j = [s_1^j(m), s_2^j(m)]$, such that, $0 \leq s_1^j(m) \leq s_2^j(m) \leq 1$. Subsets $[0, s_1^j(m))$ and $(s_2^j(m), 1]$ represent policy outcomes that an authority $r$ cannot implement. The boundary values $s_1^j(m)$ and $s_2^j(m)$ are functions of $m$, that is, they are functions of the social preference ordering and they are, thus, compatible with the notion of democracy restraints of power that has been introduced. In other words, a constitution with democracy restraints defines a subset of the policy space as the choice set of the authority, such that, this clearly defined subset is a function of the social preference ordering. To avoid complexities, and to construct a friendly environment to work in, it shall be assumed that $s_1^j(m) = max\{0, m - \varepsilon_1^j\}$, and that $s_2^j(m) = min\{m + \varepsilon_2^j, 1\}$, where $\varepsilon_1^j \geq 0$ and $\varepsilon_2^j \geq 0$.

Given the above, the set of "all conceivable constitutions" can be, at this point, formally characterized as $\Omega = \{[s_1^j(m), s_2^j(m)] \in [0,1] | s_1^j(m) = max\{0, m - \varepsilon_1^j\}, \ s_2^j(m) = min\{m + \varepsilon_2^j, 1\},$

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[6]Statistical result. Say $x \backsim F(\mu, m, \sigma^2)$. Then, $E|x - c|$ is minimised for $c = m$ and $\frac{\partial E|x-c|}{\partial c} < 0$ for $c < m$ and $\frac{\partial E|x-c|}{\partial c} > 0$ for $c > m$.

for all $\varepsilon_1^j \in [0,1]$ and all $\varepsilon_2^j \in [0,1]\}$.

Having defined what a constitution is in this framework, it would be useful, at this point, to formally define, as well, the level of democracy of such a constitution. A constitution $x^j$ that defines a choice set for the authority which consists of policies that offer high social utility, or in other words, with $\varepsilon_1^j$, $\varepsilon_2^j$ small, is obviously more democratic than a constitution $x^k$ that defines another choice set for the authority in which there exist an extra measure of policies that offer lower social utility, or in other words, with $\varepsilon_1^k \geq \varepsilon_1^j, \varepsilon_2^k \geq \varepsilon_2^j$. The level of democracy is, thus, related with the average social utility derived from the policies that exist in the authority's choice set that the constitution defines. Taking advantage of the parallelism between social utility and the median voter's utility, that we have noticed above, the level of democracy of a constitution $x^j$ is formally defined as: $D(x^j) = -\int\limits_{m+\varepsilon_2^j}^{m-\varepsilon_1^j} |m - z| dz$. This expression is just the negative of the average distance between society's utility maximizing policy, $m$, and all the permitted policies that are included in constitution $x^j$. By solving the integral we conclude that $D(x^j) = -\frac{(\varepsilon_1^j)^2 + (\varepsilon_2^j)^2}{2}$. Given that no values of $\varepsilon_1^j$, $\varepsilon_2^j$ bigger than one make sense[7], we observe that $D(x^j) \in [-1, 0]$ for all $\varepsilon_1^j \leq 1$, $\varepsilon_2^j \leq 1$ and that $\frac{\partial D(x^j)}{\partial \varepsilon_1^j} < 0$, $\frac{\partial D(x^j)}{\partial \varepsilon_2^j} < 0$. The above formal description of the democrativeness of a constitution, simply, demonstrates, that the "tighter" the restraints around $m$, that is, the smaller $\varepsilon_1^j$ and $\varepsilon_2^j$, the more democratic the constitution $x^j$ is.

The game is constructed in the following way. To incorporate the notion of a constitution being a "core belief" as described by Schofield (1999), at the first stage the society conducts an extensive procedure of pair-wise voting between all possible pairs of alternative constitutions that belong in $\Omega$. In each voting process, individuals vote for their preferred constitution. The constitution $x^* \in \Omega$ that will prevail in this procedure, if such exists, will be implemented and will be called the Condorcet winner constitution. Note that, for $x^*$ to be the Condorcet winner, it is necessary to have that, there exist no $x^k \in \Omega$ and $x^k \neq x^*$ such that $x^k$ is preferred to $x^*$ by a majority of the society. In the second stage an authority $r$ will be appointed and will implement a policy $b^*(r, x^*) \in [s_1^*(m), s_2^*(m)]$. The policy $b^*(r, x^j)$ will denote the optimal decision of an authority $r$, under constitution $x^j$ and, by solving the trivial utility maximization program of the authority, we conclude that $b^*(r, x^j) = r$ if $r \in [s_1^j(m), s_2^j(m)]$, $b^*(r, x^j) = s_1^j(m)$ if $r < s_1^j(m)$ and $b^*(r, x^j) = s_2^j(m)$ if $r > s_2^j(m)$. In the last stage both the individuals and the authority compute their welfare.

What the game structure implies, is that the present analysis attempts to model a delegation problem with a continuum of principals (society) and one agent (authority). As it will be obvious in the following section where the informational ingredients of the model will be introduced, this delegation problem shall be conducted in an environment of a varying level of incomplete information about the principals' preferences and perfect information with respect to the agent's preferences.

Regarding the second stage of the game, in which the authority $r$ is appointed, one could argue that the exact authority that appears after the implementation of a constitution, actually, depends on the given constitution. This could be true or not. What is important is the amount of information the society has. If the society knows that by choosing a constitution $x^j$ an authority $r^j$ will appear and by choosing a constitution $x^k$ an authority $r^k$ will appear, then each individual has

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[7]For $\varepsilon_1^j \geq 1$, we have that $s_1^j(m) = 0$ for $m \in [0,1]$, and for $\varepsilon_2^j \geq 1$, we have that $s_2^j(m) = 1$ for $m \in [0,1]$. That is, the only sensible values of $\varepsilon_1^j, \varepsilon_2^j$ are those in the segment $[0,1]$.

all the necessary information to compute the exact $b^*(r^j, x^j)$ and $b^*(r^k, x^k)$ and, thus, can compare the utility he or she will derive from a possible implementation of constitutions $x^j$ and $x^k$ and choose accordingly. Therefore it shall be assumed that the choice of the authority is independent of the constitutional choice process. Assuming that the ideal policy of the authority depends on the implemented constitution does not add anything to the analysis that follows and is, for this reason, neglected. According to any mechanism of appointing an authority, the constitutional design procedure remains unchanged.

## 3.2  Informational elements

It has been stated that individuals derive utility just from the policy that an authority implements after a constitutional choice, and not (directly) from any procedural factors, such as the level of democracy of the designed constitution. But in the first stage of the game, individuals do have to express a preference on constitutions. To do that, and given the fact that the policy $b^*(r, x^j)$, that a constitution $x^j$ is expected to deliver, depends on the ideal policy of the potential authority $r$ and on the social preference ordering that defines the choice set of $r$, they need information about $r$ and $m$ (which is equivalent to knowing the whole social preference ordering). We shall consider perfect information as far as $r$ is concerned. That is, because, the present paper, is not really interested in the information that individuals hold about the policy preferences of the potential (or already existing) authority, but in the information individuals have about the social preference ordering.

But what do we mean by information about $m$? Here it is necessary to introduce a definition of political communication. Political communication is performed by any process that provides an individual with information about the preferences of the other individuals of the society. Political communication can be a dialogue process between the component members of the society, through which they get informed about each others opinion, or a set of voting procedures between alternatives. It can also be a set of other doings such as strikes, or public protests by which a subset of the society demonstrates its opinion to the society. It can be conducted through direct or indirect channels, that is, both by immediate exchange of opinions among a number of individuals and by the means of mediator agents, such as political information providers (newspapers, tv-channels, web-pages, etc.). If we have a high level of political communication, then all individuals know (we assume here that knowing is equivalent to say that the individual's expectations about the social preference ordering are consistent with the true ones) the social preferences. On the contrary, when we have a low level of political communication, individuals' expectations about the social preference ordering are subject to an extended uncertainty. That is, individuals are unsure about the exact form of the distribution of the opinions in society and they, therefore, consider a large number (can also be infinite) of possible distributions, assigning to each one of them, a probability of being identical to the real one. In this way, it is highly unlikely that they estimate the exact form of the real distribution of opinions of the society consistently.

So, if we are in the case of the highest possible political communication level, we mean that each member of the society knows exactly the value of $m$ and if we are in a case of a lower political communication level, we mean that individuals have expectations on $m$'s possible value given by $\Phi(m')$. Any level of political communication lower than the highest possible implies that even the median voter $m$ is unsure about being the median voter. Therefore, to avoid any confusion we use the prime notation to denote the random variable $m'$. That is because the median voter is aware of his ideal policy but not of the fact that he is the median voter.

We have implicitly assumed that all individuals posses the same information about $r$ and $m$. Even if, in first sight, it appears bizarre, it is very rational to do so. That is, because, in large societies each individual performs immediate political communication with an insignificant measure of the society and has at his or her disposal the same mediator delivered information as everybody else.

To complete the description of the nature of this information, and to avoid the case of deceitful information delivery by the political communication mediators, that would weaken the impact of the following analysis, we shall impose a minimal quality criterion which will guarantee that the delivered information might be imperfect, but not fallacious. Formally, it shall be assumed that $\Phi(m')$ behaves in accordance with the Median Central Limit Theorem. In the present model's framework, this theorem suggests that $E(m') = m$ and that if $\Phi(m')$ assigns to a subset of the policy space (of positive measure) a probability zero of being the segment where $m$ lies, that is if $\Phi(m')$ is based on a large number of observations (high level of political communication), $\Phi(m')$ should look like a normal distribution (MCLT). From all the properties of the normal distribution, the one that will be of some assistance to the present analysis is the symmetry property, which is formally defined by the following. If $\alpha \in (0,1)$, such that $\Phi(\alpha) = 0$ and $\Phi(\alpha + z) > 0$ for any $z > 0$ and $\beta \in (0,1)$ such that $\Phi(\beta) = 1$ and $\Phi(\beta - z) < 1$ for any $z > 0$, then $(\alpha + \beta)/2 = E(m')$. Notice that, if there are no such $\alpha$ and $\beta$, that is, if $\Phi(m')$ assigns to any subspace of $[0,1]$ a positive probability of being the host of $m$ (small number of observations - low level of political communication) then $\Phi(m')$ need not be symmetric. Adopting these we can, also, write the highest possible level of political communication in terms of $\Phi(m')$. That is, if $\Phi(m) = 1$ and $\Phi(m - z) = 0$, for any $z > 0$ then the level of political communication is the highest possible.

Given the above, the level of political communication at the time of the constitutional design process shall be formally defined as $P(\Phi(m')) = -MD(m')$, Where $MD(m') = \int\limits_{0}^{1}|m' - E(m')|d\Phi(m')$ is the mean deviation of $m'$, that is the mean of the absolute distances between any $m' \curvearrowleft \Phi(m')$ and the mean of $\Phi(m')$. $MD$ is a descriptive statistic related to the dispersion of a random variable, considered to be more efficient than the standard deviation $\sigma$ and harder to mathematically handle than the later one. It is straightforward to see that the level of political communication is maximized when $MD(m') = 0$, that is, the highest level of political communication is equal to zero and all the lower levels are negative numbers above minus one.

Finally, we shall define a measure of informativeness of the level of political communication, with respect to the ideal policy of the potential authority $r$. This measure will be, formally, defined as $I(\Phi(m'), r)$ and will be equal to minus one if $\Phi(r)[1 - \Phi(r)] \neq 0$ and equal to zero if $\Phi(r)[1 - \Phi(r)] = 0$. Writing $I(\Phi(m'), r) = -1$ is equivalent to saying that both the probability of $r > m$ and the probability of $r < m$ are positive, that is, $\Phi(m')$ does not allow individuals to asses with certainty at which side of $r$, $m$ lies. On the contrary, $I(\Phi(m'), r) = 0$ says that $r$ can only be in the one side (bigger or equal, or smaller or equal) compared to all possible values of $m$. Notice that if $P(\Phi(m')) = 0$ then $I(\Phi(m'), r) = 0$. This is because $P(\Phi(m')) = 0$ is equivalent to $\Phi(m) = 1$ and $\Phi(m - z) = 0$, for any $z > 0$, which implies that $\Phi(r) \in \{0, 1\}$ for any $r \in [0, 1]$. In general, political communication will be considered to be "quasi-perfect" (it provides perfect information about the side of $r$ that $m$ lies) if $I(\Phi(m'), r) = 0$ and "non quasi-perfect" if $I(\Phi(m'), r) = -1$. That is because, if $I(\Phi(m'), r) = 0$ and even if individuals have imperfect information on the whereabouts of $m$ $(P(\Phi(m')) < 0)$ they have, in fact, perfect information on which side of $r$, $m$ is. As we will demonstrate in the results section, this qualitative dimension of the political communication level

among the component members of the society, will prove to be of utmost importance.

In general, the definition of political communication employed here differs to that of the political participation as described in the economic literature. Its importance will, now, be illustrated.

# 4 Results

## 4.1 Existence of a Condorcet winner constitution

Taking under consideration the structure of the presented game, and before any attempt of describing the characteristics of the constitutional choice of a society, it is important to establish a possibility result. That is, it is important to formally demonstrate that a Condorcet winner constitution $x^* \in \Omega$ always exist, given any authority $r$ and any possible level of political communication $P(\Phi(m'))$. The following definition of what is perceived to be in this context a Condorcet winner constitution, and the consequent proposition will provide a sufficient annulment of any doubts.

Within this framework, a Condorcet winner constitution is defined as the segment of permitted policies, that is preferred by the society to any other segment of permitted policies, that is available at the time of the decision making process.

**Definition 1** *A Condorcet winner constitution $x^* \in \Omega$ where $x^* = [s_1^*(m), s_2^*(m)] \in [0,1]$ is such that, there exist no $x^j \in \Omega$ and $x^j \neq x^*$ such that $x^j$ is preferred to $x^*$ by a majority of the society.*

**Proposition 1** *A Condorcet winner constitution $x^* \in \Omega$ always exists and it is such that $Eu_m(b^*(r, x^*)) \geq Eu_m(b^*(r, x^j))$ for every $x^j \in \Omega$.[8]*

The intuition behind this median voter theorem is directly traceable in the elements which define the value of the expected utility of an individual in this society. Each constitution $x^j$, together with the level of political communication $P(\Phi(m'))$ and the ideal policy of the authority $r$, define an expected policy outcome $E(b^*(r, x^j)) = \int_0^{r-\varepsilon_2^j} (m' + \varepsilon_2^j)d\Phi(m') + [\Phi(r + \varepsilon_1^j) - \Phi(r - \varepsilon_2^j)]r + \int_{r+\varepsilon_1^j}^{1} (m' - \varepsilon_1^j)d\Phi(m')$. The expected utility of an individual $i$, though, does not depend exclusively on $E(b^*(r, x^j))$ but on the mean deviation (variance) of $b^*(r, x^j)$ as well. By the concave version of Jensen's inequality, we know that in general $Eu_i(b^*(r, x^*)) \leq u_i(E(b^*(r, x^*)))$ and that $Eu_i(b^*(r, x^*)) = u_i(E(b^*(r, x^*)))$ for all $i \in [0,1]$ if and only if $P(\Phi(m')) = 0$. We have, moreover, observed that $Eu_0(b^*(r, x^*)) = u_0(E(b^*(r, x^*)))$ and $Eu_1(b^*(r, x^*)) = u_1(E(b^*(r, x^*)))$ for any level of $P(\Phi(m'))$. Which implies that the uncertainty that the lack of political communication creates on the expectations of the political outcome of the considered constitution, that is, the mean deviation of the expected outcome of the constitution, is of a diminishing effect as we move from $m$ to the ends. In other words, as we move fro $m$ to 1 (or 0) the expected utility of individuals depends less on the mean deviation of the expected policy outcome of the constitution and more on the expected policy outcome of the constitution itself. Thus, if individual 0 and $m(< r)$ prefer $x^j$ to $x^k$ $(E(b^*(r, x^j)) < E(b^*(r, x^k)))$ then the monotonicity property that characterizes the deterministic median voter theorems is preserved and all individuals among them will prefer $x^j$ to $x^k$.

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[8]All proofs can be found in the Appendix

## 4.2 Dictatorship vs Direct Democracy

In all sets of objects with common characteristics, the most interesting pair is the one composed by the extremes. In the set of all conceivable constitutions $\Omega$ this pair is composed by the constitution that imposes no democratic restraints $(\varepsilon_1^r = \varepsilon_2^r = 1)$ $x^r = [0,1]$, which is interpreted as dictatorship ($x^r$ is the constitution in which the implemented policy is identical to the ideal policy of the authority $r$ independently of the whereabouts of the ideal policy of the median voter $m$ - a dictatorship of $r$) and by the constitution that imposes the highest possible democratic restraints $(\varepsilon_1^m = \varepsilon_2^m = 0)$ $x^m = [m,m]$, which is interpreted as direct democracy ($x^m$ is the constitution in which the implemented policy is identical to the ideal policy of the median voter $m$ independently of the whereabouts of the ideal policy of the authority $r$ - a dictatorship of $m$). Since in dictatorship $\varepsilon_1^r = \varepsilon_2^r = 1$, we have that $D(x^r) = -1$, which is the lowest possible value that the measure of democracy of a constitution can take, and since $\varepsilon_1^m = \varepsilon_2^m = 0$, we have that $D(x^m) = 0$, which is the highest possible value that the measure of democracy of a constitution can take. Thus, the above selection of the extreme constitutions in $\Omega$, in terms of democracy involved, conforms with the formally defined extreme values of the level of democracy $(D(x^j) \in [-1,0]$ for all $x^j \in \Omega)$ a constitution may involve in the decision making process.

The first one, is a constitution very much alike to that of the "Magna Carta", issued in England in 1215 AC. It is a constitution that includes no institution of democratic expression neither related to policy outcomes nor to representatives. On the other side, the later one (direct democracy constitution) is in this context the analogue for the Athenian constitution of 500 BC. It is a constitution that obliges the authority to implement the policy chosen by the society through the direct democracy procedure.

As it has been stated in the previous section (the model), the exact form of individual preferences that are used here (euclidean distances) have the property of maximizing social utility, which is viewed as the sum of all individual utilities, when the median voter's policy is implemented. Notice that, this is commonly known to all component members of the studied society. That is, if they were asked to declare their true opinion on which is the constitution in $\Omega$ that, once chosen, would offer the highest social utility, they would unanimously choose $x^m$ as an answer. This fact creates an extra force towards the democratic choice. Moreover, as there are no costs attached to the democratic procedure and since direct democracy is the constitution that maximizes social utility, one could jump to the conclusion that direct democracy is always preferred to dictatorship. Which, of course, is not always so. The driving forces of this superficial ambiguity will be formally illustrated by the means of the following proposition.

**Proposition 2** *Direct democracy is socially preferred to dictatorship if and only if $r \notin [m + P(\Phi(m')), m - P(\Phi(m'))]$. Or, the measure of preferable dictatorships is decreasing in the level of political communication.*

Notice that the only level of political activity which guarantees that dictatorship will not be socially preferred to direct democracy, independently of the exact value of $r$, is the highest possible level $P(\Phi(m')) = 0$. In that level, and for all values of $r \neq m$, direct democracy is strictly socially preferred to dictatorship and for $r = m$ the society is indifferent, as in practice, both constitutions will prove to be dictatorships of the same individual (the median voter).

It becomes clear, that in environments of imperfect political communication, that is, of $P(\Phi(m')) < 0$, the choice of the society between the two extreme constitutions (in terms of democracy involved) may not be predicted just by the fact that $x^m = argmaxD(x^j)$ and that $x^r = argminD(x^j)$. The

exact location of $r$ is a necessary condition to identify society's preferences. This observation, is a natural consequence of the effects that a level of political communication, lower than the highest possible, has on the median voter's expected utility from direct democracy. If $P(\Phi(m')) = 0$, then $Eu_m(b^*(r, x^m)) = -E|m - m'| = -|m - E(m')| = -|m - m| = 0$. This implies that for all $r \neq m$ we will observe $Eu_m(b^*(r, x^r)) < 0$. Thus, without knowing the exact value of $r$ it is possible to state, that societies that exhibit the highest possible level of political communication $(P(\Phi(m')) = 0)$ never prefer dictatorship to direct democracy. Contrariwise, we can state that in societies whose level of political communication is lower than the highest possible $(P(\Phi(m')) < 0)$, one may always identify a positive measure of policies, such that, if the dictator's ideal point $r$ is one of these policies, dictatorship shall be socially preferred to direct democracy.

This implies that democracy is valued more in environments where political communication and interaction are high, than in environments of low political information exchange. This finding suggests that for a society to demand democracy, a high level of political communication among the individuals is required, whereas for a society to accept dictatorship individualism is enough.

## 4.3    The intermediate constitution domination

"Video meliora proboque deteriora sequor"[9], Ovid, Metamorphoses, VII 20

As it has been demonstrated, the fact that direct democracy is commonly known to maximize social utility is not enough to make a society prefer direct democracy to dictatorship. We have analyzed so far, what determines the society's preference between the two extreme elements of $\Omega$. But is there some monotonicity property between the level of democracy of a constitution and the social preference ordering of constitutions? In other words, if a society prefers the dictatorship of an authority $r$ to direct democracy, does this also imply that this society prefers all intermediate constitutions to direct democracy and dictatorship to all intermediate constitutions? Or, equivalently, if a society prefers direct democracy to the dictatorship of an authority $r$, does this also imply that this society prefers all intermediate constitutions to dictatorship and direct democracy to all intermediate constitutions? The intermediate constitutions of $\Omega$ are all those with a level of democracy above the dictatorship's level of democracy and below direct democracy's level of democracy, that is the set of intermediate constitutions is $\Omega - \{x^r, x^m\}$.

If such property exists, then the only constitutions we should observe in the world, would be the two extreme ones. It would imply that, all the representative democracy constitutions, which are adopted almost everywhere in the globe, and which involve a level of democratic participation in the decision making, that is, they impose democratic restraints in the authority's choice set, should be less preferred either to dictatorship or to direct democracy.

For our analysis to be in accordance with the real world facts, such monotonicity property should not exist in general. What one observes, at least in a country-society level, is the domination of the intermediate constitutions (like those of representative democracy) and the great variance these intermediate constitutions have. There are claims, which could be true, that propose that the reasons for this fact are the large participation costs of a direct democracy rule of governing a state and the de facto aversion of individuals to totalitarian regimes such as dictatorships. What we shall demonstrate here, is that, in absence of these considerations, an intermediate constitution is still the dominant constitution for reasons connected to the level of political communication of

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[9] "I see the better and acknowledge it, but I follow the worse"

the society in the time of the constitutional design. We shall, moreover, provide an argument of why we observe such a high variety of intermediate constitutions.

**Proposition 3** *If political communication is "non quasi-perfect", then the Condorcet winner constitution is neither direct democracy nor dictatorship. On the contrary, if political communication is "quasi-perfect", then the Condorcet winner constitution is direct democracy.*

Constitutional design in an environment of "non quasi-perfect" political communication is mainly the choice of $\varepsilon_1^j \geq 0$ or $\varepsilon_2^j \geq 0$. To this process the specific form of $\Phi(m')$, which reflects the level of political communication of a society, and the ideal point of the potential authority $r$ play an important role, as shown in the proof of the above proposition. Moreover, it is important to understand, that, when a society decides to be ruled by a dictator, it has chosen this constitution out of a very poor choice set. As it was demonstrated, for any $\Phi(m')$ and $r$, dictatorship will never be the Condorcet winner constitution if the society chooses the constitution from $\Omega$. That is, if a society chooses dictatorship it must have elected it from a very limited subset of $\Omega$. In other words, the only possibility for a society to choose dictatorship is to have a choice set that does not contain a large variety of intermediate constitutions.

The main intuition behind the intermediate constitution dominance result, which is nodal for the current analysis, inheres in the "anchoring" characteristic that all such constitutions have. In an environment of "non quasi-perfect" political communication ($I(\Phi(m'), r) = -1$) direct democracy not only begets an uncertain outcome in policy terms, but, moreover, society is unable to absolutely predict if this "uncertain" outcome is to the left or to the right of the authority's ideal point. That is, in such environments, the society does not perfectly know whether the authority is more conservative than the society or the converse. This uncertainty, leads a very conservative, say, median voter to form the following consideration. If the society is more conservative than the authority (let's assume that the authority is less conservative than the median) then it would be preferred that the authority holds little, or even absolutely no, real power ($\varepsilon_1^j$ very small), but if the society is less conservative than the authority then it would be preferred that the authority has some real power, that is, that the authority is able to implement a more conservative policy than the society's ideal point ($\varepsilon_2^j$ large). Hence, the median prefers a constitution that assigns some real power to the authority, in those cases where the direct democracy outcome would be too burdensome for him. In other words, he uses the authority as an "anchor" that deters the political outcome from cruising towards de trop seas.

Having assimilated the above general illation, it is time, now, to focus, a little bit more, on the characteristics of the Condorcet winner constitution $x^*$. Up to this point, we have shown that the Condorcet winner constitution in the case of "quasi-perfect" political communication, defined as the exact knowledge of the side of $r$ that the ideal policy of the median voter lies, is direct democracy. In the country-society level such an attempt to assume that the political communication is "quasi-perfect", would be rather ambitious. This kind of societies may exhibit a high, or a low, level of political communication, but can hardly be absolutely sure about the relative position of $r$ and $m$. On the other hand, small societies, as municipalities or the family-society may, very well, have "quasi-perfect" political communication.

It would, thus, be of great importance to try to identify, how this Condorcet winner constitution $x^*$ looks like, when the political communication performed is "non quasi-perfect". To proceed to such an attempt, we will need to take an extra assumption on the form of $\Phi(m')$, so that, the obstacles that the generality of its description poses, be overcame. The distribution function

$\Phi(m')$, that describes the level of the political communication of the society, will be considered to be a uniform distribution in $[\alpha, \beta] \subset [0, 1]$.

**Proposition 4** *If political communication is "non quasi-perfect", and $\Phi(m')$ uniform in $[\alpha, \beta] \subset [0, 1]$ then the Condorcet winner constitution $x^*$ is such that, $\varepsilon_1^* = \varepsilon_2^* = -|m - r| - 2P(\Phi(m'))$.*

The important conclusion that one can derive from the above proposition, is not the fact that in equilibrium we get symmetric democracy restraints $\varepsilon_1^* = \varepsilon_2^*$, as this is, presumably, due to the uniform nature of $\Phi(m')$, but the fact that $\varepsilon_1^* = \varepsilon_2^*$ are decreasing functions of $P(\Phi(m'))$ and $|m - r|$. This is equivalent to saying that, the level of democracy a society chooses to include in the constitution, is an increasing function of the level of political communication and of the distance between the median voter's ideal policy and that of the authority. As $D(x^*) = -\frac{(\varepsilon_1^*)^2 + (\varepsilon_2^*)^2}{2}$ and even if political communication remains "non quasi-perfect" with respect to $r$ $(I(\Phi(m'), r) = -1)$, by increasing $P(\Phi(m'))$, $D(x^*)$ increases. This fact alone, is enough to point out the importance of political communication at the time of the constitutional design process, as the higher its level is, the higher the level of democracy demanded will be. Moreover, the positive relationship between $|m - r|$ and $D(x^*)$ demonstrates the intuitive fact, that societies are willing to set tighter democracy restraints to an authority with extreme policy preferences than to an authority with preferences compatible to those of the society.

## 4.4 Welfare implications

By the means of the preceding analysis, a positive relationship between the level of political communication $P(\Phi(m'))$ and the level of democracy $D(x^*)$ of the Condorcet winner constitution $x^*$ has been established. What remains to be studied, is the social welfare consequences, of the level of political communication. Since, for a given society and a given authority $r$, different levels of political communication yield different Condorcet winner constitutions $x^*$, the policy outcomes of these constitutions may, very well, not coincide. Moreover, we know that, given the structure of individual preferences (euclidean distances) employed here, the social utility from a given policy outcome $\hat{b}$, defined as $u_{F(i)}(\hat{b}) = -\int_0^1 |i - \hat{b}| dF(i)$, behaves as $u_m(\hat{b}) = -\left| m - \hat{b} \right|$. That is, for a pair of policies $\hat{b}, \acute{b} \in [0, 1]$ we have that if $u_m(\hat{b}) > u_m(\acute{b})$ then $u_{F(i)}(\hat{b}) > u_{F(i)}(\acute{b})$ and vice versa. This fact, allows us to conduct the following social welfare analysis just by studying the effects of the level of political communication on the welfare of the median voter. Notice that, since our aim is to link the previous findings with the welfare of the society, it is inevitable that we keep on considering that $m'$ is uniformly distributed in $[\alpha, \beta] \subset [0, 1]$.

**Proposition 5** *Consider two identical societies $F_1(i) = F_2(i)$ which exhibit different levels of political communication $P(\Phi_1(m')) \neq P(\Phi_2(m'))$, and, correspondingly, two identical potential authorities $r_1 = r_2 = r$. Then, if $P(\Phi_1(m')) \geq P(\Phi_2(m'))$ we have that $u_{F_1(i)}(b^*(r, x_1^*)) \geq u_{F_2(i)}(b^*(r, x_2^*))$, where $x_1^*, x_2^*$ are the Condorcet winner constitutions of societies $F_1(i)$ and $F_2(i)$.*

As stated in the fourth proposition, the higher the level of political communication of a society, the tighter the democracy restraints of the Condorcet winner constitution. Thereby, assuming $r$ fixed, the higher the $P(\Phi(m'))$ the closer the $b^*(r, x^*)$ to $m$. By the means of the observed absolute correlation between $u_m(b^*(r, x^*))$ and $u_{F(i)}(b^*(r, x^*))$ it, easily, follows that the welfare a society derives from its Condorcet winner constitution is an increasing function of $P(\Phi(m'))$.

# 5 Extensions

## 5.1 Democracy vs Stability

A major question, still open in all political societies, is the dilemma between a set of institutions that guarantees democratic expression and a set of institutions that guarantees governmental stability. Even if practice has shown that the one does not, necessarily, rule out the other, there are many serious counter arguments that do not allow us to neglect the possibility of democracy and stability being conflicting goals. A very popular one, is that an absolutely proportional election system guarantees fair representation and, respectively, efficient democratic expression, but in most cases leads to unstable government formations. The same argument continues, that the majoritarian (or the proportional with a significant first party bonus) election system leads, with higher probability, to one party governments, and, thus, ensures stability.

An interesting feature of the previous analysis, is that societies with $P(\Phi(m')) < 0$ tend to exhibit some sort of preference for stability over democracy. As it was noted in the end of the proof of proposition 1, if the expected policy outcomes of the considered constitutions coincide, then all $i \in [0, 1]$ shall (weakly) prefer the one preferred by the median voter. This conducts society to a weakly-unanimous choice with the following characteristics.

**Proposition 6** *Given that political communication is not of the highest level $(P(\Phi(m')) < 0)$ and two constitutions $x^j$ and $x^k$ such that $E(b^*(r, x^j)) = E(b^*(r, x^k))$ and $Eu_m(b^*(r, x^k)) > Eu_m(b^*(r, x^j))$. Then $MD(b^*(r, x^k)) \leq MD(b^*(r, x^j))$ and $D(x^k) \leq D(x^j)$.*

As it has been stated in the elaboration of the first proposition, when the society has to choose between two constitutions that offer the same expected outcome, a unanimous decision is observed. What was clarified here, is that this unanimous decision is in the favour of the "more stable" constitution, that is, in the favour of the constitution that yields the policy outcome with the lowest mean deviation. This fact reaffirms the society's "risk aversion" related to policy outcomes and validates the existence of a negative link between democracy and stability. Notice that the existence of such a link is definite only if the expected policy outcomes of two constitutions perfectly coincide. In all other cases, a society might very well prefer the a more democratic constitution to a more stable and, thus, solely the knowledge of the level of stability and democracy of two constitutions, is, hardly ever, enough to predict society's preferences.

Obviously, the above cannot hold for $I(\Phi(m'), r) = 0$, because as we have seen, in that case, direct democracy is the Condorcet winner constitution. Thus, when societies declare a preference for stability over democracy, the political communication performed is "non quasi-perfect", and respectively the level of political communication is, severely, lower than the highest possible.

## 5.2 Society's characteristics and Political Communication

### 5.2.1 Social distribution of ideal policies

An issue that remains intact from the analysis so far, is the affinity between the distribution of ideal points in a given society and the level of political communication that this society achieves. At first sight these two exogenous parameters of the model seem only partially related. By definition, the mean of $\Phi(m')$ is the median of $F(i)$ but the level of political communication, defined as the

negative value of the mean deviation of $m'$, lacks of any palpable connection with $F(i)$. But is this, really, so?

To justify the specific nature of $\Phi(m')$ we have, implicitly, assumed that political communication is achieved through a process of revelation of policy preferences by a randomly selected subset of the society. The size of this subset that publicly reveals its policy preferences determines the level of political communication of the given society. It is not hard to see that the larger this portion of individuals is, the more accurately all society members can estimate the exact position of the median voter and vice versa. This, evident observation allows the conduct of a comparative exercise so as to identify possible differences in the level of political communication between two societies which are non-identical in terms of ideal points distribution but which have an identical number of randomly selected citizens that announce their policy preferences.

The described process of political communication, which behaves in accordance to the formal construction of $\Phi(m')$, combined with the implications of the median central limit theorem, leads the line of reasoning to the following conclusion. Since the dispersion of $m'$ is negatively related to the number of randomly selected individuals that reveal their policy preferences and positively related to the dispersion of ideal policies of a given society on the policy space, then it naturally follows that the level of political communication achieved in a rather "homogeneous" society (low variance) is higher than the level of political communication achieved in a rather "heterogeneous" society (high variance), whenever the number of the randomly selected citizens who reveal their policy preference in both societies is identical.

The above affirmation, when introduced in the context of the preceding results, implies that the more "homogeneous" a society is in policy preference terms, the more likely it is that this society selects a quite democratic constitution and, consequently, the more likely it is to achieve a high level of social welfare. On the other hand, "heterogeneous" societies are more probable to select less democratic constitutions and to achieve a low level of social welfare.

### 5.2.2 Society's size

The model, for analytical convenience, considers that the society is composed by a continuum of individuals. Assuming an infinite number of citizens is, always, a fair approximation of a real social environment with a large number of participants but it lacks the ability of offering intuition about the exact impact, if any, of the size of the given society on the findings of any analysis. The results presented in the above sections qualify the relaxation of the continuum assumption. That is, instead of studying a society composed by infinite members, one could conduct the same exercise with a society of a discrete number of individuals without the fear of being lead in a contradictory inference.

Avoiding unnecessary formalities, and employing the same argument used to establish the relationship between social distribution of ideal policies and the level of political communication, an intuition on what could be the impact of the size of a society on the formal results shall be offered at this point. Consider two societies of uneven size but of a "comparable" distribution of ideal points. By the latter, we mean that the distribution of ideal points of the smaller society could be viewed as a small sample approximation of the distribution of the ideal points of the larger one. If we assume that in both of them there exist the same number of randomly selected individuals that reveal their policy preferences, it is effortless to see that an individual that belongs in the "small" society can estimate more accurately the position of the median voter than any individual of the "large" one. A high-level of political communication is, thus, more likely to be observed in small

societies than in large ones and, according to the formal results, this would imply that smaller societies tend to select more democratic constitutions than larger ones. This theoretical affirmation is observed to be in complete concurrence with the empirical findings. Colomer (2007), for example, notes that democratic regimes are detected "in more than two thirds of those (countries) with less than one million inhabitants, and in more than one half of all small countries with less than 10 million inhabitants" while "only one third of large countries with more than 10 million inhabitants enjoys democratic regimes".

### 5.2.3 The Apolitical Society

The "apolitical society" term is conceptually traced back to the ancient Athenian division of the members of a city between citizens and privates. Citizens (polites) are those who are allowed to participate in the political process and, actually, do so, and privates (idiotes[10]) are those who are allowed to participate but decide not to do so and to concentrate on their individual activities. A society dominated by privates is an "apolitical society". The concept of the apolitical society may be described in a precise manner. That is, to attempt through its literal meaning to construct a distribution $\Phi(m')$ in $[0, 1]$ that captures the essence of the apolitical characteristic. That $\Phi(m')$ may be no other than the uniform distribution which would not restrict itself, as before, to a minimum quality criterion. That is, in apolitical societies, there is no specific reason for us to consider that $E(m') = m$.

An individual, which is in a society with a certain distribution of opinions, and which has some information about the preferences of the other individuals, will use this information and will have expectations on the position of the ideal policy of the median voter described by a distribution that will reflect the given information. On the other hand, a completely apolitical individual has no information about the preferences of the others and, thus, this individual will have expectations on the position of the ideal policy of the median voter described by a distribution that will reflect the nonexistence of information. The uniform distribution fits perfectly in this context.

To study the particularities of the apolitical society, which allows for $E(m') \neq m$, a comparative analysis between two large families of distributions of opinions will be held. The first family of distributions of opinions shall be named as the central distributions. These distributions share the common characteristic of having an equal measure of individuals in both sides of the segment $[0, 1]$. The other family that will be considered will be named as the extremist. Distributions that belong to this family have an unequal measure of individuals in both sides of the segment $[0, 1]$. That is, the largest measure of individuals will be close to one of the two extremes of the political axis. When the distribution of opinions in a society is central we shall call the society as a moderate society, and when the distribution of opinions in a society is extremist we shall call the society as an extremist society.

The first two questions that we shall try to answer are the following. Do apolitical societies tend to prefer dictatorship to direct democracy? Is there a related to the previous question, difference between moderate societies and extremist societies?

**Proposition 7** *Extremist apolitical societies tend to prefer "more often" dictatorship to direct democracy than the moderate apolitical societies do. That is, the measure of dictator types that are preferred to direct democracy is larger in extremist apolitical societies, than in moderate apolitical societies.*

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[10] The english word "idiot" is derivated from this word, and its degrading definition results from the fact that privates were not esteemed by their fellow citizens.

Apolitical societies in general are very much willing to accept dictatorship instead of direct democracy. As we demonstrated, the moderate apolitical society is the one with the highest aversion to dictatorship but even this type of apolitical society is willing to accept a large variety of dictators. What could be the conclusion of the above proposition is that it is more costly for an extremist society to be apolitical than for a moderate society. That is, because, moderate societies have the following privilege. Their apolitical characteristic leads to a correct expectation about the position of the ideal policy of the median voter. On the other hand, extremist societies are led by their apolitical nature to a fallacious expectation about the position of the ideal policy of the median voter which results to a further underestimation of the individuals expected utility by direct democracy.

## 5.3 The Complete Constitution

We have rigorously analyzed the cases of constitutions with "democracy restraints of power". It was, though noted in the introduction, that constitutions, apart form these restraints, contain, as well, the so called, "absolute restraints of power". As one can guess, the complete constitution is the union of these cases. In reality, constitutions bound the authority power in both manners. The example of the religious faith tolerance is indicating the essence of the absolute restraints and the confidence requirement (the right of an elected parliament to take all powers from a government), that exists in many representative democracy constitutions, captures the concept of the democracy restraints. As said, both kind of restraints may exist in the same constitution and, thus, the following definition could be descriptive of this case.

**Definition 2** *A complete constitution, that is, a constitution that includes both "absolute restraints of power" and "democracy restraints of power", is formally defined as:* $x^j = [s_1^j(m), s_2^j(m)], s.t. 0 \leq s_1^j(m) \leq s_2^j(m) \leq 1$ *and* $s_1^j(m) = \max\{\alpha^j, m - \varepsilon_1^j\}, s_1^j(m) = \min\{m + \varepsilon_2^j, \beta^j\}.$

As we see, any policy that belongs to the union $[0, \alpha^j) \cup (\beta^j, 1]$ can never be implemented for any possible distribution of opinions of the society. That is, there exist absolute restraints. And moreover the democracy restraints exist as well because the exact limits of the constitution $s_1^j(m), s_2^j(m)$ are a function of the ideal policy of the median voter and , thus, of the exact distribution of opinions of the society. It is effortless to confirm that by adding the absolute restraints concept in the previous analysis no further intuition would be gained, and it is, thus, let aside.

# 6 Discussion

## 6.1 Results

### 6.1.1 Economic and Political Science Literature

As pointed out in the section where the dominance of intermediate constitutions was discussed, if we take a closer look at the real world constitutions, we will see that there exist many differences among them, and, thus, comparisons with respect to democracy levels may result to be very difficult. Despite this fact, one could categorize them using some criteria.

Persson and Tabellini (2003) in their attempt to identify the economic effects of constitutions use four categories.

1. Presidential government with majoritarian electoral system

2. Presidential government with proportional electoral system

3. Parliamentary government with majoritarian electoral system

4. Parliamentary government with proportional electoral system

Presidential government regimes have a major difference with parliamentary government regimes. That is, in the first regimes the confidence requirement is absent and in the latter it is present. The absence of the confidence requirement in presidential governments implies that, once the president is appointed, the legislative body cannot recall the president powers before the fixed date of the next elections. In contrast to this, in the parliamentary government regimes, the confidence requirement is present, that is, at any point that the parliament can recall all powers from the executive authority. Obviously, using the concepts that were introduced in the paper, parliamentary government regimes appear to have more democracy restraints of power than presidential government regimes, as in the first the executive authority has absolute interest to satisfy the parliament in order to secure its survival.

Comparing the majoritarian electoral system with the proportional system, concerning the democracy restraints of power that they imply, one understands that, since proportionality guarantees a representation which corresponds to the social distribution of opinions, the proportional system imposes a higher level of democracy. To be more precise, the proportional electoral rule is the one that imposes fair representation of the social preferences in the parliament (if party A gathers 23% of the votes in the elections then it will get 23% of the seats in the parliament) and, hence, it enforces "tight" democracy restraints to the governments policies. That is, if the government deviates from socially preferred policies, then the parliament will withdraw its confidence. As the government is aware of this fact, implements policies that satisfy the parliament, and, thus, the society. The majoritarian electoral system, though, results in an unfair representation of the social preferences in the parliament (if party A gathers 23%, it could get more than 50% of the seats in the parliament). This misrepresentation leads the executive authority to act such that the parliament is satisfied (for the confidence not to be questioned) and, thus, to dissatisfy the society. The fact that the proportional system guarantees higher level of democracy than the majoritarian is valid also for presidential systems, as a president to be elected in the first one needs more than 50% of the votes in the elections, and in the second one this need not be so (U.S. presidential elections 2004).

So the ranking of the constitutions from 1 to 4 that was presented in the beginning of this section is not random at all. It is conducted in the democracy level terms that we described in the model. The ranking begins with the constitution that is has the lowest level of democracy (presidential government with majoritarian electoral system) and ends with the one that has the highest level (parliamentary government with proportional electoral system). One could claim that it is not obvious at all that a presidential/proportional system is less democratic than a parliamentary/majoritarian one. But what none could deny is that according to the above arguments, a presidential/majoritarian system is much less democratic than a parliamentary/proportional system. And the comparison between these two systems is of great interest in this part of the paper. Let's review, now, the findings of Persson and Tabellini (2003) concerning the relationship between constitutions and provision of public goods.

1. Presidential/majoritarian system:Very severe underprovision

2. Presidential/proportional system:Severe underprovision

3. Parliamentary/majoritarian system: Strong underprovision

4. Parliamentary/proportional system: Underprovision

Despite the fact that the writers judge their results as inconclusive, the relationship between the level of democracy in a constitution and the implemented policy becomes clear. Hence, the level of political communication in the period of constitutional design becomes crucial as a possible low level may result a constitution that will produce a long-term social harm.

Apart from the welfare implications that were predicted by the model and seem to be confirmed by Persson and Tabellini (2003) empirical study, another important real world observation, that re-enforces the mentioned findings, is the fact that "more democratic" constitutions have a higher "life expectancy". Data, undoubtedly, demonstrate that the duration of a constitution is positively related to the level of democracy that it involves. Colomer (2001) provides clear results of the above affirmation, by comparing the life length of constitutions of various democracy levels. This fact can only point to the evident truth that a society amends (or, even, completely changes) its constitution if and only if it expects a higher welfare from this amendment. And since less democratic constitutions are noticed to last less than more democratic, it is cognized that the welfare that they provide to the society is, as well, less than the later ones. This attitude that societies are observed to have towards their constitutions is, perfectly, in accordance with the findings of the present theoretical analysis.

### 6.1.2   The "European Constitution" Paradigm

Following a lengthy period of extended discussions on the issue of European unification, the Treaty establishing a Constitution for Europe (TCE) was, finally, signed by all union member governments in Rome (October, 2004). The TCE was never, though, put into practice as the internal ratification processes in France and Netherlands (by public referenda) failed to provide the desired, by their governments, outcome. This constitutional treaty was the natural next step in the direction of the supranational European project, which suggests that nation-states gradually and willingly give away parts of their sovereignty in the hands of the new supranational formation. The TCE failure lead to a more mild, in terms of unification ambition agreement; the Lisbon treaty. After the Irish public's denial to ratify this latter treaty as well, it becomes clear that unless the driving forces, which hide behind the public disapproval of these designed treaties, cease to exist, all equivalent attempts are to await the same fate as TCE.

The main criticism that the European project receives from its decriers is that there, already, exist a giant lack of democratic legitimacy in the union's decision making processes; the so called democratic deficit. Habermas (2006) notes that "at present, legitimacy flows more or less through the channels of democratic institutions and procedures within each nation state. This level of legitimation is appropriate for inter-governmental negotiations and treaties. But it falls short of what is needed for the kind of supranational and transnational decision-making that has long since developed within the institutional framework of the union and its huge network of committees. It is estimated that European directives already affect up to 70 per cent of the regulations of national agencies. But they lack any serious exposure to a timely and careful public opinion or will-formation in those national arenas that are today alone accessible to holders of a European passport". The fear of a further transition, from the current state to an even less democratic supranational entity, is ascribed to be the main factor of the European public aversion to any further unification acts.

If one accepts the above, the natural question that has to face is how can the level of democracy of the union's procedures be enhanced. In other words, and given that there is no previous experience of a peaceful creation of a supranational sovereign entity, which route should Europe follow so as to design a constitutional framework with the desired, by its people, level of democracy? Simitis (2008) points out that a bureaucratic attempt of copying existing democratic expression procedures from a nation-state and pasting them on the union is far from an adequate answer. In specific he notes that "democratic governance aroused as an issue in nation-states when a political community appeared in their territory, through the process of public dialogue. This public dialogue made the citizens realize that they have common interests and they should, thus, come up with ways to defend them. In the union, as well, the promotion of public dialogue and communication will assist the establishment of commonly accepted institutions of democracy in the supranational level. Public dialogue and communication will ensure that new forms of democratic governance shall appear in the meta-national era". In accordance with the present paper's spirit, this description, of how democratic governance arouses in a political environment, points out that the enhancement of democracy may not be achieved through technocratic channels, but only by the means of an elevated level of political communication and public interchange of opinions on topics of common interest.

The current state of the union, using the filter of the presented model, can be summarized by the following. Due to the fading communication and translocation costs, the European's public political communication level has gradually and steadily enhanced during the last years and, thus, its will to countersign the further unification process, with the present level of democracy, has decreased. If the European governments insist in promoting the European project, they should either act towards decreasing the level of political communication or towards a substantial democratization of the union's decision making institutions. And since any effort of decreasing the level of political communication is against the unification concept itself and, without any doubt, versus the core of the fundamental European principles, the only apparent way is to accept the demand of the "European society" to participate more actively, not just in the policy choice procedures of the union, but in the design of its decision making institutions as well.

## 6.2   Assumptions

Discussing the assumptions of the preceding analysis just before the conclusion of the paper, endangers a hysteron proteron criticism, but it guarantees a round and consummate evaluation of the importance and the breadth of the presented results validity. Therefore, a brief overview of the model's ingredients shall be offered at this point, so as to clarify the contribution of this study in the wide literature of democratic institutions.

Arrow's impossibility theorem, adopting a normative, but basic, line of reasoning ruled out democracy as a possible social preference aggregation mechanism. Moreover, democracy is attached to heavy participation and policy implementation[11] costs that encumber its realization. These two facts appear more than sufficient to explain the inexistence of extended democratic institutions in the social decision making procedure. In the present model the policy space and the individuals' preferences allow the society to adopt a democratic constitution (unlike Arrow's world) and the specific nature of individual preferences imply that direct democracy is the constitution (mechanism) that maximizes social utility. In addition to that there are no costs involved in the

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[11] Aghion, Alesina, Trebbi (2004)

democratic procedures. That is, in the current setup we ignore both factors that are perceived to be important for democratic failure but, yet, democracy (at its pure form) is hardly ever chosen as the society's decision making mechanism. Which suggests that the lack of an adequate level of political communication among individuals is by itself enough to explain why societies do not demand a high level of democracy. Of course, there can be no claim that the later reason for the absence of democracy is more important than the earlier ones. But the fact that in the lack of the other two, a low level of political communication is in the position of explaining the phenomenon alone indicates the present results' significance.

As far as the specific definition of a constitution is concerned, the driving forces of the presented formal representation of the "social agreement" can be traced back to its characteristics that are discussed in the conceptual substratum part of the paper. Constitutions, in economic literature, are, in principle, self stable electoral laws[12], while in reality they are much more than this. Constitutions define who and why has the power to do what and when. That is, a formal definition of a constitution must at least include which composite part of the sovereign entity has the formal power (in this paper's analysis the formal power holder is always the elite-authority) and how real power is distributed. By dividing the total body of members of the sovereign state into two entities (society and authority) and by assigning the formal power to one of these two entities exclusively (to the authority), the present definition of a constitution allows us to seek which is the "desired by the society" distribution of real power between the two entities.

Finally, throughout the paper it is assumed that the policy preferences of the elite-authority are common knowledge. It is obvious that in a real political environment this need not be so. There might, very well, exist a lack of information related to these policy preferences on behalf of the society that might influence the constitutional design process. Accepting, though, that the elite-authority is a much more "compact", in terms of policy preferences dispersion, entity and that its elite nature begets the necessary qualifications for discretion, makes the perfect information assumption evade heavy criticism. If the analysis, instead of a fixed authority ideal policy, considered a distribution of possible authority's ideal points in the policy space, the intuition behind the results would remain intact, no extra findings would be observed and, thus, such an augmentation of the model would just offer analytical perplexities without any further comprehension provision.

# 7    Concluding Remarks

This paper attempted to analyze, from an economist point of view, the effects that political communication may have on constitutional design and, thereafter, on social welfare. The level of political communication has been proved to have a positive relationship with the level of democracy that a society wishes to include in its constitution, and, moreover, it has been shown that the level of democracy involved in a constitution is, as well, positively related to the social welfare. Hence, a mighty correlation between the level of political communication and social welfare has been established that is in accordance with the teachings of many political philosophers.

It is moreover shown, that a society, which has in its disposal enough ideas to construct a large set of available constitutions, never chooses dictatorship, even if the level of political communication is very low. That suggests, that in a wide domain of political communication levels, the socially preferred constitution involves both dictatorial and democratic features, reaffirming the

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[12]Barbera, Jackson (2004)

Aristotelean description of the "ideal constitution" (according to this theory the "ideal constitution" involves morarchic, oligarchic and democratic elements).

The results of this paper are based on the idea of individualism and clearly illustrate the fact that individualism is enough to understand why democracy has grown to be so important in the history of mankind. Individualism leads to the selection of a democratic constitution provided that the society is composed of politically active individuals, and equivalently leads to tolerance of regimes that include little democratic institutions when the society is politically inactive. That is, individualism is not to blame for a society's failure to integrate democratic principles. The preference of non-democratic regimes from a majority in a society is not due to the lack of altruism, or lack of democrativeness, on behalf of the individuals but due to the lack of information about the social distribution of opinions. No society may provide a full support to democracy. A group of individuals that expects higher utility from rather dictatorial constitutions shall always exist. And in these societies, where this group forms a majority, only an increase of the level of political communication may turn this group of individuals from being a majority to being a minority.

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# 9    Appendix (Proofs)

**Proposition 1.**    Define $Z(i) = \int_0^1 |i - b^*(r,x^j)| d\Phi(m') - \int_0^1 |i - b^*(r,x^k)| d\Phi(m')$. Notice that, $b^*(r,x^j) = b^*(r,[s_1^j(m), s_2^j(m)]) = b^*(r,[\max\{0, m - \varepsilon_1^j\}, \min\{m + \varepsilon_2^j, 1\}]) = b^*(r,\varepsilon_1^j, \varepsilon_2^j, m)$. By setting $r, \varepsilon_1^j, \varepsilon_2^j$ constant we have $b^*_{r,\varepsilon_1^j,\varepsilon_2^j}(m) = \psi$ and we can define $b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(\psi) = m$. This function $b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(\psi)$, is well defined for any $\psi \in (-\infty, r) \cup (r, +\infty)$ and has the following form. If $\psi < r$, then $b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(\psi) = \psi - \varepsilon_2^j$ and if $\psi > r$, then $b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(\psi) = \psi + \varepsilon_1^j$. Notice that for $\psi < \varepsilon_2^j$ we have that $b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(\psi) < 0$ and for $\psi > 1 - \varepsilon_1^j$ we have that $b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(\psi) > 1$. This will create no problems as $m'$ is distributed in $[0,1]$, that is, $\Phi(\psi) = \Phi(0) = 0$ for any $\psi < 0$ and equivalently $\Phi(\psi) = \Phi(1) = 1$ for any $\psi > 1$. Consider now that $Z(m) > 0$, which is identical to $Eu_m(b^*(r,x^k)) > Eu_m(b^*(r,x^j))$. If we demonstrate that there exist a measure of $i$'s in $F(i)$ at least equal to $1/2$, such that, for these $i$'s $Z(i) > 0$ then we are done. To show this, we will need the derivative of $Z(i)$. $\frac{\partial Z(i)}{\partial i} = Z'(i) =$

$$\int_0^{b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(i)} d\Phi(m') - \int_{b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(i)}^1 d\Phi(m') - \int_0^{b^{*-1}_{r,\varepsilon_1^k,\varepsilon_2^k}(i)} d\Phi(m') + \int_{b^{*-1}_{r,\varepsilon_1^k,\varepsilon_2^k}(i)}^1 d\Phi(m') = 2\int_{b^{*-1}_{r,\varepsilon_1^k,\varepsilon_2^k}(i)}^{b^{*-1}_{r,\varepsilon_1^j,\varepsilon_2^j}(i)} d\Phi(m').$$

If $m > r$, and $Z'(m) = 2\int_{m+\varepsilon_1^k}^{m+\varepsilon_1^j} d\Phi(m') \geq 0$ then we get that $\varepsilon_1^j \geq \varepsilon_1^k$ which suggests that $Z'(i) \geq 0$ for all $i > r$.

We, thus, have that $Z(i) \geq Z(m) > 0$ for all $i \geq m$. Now if $m > r$, and $Z'(m) = 2 \int\limits_{m+\varepsilon_1^k}^{m+\varepsilon_1^j} d\Phi(m') < 0$

we get that $\varepsilon_1^j < \varepsilon_1^k$ which suggests that $Z'(i) < 0$ for all $i > r$. This implies that $Z(\hat{i}) \leq Z(\dot{i})$ for all $\hat{i} > \dot{i} > r$. And obviously $Z(1) \leq Z(i)$ for all $i > r$. But $Z(1) = E(b^*(r,x^k)) - E(b^*(r,x^j))$, and if $E(b^*(r,x^k)) > E(b^*(r,x^j))$ then obviously $Z(i) > 0$ for all $i > r$. Now what if $E(b^*(r,x^k)) < E(b^*(r,x^j))$. Since $Z'(m) < 0$ we have $Z(i) \geq Z(m) > 0$ for all $i \in (r,m)$. If $\varepsilon_2^k \leq \varepsilon_2^j$ we have that $Z'(i) \leq 0$ for all $i < r$ and thus $Z(i) \geq Z(m) > 0$ for all $i \in [0,m)$. If $\varepsilon_2^j < \varepsilon_2^k$ we have that $Z'(i) \geq 0$ for all $i < r$ and, thus, $Z(0) \leq Z(i)$ for all $i < r$. But we have assumed that $E(b^*(r,x^k)) < E(b^*(r,x^j))$ which implies that $Z(0) > 0$ and hereupon $Z(i) > 0$ for all $i < m$. Notice that if $E(b^*(r,x^k)) = E(b^*(r,x^j))$ then $Z(i) \geq 0$ for all $i \in [0,1]$. By symmetry we can show that the proposition holds for $Z(m) > 0$, $m < r$, for $Z(m) < 0$, $m > r$ and for $Z(m) < 0$, $m < r$. We, thus, conclude that if a constitution $x^* \in \Omega$ is such that $Eu_m(b^*(r,x^*)) \geq Eu_m(b^*(r,x^j))$ for every $x^j \in \Omega$, then no $x^j \in \Omega$ can receive a majority of votes when it is confronted with $x^* \in \Omega$ in a public voting procedure. $\blacksquare$

**Proposition 2.** As it has been demonstrated in the previous proposition, if the median voter prefers $x^m$ to $x^r$, then $x^m$ is socially preferred to $x^r$. That is, for direct democracy $x^m$ to be preferred to dictatorship $x^r$ we need to have $Eu_m(b^*(r,x^m)) > Eu_m(b^*(r,x^r))$. By definition of $x^m$ and $x^r$, $b^*(r,x^m) = m$ and $b^*(r,x^r) = r$. Then, $Eu_m(b^*(r,x^m)) = -E|m-m'|$ and $Eu_m(b^*(r,x^r)) = -E|m-r|$. Since $r$ is assumed to be common knowledge, $-E|m-r| = -|m-r|$. But as $m = E(m')$ we can rewrite $-E|m-m'|$ as $-E|E(m') - m'| = -MD(m') = P(\Phi(m'))$. That is, the median voter's expected utility from direct democracy is equal to the level of political communication at the given society. So, $Eu_m(b^*(r,x^m)) > Eu_m(b^*(r,x^r))$ implies that $P(\Phi(m')) > -|m-r|$, which, by the properties of absolute values, is the same as $r < m + P(\Phi(m'))$ and $r > m - P(\Phi(m'))$. $\blacksquare$

**Proposition 3.** If $I(\Phi(m'),r) = -1$, then, obviously $P(\Phi(m')) < 0$. Consider $r < m$ (for $r > m$ one can offer an equivalent proof). If dictatorship is preferred to direct democracy then the intermediate constitution $x^j = [s_1^j(m), s_2^j(m)]$, such that $s_1^j(m) = \max\{0, m - [1-(m+r)/2)]\}$, $s_2^j(m) = \min\{m+r,1\}$ is strictly preferred to dictatorship. This is because $x^j$ will give the same utility to the median voter, as dictatorship, with probability $\Phi(1 + (r-m)/2)$ and will offer higher utility to the median voter with probability $1 - \Phi(1 + (r-m)/2)$. Hence, by proposition 2, $x^j$ will be socially preferred to $x^m$ and $x^r$. If direct democracy is preferred to dictatorship then the intermediate constitution $x^j = [s_1^j(m), s_2^j(m)]$, such that $s_1^j(m) = \max\{0, m\}$, $s_2^j(m) = \min\{m+r,1\}$ is strictly preferred to direct democracy. This is because $x^j$ will give the same utility to the median voter, as direct democracy, with probability $1 - \Phi(r)$ and will offer higher utility to the median voter with probability $\Phi(r)$. Hence, by proposition 2, $x^j$ will be socially preferred to $x^m$ and $x^r$. So in both cases, we can identify an intermediate constitution $x^j \in \Omega$ such that, it is socially preferred to $x^m$ and $x^r$. Which is enough to prove the validity of the first part of the proposition. Now, if $I(\Phi(m'),r) = 0$ we know that either $\Phi(r) = 0$, or that $\Phi(r) = 1$. Using the symmetry property of $\Phi(m')$ we observe that $|m-r| > |m-m'|$ for all $m' \in (\alpha,\beta)$. That is, $Eu_m(b^*(r,x^m)) > Eu_m(b^*(r,x^r))$. If we assume $r \leq m$ (the proof is symmetric for the $r \geq m$ case) the then any intermediate constitution $x^j = [s_1^j(m), s_2^j(m)]$, such that $s_1^j(m) = \max\{0, m - \varepsilon_1^j\}$, $s_2^j(m) = \min\{m+\varepsilon_2^j,1\}$ with either $\varepsilon_1^j > 0$ or $\varepsilon_2^j > 0$ cannot be socially preferred to $x^m$. If $\varepsilon_1^j \geq \beta-\alpha$ and $\varepsilon_2^j \geq 0$ then it is obvious that $|m - b^*(r,x^j)| > |m-m'|$ for all $m' \in (\alpha,\beta)$. If $\beta - \alpha > \varepsilon_1^j > 0$ and $\varepsilon_2^j \geq 0$ then $Eu_m(b^*(r,x^m)) - Eu_m(b^*(r,x^j)) = -\int\limits_0^1 |m-m'| d\Phi(m') + \int\limits_0^1 |m - m' + \varepsilon_1^j| d\Phi(m') =$

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$$-\int_0^m \{|m-m'|-|m-m'+\varepsilon_1^j|\}d\Phi(m') - \int_m^{m+\varepsilon_1^j/2} \{|m-m'|-|m-m'+\varepsilon_1^j|\}d\Phi(m') - \int_{m+\varepsilon_1^j/2}^1 \{|m-m'|-|m-$$

$$m'+\varepsilon_1^j|\}d\Phi(m') = \int_0^m \varepsilon_1^j d\Phi(m') - \int_m^{m+\varepsilon_1^j/2} \theta d\Phi(m') - \int_{m+\varepsilon_1^j/2}^1 \varepsilon_1^j d\Phi(m') > 0 \text{ as for any } m' \in (m, m+\varepsilon_1^j/2)$$

we have that $\theta < \varepsilon_1^j$ where $\theta = |m-m'| - |m-m'+\varepsilon_1^j|$. That is, if $I(\Phi(m'), r) = 0$, then $x^* = x^m$. ∎

**Proposition 4.** Consider that $\alpha = 0$ and $\beta = 1$. By proposition 1, the Condorcet winner constitution of $\Omega$, $x^* = argmax Eu_m(b^*(r, x^j))$. If $r < m$ then $Eu_m(b^*(r, x^j)) = -\int_0^1 |m - b^*(r, x^j)|d\Phi(m') =$

[13] $-\int_0^{r-\varepsilon_2^j}(m-(m'+\varepsilon_2^j))d\Phi(m') - \int_{r-\varepsilon_2^j}^{r+\varepsilon_1^j}(m-r)d\Phi(m') - \int_{r+\varepsilon_1^j}^{m+\varepsilon_1^j}(m-(m'-\varepsilon_1^j))d\Phi(m') - \int_{m+\varepsilon_1^j}^1 (m' -$

$\varepsilon_1^j - m)d\Phi(m') = -(1/2)(\varepsilon_2^j)^2 + r\varepsilon_2^j - (1/2)(\varepsilon_1^j)^2 + (r + 1 - 2m)\varepsilon_1^j + (-m^2 + m - 1/2)$. But as $m = E(m') = 1/2$, we finally get that $Eu_m(b^*(r, x^j)) = -(1/2)(\varepsilon_2^j)^2 + r\varepsilon_2^j - (1/2)(\varepsilon_1^j)^2 + r\varepsilon_1^j - 1/4$, which is strictly concave and its global maximum is at the point $(\varepsilon_1^*, \varepsilon_2^*) =$ [14] $(r, r)$. By symmetry, if $r > m$ we get $(\varepsilon_1^*, \varepsilon_2^*) = (1-r, 1-r)$. Moving from $[\alpha, \beta] = [0, 1]$ to any other $[\alpha, \beta] \subset [0, 1]$, and since $I(\Phi(m'), r) = -1$, which suggests that $r \in (\alpha, \beta)$, we observe that the maximization program in reality remains unchanged. That is, for $r < m$, as for the $[\alpha, \beta] = [0, 1]$ case, $\varepsilon_1^* = \varepsilon_2^* = r - \alpha$, and for $r > m$ we get $\varepsilon_1^* = \varepsilon_2^* = \beta - r$. Notice that $\alpha$ and $\beta$ are strictly related with the level of political communication $P(\Phi(m'))$, as for uniform distributions in $[\alpha, \beta]$, $MD(m') = (\beta - a)/4$. Moreover, we have that $m = E(m') = (\alpha + \beta)/2$ and, thus, $\alpha = m + 2P(\Phi(m'))$ and $\beta = m - 2P(\Phi(m'))$. Therefore, if $r < m$ we obtain, $\varepsilon_1^* = \varepsilon_2^* = r - m - 2P(\Phi(m')) = -|m - r| - 2P(\Phi(m'))$, and for $r > m$ we get $\varepsilon_1^* = \varepsilon_2^* = m - 2P(\Phi(m')) - r = -|m - r| - 2P(\Phi(m'))$. ∎

**Proposition 5.** Assume $r < m$. Define $m_1, m_2$ such that $F_1(m_1) = 1/2$ and $F_2(m_2) = 1/2$. Obviously $m_1 = m_2$ but we shall continue distinguishing them to avoid confusion. If $I(\Phi_1(m'), r) = I(\Phi_2(m'), r) = 0$ then by proposition 3 we have that $x_1^* = x_2^* = x^m$. That is, $u_{m_1}(b^*(r, x_1^*) = u_{m_2}(b^*(r, x_2^*)) = 0$ and, thus, $u_{F_1(i)}(b^*(r, x_1^*) = u_{F_2(i)}(b^*(r, x_2^*)$ for any $\Phi_1(m')$ and $\Phi_2(m')$. If $I(\Phi_1(m'), r) = 0$ and $I(\Phi_2(m'), r) = -1$ (equivalent proof for the $I(\Phi_1(m'), r) = -1$ and $I(\Phi_2(m'), r) = 0$ case) then $P(\Phi_1(m')) > P(\Phi_2(m'))$ and, by proposition 3, $x_1^* = x^m$ and $x_2^* \neq x^m$. That is, $u_{m_1}(b^*(r, x_1^*) = 0 \geq u_{m_2}(b^*(r, x_2^*))$, and, thus, $u_{F_1(i)}(b^*(r, x_1^*) \geq u_{F_2(i)}(b^*(r, x_2^*))$. If $I(\Phi_1(m'), r) = -1$ and $I(\Phi_2(m'), r) = -1$, then by proposition 4, $b^*(r, x_1^*) = b^*(r, x_2^*) = r$, and, thus, $u_{F_1(i)}(b^*(r, x_1^*) = u_{F_2(i)}(b^*(r, x_2^*))$, if $P(\Phi_1(m')) \leq -|m - r|$ and $P(\Phi_2(m')) \leq -|m - r|$. If $P(\Phi_1(m')) > -|m - r|$ and $P(\Phi_2(m')) \leq -|m - r|$ (equivalently for $P(\Phi_1(m')) \leq -|m - r|$ and $P(\Phi_2(m')) > -|m - r|$), then $b^*(r, x_1^*) = m + |m - r| + 2P(\Phi_1(m'))$ and $b^*(r, x_2^*) = r$. Observe that $|m - b^*(r, x_1^*)| < |m - b^*(r, x_2^*)|$ and, thus, $u_{F_1(i)}(b^*(r, x_1^*) > u_{F_2(i)}(b^*(r, x_2^*))$. Finally, if both $P(\Phi_1(m')) > -|m - r|$ and $P(\Phi_2(m')) > -|m - r|$, and, say $P(\Phi_1(m')) > P(\Phi_2(m'))$, then $b^*(r, x_1^*) = m + |m - r| + 2P(\Phi_1(m')) > m + |m - r| + 2P(\Phi_2(m')) = b^*(r, x_2^*)$. Hence, $|m - b^*(r, x_1^*)| < |m - b^*(r, x_2^*)|$ and, thus, $u_{F_1(i)}(b^*(r, x_1^*) > u_{F_2(i)}(b^*(r, x_2^*))$. For $r > m$ one may offer a symmetric proof. ∎

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[13] We assume that in equilibrium $\varepsilon_2^* \leq r$ and $\varepsilon_1^* \leq 1/2$. If it is not so, we should be able to find $\varepsilon_1^j > 1/2$ and/or $\varepsilon_2^j > r$ such that, $Eu_m(b^*(r, x^j)) > Eu_m(b^*(r, x^*))$, where $x^*$ is the condorcet winner constitution identified by the maximization programe of the median voter.

[14] We observe that it is impossible to find $\varepsilon_1^j > 1/2$ and/or $\varepsilon_2^j > r$ such that, $Eu_m(b^*(r, x^j)) > Eu_m(b^*(r, x^*))$, as for any $x^j$ such that $\varepsilon_1^j = r$, $\varepsilon_2^j > r$ we have $Eu_m(b^*(r, x^j)) = Eu_m(b^*(r, x^*))$ and for any $x^j$ such that $\varepsilon_1^j > r$, $\varepsilon_2^j \geq r$ we have $Eu_m(b^*(r, x^j)) < Eu_m(b^*(r, x^*))$.

**Proposition 6.** If two constitutions promise the same expected policy outcome $E(b^*(r, x^j)) = E(b^*(r, x^k))$ and if $Eu_m(b^*(r, x^k)) > Eu_m(b^*(r, x^j))$ then it is not hard to see that $Z'(i) \geq 0$ for $i < r$ and $Z'(i) \leq 0$ for $i > r$. This implies that $\varepsilon_1^k > \varepsilon_1^j$ and that $\varepsilon_2^k > \varepsilon_2^j$. Hence, by the proof of proposition 1, we get that $Eu_i(b^*(r, x^k)) \geq Eu_i(b^*(r, x^j)), \forall i \in [0, 1]$. This is equivalent to

$$-\int_0^1 |i - b^*(r, x^k)|d\Phi(m') \geq -\int_0^1 |i - b^*(r, x^j)|d\Phi(m'), \forall i \in [0, 1].$$ Since $E(b^*(r, x^j)) = E(b^*(r, x^k)) \in$

$[0, 1]$ we have $-\int_0^1 |E(b^*(r, x^k)) - b^*(r, x^k)|d\Phi(m') \geq -\int_0^1 |E(b^*(r, x^j)) - b^*(r, x^j)|d\Phi(m')$ and finally

$MD(b^*(r, x^k)) \leq MD(b^*(r, x^j))$. Equivalently, $-\frac{(\varepsilon_1^j)^2 + (\varepsilon_2^j)^2}{2} > -\frac{(\varepsilon_1^k)^2 + (\varepsilon_2^k)^2}{2}$, which suggests $D(x^j) > D(x^k)$, that is, the level of democracy involved in the decision making process in constitution $x^j$ is higher than that of constitution $x^k$. ∎

**Proposition 7.** Define the set of dictators that are preferred to direct democracy as $(r_e^1, r_e^2)$ for the moderate society and $(r_o^1, r_o^2)$ for the extremist society and the measure of of dictators that are preferred to direct democracy as $c(r_e^1, r_e^2) = r_e^2 - r_e^1$ for the moderate society and $c(r_o^1, r_o^2) = r_o^2 - r_o^1$ for the extremist society. From definition the ideal policy of the median voter of the moderate society, $m_e = 1/2$. Assume also that the ideal policy of the median voter of the extremist society, $0 < m_o < 1/2$ (for extremist societies with $1/2 < m_o < 1$ one can offer an equivalent proof). We compute the expected utility of the median voters by direct democracy and we have: $Eu_{m_e}(b^*(r, x^m)) = -1/4$, $Eu_{m_o}(b^*(r, x^m)) = -m_o^2 + m_o - 1/2$. As $0 < m_o < 1/2$ we have that $-m_o^2 + m_o - 1/2 < -1/4$ and thus, $Eu_{m_o}(b^*(r, x^m)) < Eu_{m_e}(b^*(r, x^m))$. For a dictatorship to be preferred in the moderate society we need to have $Eu_{m_e}(b^*(r, x^r)) > Eu_{m_e}(b^*(r, x^m))$ and as $Eu_{m_e}(b^*(r, x^r)) = -|m_e - r|$ we need $-|m_e - r| > -1/4$. That suggests $(r_e^1, r_e^2) = (1/4, 3/4)$ and that $c(r_e^1, r_e^2) = 1/2$. For a dictatorship to be preferred in the extremist society we need to have $Eu_{m_o}(b^*(r, x^r)) > Eu_{m_o}(b^*(r, x^m))$ and as $Eu_{m_o}(b^*(r, x^1)) = -|m_o - r|$ we need $-|m_o - r| > -m_o^2 + m_o - 1/2$. That suggests $(r_o^1, r_o^2) = (\max\{0, 2m_o - m_o^2 - 1/2\}, m_o^2 + 1/2)$ and that $c(r_o^1, r_o^2) > 1/2$. ∎