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INSTITUTIONS AND INSTITUTIONAL EVOLUTION

I. - Introduction

There is a long and broad tradition in the institutional analysis. Scholars along all social sciences have devoted their research to the study of institutions. This interdisciplinarity provides an extremely rich quantitative and qualitative development in the topic. Nevertheless, the dominant contemporary economic theory ignores the institutional tradition. Institutions are relegated, if at all, to footnotes and are considered as a fixed, well-defined box. Within this box the neoclassical conceptualization develops a stylized model of individual behavior. However, as every student of institutions knows, this box has multiple forms that derive in multiple types of influences over the individual behavior. Moreover, the box changes and generates changes in its contents.

The present paper is focussed on the study of this box; it will be analyzed and defined. By so doing, it will be shown why the institutional analysis provides an ideal framework to deal with a critical review of the neoclassical model. Once the analyst takes the effort of looking at the institutional structure and its evolutionary processes, some of the assumptions made in the neoclassical model and widely accepted appear incoherent.

The organization of the paper is as follows. In section II the meaning of institutions will be explored. It will be argued about the necessity of delimiting the boundaries of institutions and a proposal will be developed. It will also be pursued in this section the problem of the institutional representation. The concept of evolution and its suitability for the study of institutional change will be analyzed in section III. Section IV deals with the concluding remarks.

II. - The meaning of institutions

Institutions and Organizations

A first step in the institutional analysis is to leave clear the object of study. In this paper the focus is on institutions rather than organizations. The former will be analyzed in subsequent sections. The latter are well defined structures or bodies (e. g., universities, foundations, firms, congresses, or senates) with a practically null grade of abstraction, and seen as coherent units of analysis. Organizations are independent entities in a wider and more complex institutional setting. Therefore, organizations are regarded here as a unique and compact entity with clear objectives and interaction patterns within a wider institutional arrangement.

But this classification is not so easy. When the analysis is focused on the organization itself, not as a unit of a wider net, then it should be understood as a heterogeneous structure with different and competing individuals. Then the entity is structured through a configuration of rules and norms applying to the pattern of interaction among individuals in it. Therefore, it is not correct to classify a structure or body as an organization or institution, but depending on the issue being studied, the structure or the body will be an organization or an institution.

A couple of examples will help to clarify this point. Consider a Common-Pool Resource[1] (C-PR) structure. A C-PR may be governed by a community of individuals. In the process of self-government, the community that is harvesting the C-PR is involved in the development of the institutional arrangement; the individuals are establishing some rule and norm configurations. To this extent, the individuals compounding the community are the units of analysis and the C-PR setting, the institution. On the other hand, when considering C-PR structures and other structures within an institution like the market, these entities play the role of organizations pursuing some common purpose. In this context, the C-PR structure is understood as a compact entity with a defined set of goals, incentives and disincentives; the C-PR structure is an organization. The firm constitutes another salient example. When the firm is considered in the wider net of the market, it constitutes an organization, a well-defined structure. But when the firm is studied in itself is no longer a unique entity with a common will, but an institution involving different heterogeneous groups of individuals with different interests, incentives, and objectives to pursue.

The institutional boundaries

A definition is an attempt to capture the essential meaning and characteristics of a word or statement. In the case of institutions this attempt becomes an extremely difficult one. The complexity inherent to the concept makes easy to overstate or understate some features. For this reason, the theoretical approach to the institution is accomplished here by stating first the necessary characteristics to be considered.

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[1] It is used here the definition of Ostrom, Gardner, and Walker (1994, p. 6). There, a Common-Pool Resource is characterized by two attributes: "the difficulty of excluding individuals from benefiting from a good and the subtractability of the benefits consumed by one individual from those available to others."

- Institutions are human creations. Some of the features of an institution are the product of a conscious effort by human beings, but more importantly, institutions are created and changed by unconscious human efforts (this point will be clarify in subsequent sections). An institution to be considered as such must be the product of the human action. Otherwise, it is a *natural or physical system* where human beings either do not interact, or when they interact, the influence that the system exercises over them is not more than imposing some physical constraints.

- Group of individuals. Institutions apply to a defined group of individuals. This group may be compounded from two people (a couple) to society in general. Hence, an institution must apply and be shared by a group of individuals, not by a single individual. The personal code of honor of an individual, for example, is influenced by and may influence the institutional arrangement, however, it is not an institutional component since it is not necessarily shared by other individuals. To this extent, the code of honor shapes the individual's behavior, but nevertheless must be separated from the institutional arrangement because it pertains to the personal sphere. This is a clear and strict boundary to classify what are constituting institutions and what are not. When the same code of honor applies to a set of individuals—e. g., a team, a department—then it is an institutional component shared by the relevant community.

- Time dimension. An essential characteristic in institutions is that they apply to repeated situations over time. There are not institutions created for a single event in a specific moment of time. They apply to repeated situations and are attached to the specificities of the period of time that are taking place in.

- Place dimension. Institutions take place in specific spatial circumstances. Therefore, the physical environment is determinant for the institutional arrangement. It is important to stress that the physical environment not only constraints institutions by its physical limitations, but also plays a crucial role in the determination of the institutional structure. The institution of hospitality, for instance, is not the same in a mild physical environment like a village, as in a harsh one like the desert. On the other hand, the institutional arrangement also plays a role in the change of the physical environment. This is a feedback relationship.

- Rules and norms. This is the core of the institutional definition. Institutions are defined by configurations of rules and norms, that is, by prescriptions shared by the relevant community (Crawford and Ostrom, 1995). The members of the community must understand these prescriptions. As it will be analyzed bellow, otherwise, there are not common expectations and this may provoke a source of tension that may lead to an institutional change.

- Monitoring and enforcement system. Rules and norms must be monitored and enforced by some body of agents specialized in it; or/and by society; or/and internally, at the individual level. Monitoring and enforcement systems are not more than rules governing rules.

- Nested levels. Institutions are specified through the interaction of different institutional levels. For instance, in a self-governed C-PR the configuration of rules and norms for the group of individuals who meet on a day-by-day basis harvesting the resource, is completely different to the configuration of rules and norms for the group of individuals who make legally possible the self-governance of the C-PR (e. g., national government). It is evident that both groups of individuals, rules and norms are influencing the same institutional structure, however, the role, power, task, objectives, incentives, interaction pattern, individuals, rules, and norms are different. Hence, it is useful for analytical purposes to differentiate the levels within the institution according to some criteria. Kiser and Ostrom (1982, p. 184) identify three levels of analysis according to the task developed: "One is the *operational level*, which explains the world of action. The second is the *collective choice level*, which explains the world of authoritative decision-making. The third is the *constitutional level*, which explains the design of collective choice mechanisms." It is welcomed here this classification and added one more level: the "higher level order."

- Nested institutions. Institutions are not isolated structures but parts of a wider and complex institutional net. The pattern of interrelation of these institutions provides a "higher level order" in society. Each institution, then, compounds a part of the "higher level order" which at the same time influences and shapes the ongoing evolutionary process of each institution.

- Consequences of institutions. Two broad levels of consequences are identified here. In the first level, institutions enhance routines, i. e., human actions that do not require a conscious and deliberate choice. On the other hand, institutions also influence the individual deliberated choice through incentives and disincentives. In a second level, institutions have the effect of creating a stable pattern of interaction that is internalized by the individuals. This provides the grounds to create expectations in order to make predictable, to some degree, the future interactions within the bounds of the institutional arrangement. That is, institutions reduce uncertainty.

Now the boundaries of the conceptualization of institutions developed here become clear. Some institutional theorists have argued that other features like heuristics, norms brought up from the personal level, and strategies are constituents of institutions. In the remaining of the section it is argued why this is not appropriate.

Heuristics are cognitive short cuts or rules of thumb guiding behavior in specific contexts. Therefore, heuristics are behavioral processes facilitating choice to the individual but not any kind of shared prescription by the community. Even in the case where heuristics are shared by a community of individuals, they cannot be categorized as institutional components because they apply to behavioral processes facilitating the process of choice and are attached to the personal sphere. Only when some prescription is associated to the heuristic it can be understood as part of the institutional configuration, but then, the initial heuristic is a social shared norm, not a rule of thumb guiding behavior.

For a norm to be considered as part of the institutional configuration must be shared and understood by all the relevant individuals of the pertinent collectivity. Norms brought up from the personal level, by definition, do not necessarily fulfill this requirement.

Strategies are algorithms providing decisions to every possible contingency that may appear in a specific choice situation. Hence, strategies are the outcome of individual behavior and are not components of the institutional configuration.

Though these three concepts are left out from the strict definition of institutions, it is not stated here that their influence over the institutional configuration is null. On the contrary, the three concepts through different ways influence and are influenced by the institutional evolution. The way these influences take form will be shown in the coming sections.

Representing Institutions

Game theory is used by many institutionalists to reflect the effect institutions have upon an agents' behavior. The strategic behavior as well as the incentive structure of a configuration of rules and norms, it is claimed, is well accomplished using game theory as a tool.

Hurwicz (1996, 1994, 1993) develops a very refined representation through game theory. First, Hurwicz avoids the payoffs of the individual in order to set aside the "player's feelings" arguing that feelings are not part of the institutional arrangements. Therefore, he introduces the notion of *game-forms* where agents, alternatives, and outcomes are represented. Hurwicz also includes in his representation the role of the physical environment—although only in the narrow sense of constituting a constraint over the institution—stating that institutions must be represented not only by the game-form, but as the outcome of the relationship between the game-form and the physical environment (being Hurwicz's physical environment the existing resource endowment and the current state of technology).

Although this representation shows to be very useful for some analytical studies, it is not free of limitations and theoretical problems. First, a game-form is just a set of individuals, a set of alternatives, an outcome function, and the corresponding outcomes. When social norms are considered, the limitations of the game-form become important. It is difficult to think in an objective and clear way of introducing social norms in the game-form. Game-forms may fairly represent some economic institutions where only objective rules take place, but has difficulties with more complex economic and social institutions. Second, game-forms are not able to account with the fact that individual's preferences are not fixed, are influenced by the institutional structure, and exercise effects over the institutional structure.[2]

[2] Moreover, the use of games or game-forms is theoretically problematic to the extent that only the outcome of the rules are represented, not the rules themselves. When a game or game-form shows a set of players, it is not the rule that is represented, but the outcome of the rule. The problems arise when the same outcome—e. g., set of players—may be obtained by different rules. These differences in rules may have consequences at other levels of analysis, and the game or the game-form is not able to accomplish with this.

Hence, although game theory may be a powerful tool to represent some of the important features of an institutional structure, it must be considered the possibility that when more complex social or economic institutions are studied, games or game-forms may be substituted by other lexicographic representations.

A Static Diagram

Once institutions are considered it is necessary to look at the interaction processes among institutions, the individual, and society. From this perspective a framework to review critically the economic theory emerges. The wide accepted assumptions of the neoclassical model are analyzed in a broad context showing their appropriateness, or not. In the next paragraphs commenting on Fig. 1 the neoclassical model is not bilaterally contrasted; however, the conclusions will appear evident.

Fig. 1 represents a part of a complete dynamic process that will be analyzed in section III. There, it is considered one institutional level. The rest of the levels would be represented in a similar fashion and it would be necessary to study the interconnections among the institutional levels. This will not be developed here since the objectives that are being pursued in this paper do not require this kind of analysis. By so doing, unnecessary complexity is avoided.

[[Fig. 1]]

INSERT FIGURE 1

The rectangle involving the entire graph labeled "*physical environment*" shows its influence as a constraint, but also shows the feedback with the institutional structure, personal sphere, preferences, outcome function, and outcomes. For instance, the institutional arrangements in an irrigation C-PR setting are shaped by the physical circumstances. Areas with special periods of drought face different rules and norms concerning the flexibility around violation of rules of appropriation than areas where the level of available water is not the crucial problem. On the other hand, the configuration of rules and norms, through their influence over the outcomes, affect the physical characteristics of the environment. If the configuration of rules and norms is an incentive to a high level of water appropriation this might provoke influences in the dryness of the region.

Institutions shape the structure, influence—but not always determine—the personal sphere of the individuals, their preferences, the outcome function, the selection mechanisms and the payoff functions. Institutions influence and are influenced by the individuals' personal sphere. The personal history of individuals, for example, is shaped by the institutions they have been interacting in. How the personal sphere exercises its influences over the institutions is analyzed in the next section. Here, it is worthwhile to stress the relationship between institutions and what

has been called the selection mechanism. The configuration of rules and norms in specific circumstances allows and is an incentive to the establishment of certain social norms that serve as the basis for the selection mechanism. An example to which the literature is paying increasing attention is reciprocity (see Ostrom (1998) for references and discussion). Reciprocity is a social norm that may be used as the selection mechanism in a decision setting.

In this static diagram the *"personal sphere"* exercises influence over the preferences of the individual, the selection mechanism, and the payoff function. It appears evident that the personal history, feelings, personal norms, tastes, will, creativity, etc., will affect the preferences and the way the outcomes are evaluated. The personal history and hence the personal experience serves as a determinant factor in the selection mechanism. The individual will use one rule of thumb (for instance) or another depending on the success of them in past episodes. If one rule of thumb has been shown to be relatively successful in similar settings, it is plausible that the individual will use it as the selection mechanism.

The remainder of the graph shows the typical interactions of choice, outcomes, and payoffs; however, the figure shows other crucial aspects. First, preferences are not externally given, but determined by two essential factors: institutions and personal sphere. The dynamics between these two factors and their relationship with the preferences of the individual will be explained in the next section.

Second, the figure takes the individual as the unit of analysis. Nevertheless, as it should be deduced from the first subsection in section II, the individual preferences apply not only to human beings, but depending on the level of analysis, to this compact entities or bodies labeled organizations.

The community or general society in which the institution is located, is represented in the configuration of rules and norms and in the personal sphere. Both are shaped by the interaction with other individuals within the relevant collectivity. Moreover, as both concepts influence the preferences of the individual, these preferences are not determined only at the individual level but at the level of society. To neglect the influence of society over the individual would be absurd.

Third, individual choice is not an action taken in a vacuum independent of the "external world," but to some extent it is shaped by a complex interaction pattern. As it has been argued in previous sections, individuals act in certain circumstances according to routines. These routines are the outcome of the institutional structure and the personal sphere (especially from past history). On the other hand, the individual as a human being, and according to his or her idiosyncratic peculiarity, is able to choose in accordance to his or her will, imagination, or creativity. Therefore, choice must be understood again in a broad sense admitting undeliberated or unconscious choice and deliberated and conscious choice.

In section III the figure is completed in order to attend to the dynamics of the institutional change.

III. - Institutional Evolution

Making Sense of Evolution

Following the pattern initiated in section II, firstly the necessary characteristics for an evolutionary perspective in the study of institutions are analyzed. In the next subsection the rest of the graph introduced above, together with the conclusions reached in the present subsection will be explored.

- Dynamic process. Dynamism implies motion, motion implies change, and change is inherent to evolution. But dynamism has another important feature, it is change within a structure, it is endogenous change. This feature is crucial for the study of institutions. It shows the "natural" tendency of an institution in its continuous relationship with other variables to change.

- Endogenous vs. exogenous variables. Dynamism and evolution lead to consider variables as endogenous rather than fixed and given exogenous variables. The continuous interaction of all the variables makes impossible to regard some of the variables as free of the possibility of change.

- Path-dependency. Evolution implies dependencies from the past. Future events and changes depend on the history already played; therefore, past history is a restriction for future events. The alternative of quitting and starting from the beginning as if nothing had happened is not easily available from an institutional perspective. When a country, for instance, after leaving a period of dictatorship restarts a democratic system, there are multiple and complex limitations that make difficult and dangerous the transition in the political regime.

An evolutionary perspective, then, has crucial consequences for the optimality approach. Suboptimal outcomes are perfectly compatible with the institutional evolutionary approach. Path-dependencies limit the range of reaction, making possible highly suboptimal outcomes and hence, highly suboptimal paths. If it is accepted that individuals are not naturally endowed with a process of selection according to maximizing some well-defined function, if instead individuals follow heuristics or rules of thumb incurring in systematic errors, the presumption that individuals will end up in an optimal equilibrium is erroneous. As Hodgson (1993) notes "[c]hange can be idiosyncratic, error can be reproduced and imitated, and a path to improvement can be missed" (p. 201). Moreover, asymmetries in the power structure and transaction costs show that neither the individual making decisions, nor the institutional structure will necessary lead to an optimal equilibrium, or even to a continuous positive incremental development.

Institutional Evolution

Here, the figure presented in section II is completed. The sources of change and why it is labeled an evolutionary process according to the above definition will be analyzed.

[[Fig. 2]]

INSERT FIGURE 2

The interaction process is a continuous process in permanent motion. This continuous motion represents an endogenous process of change. The "natural interaction" among the variables identified in Fig. 2 leads to a feedback relationship. Furthermore, the nature of the individual choice may be of two categories: an "institutional choice" or an "ordinary choice."[3] The former is a choice directly affecting the institutional order, i.e., a choice among some competing institutional rules. Obviously, this has a direct effect over the institutional evolution. The latter is a day-to-day choice that in the long run and indirectly influences the institution. The way this influence takes form appears clear in the figure. The individual choice produces an outcome that through the effect it may produce over the physical environment and the personal sphere, will exercise influence in future rounds over the configuration of rules and norms. Moreover, this choice may directly influence the configuration of rules and norms in the moment of choice. The way this influence takes form will depend on the nature of the choice.

Note that in the previous section it was stated that institutions have an effect over the personal sphere. From this evolutionary perspective it is seen that this effect also holds the other way around. The institutions are also characterized by the individuals' personal sphere through the individuals' choice. When the individual is choosing he or she is shaped by his or her personal sphere. The choice of the individual produces an outcome that will affect again his or her personal sphere (personal history, feelings, etc.) and also the configuration of rules and norms.

Hence, simplifying, four main sources of change are identified. First, the natural interaction and interdependencies shown in the figure, together with the continuous process of motion provokes that "ordinary choices" produce a gradual and incremental change.

Second, "institutional choices" have a first and direct effect over the configuration of rules and norms. The choices through the outcome functions produce an outcome where some rule has been replaced or marginally changed. But this change has other effects in subsequent periods. Once the configuration of rules and norms has been changed, the preferences of the individual in the next round may be changed and then the institutional change may be widespread in all over the interaction process. This opens the possibility for adaptation, learning, and more gradual and marginal changes.

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[3] In Buchanan's terms (1991): "choices made among set of rules" and "choices made within rules." But as he notes, and as it will become apparent in the next paragraphs, this terminology is problematic when an evolutionary perspective is adopted. This is why "institutional choice" and "ordinary choice" are preferred here.

Third, specific individuals who show certain characteristics in their personal sphere (imagination, creativity, and will, i. e., entrepreneurial characteristics) undertake the task and the risk of changing some of the institutional configuration. These individuals produce changes in the interconnected system that encourages other individuals to respond to the situation, ending up in an institutional change.

Forth, some external shocks or influences coming from the physical environment or other institutional levels within the same institution, or other institutions nested with the one at issue in a wider institutional net, produce tension over the interaction process leading to an institutional change. This change takes form through some of the three sources identified above.

However, institutions are much more stable than from the figure may be deduced. The power structure; monitoring and enforcement systems; costs of change; and emulation, conformism and more psychological arguments (see Hodgson (1993) for references and discussion) ensures a tendency in the short-run towards stabilization. As a matter of fact, routines, a wide behavioral manifestation in human beings, only hold in stable institutions.

IV.- Concluding Remarks

The present paper has proposed a more realistic and flexible dichotomy between institutions and organizations than that is common in the literature. It was concluded that a structure or body is not itself either an institution or an organization. It is an institution when the structure is analyzed in itself, and an organization when its relationship with other structures and bodies in a wider institutional arrangement is studied.

The necessary conditions for the study and definition of institutions have been presented in section II. One of the objectives there was to introduce clear boundaries to the concept of institutions, and to separate other concepts that are inappropriate as institutional components. The problem of institutional representation was presented and some open questions, more than answers, were proposed.

Finally, a framework for the study of institutional change with an evolutionary perspective was constructed. There, the relevance of a dynamic and continuous pattern of interaction, an endogenous conception of the variables at issue, and a path-dependency understanding were stressed.

In this paper it has also been shown why the study of institutions provides an ideal framework for the reanalysis of the models used in economic theory. The assumptions used in the neoclassical model are at the core of the research of the institutionalist. The framework presented here has the intention of serving as an explanatory and descriptive theory of the real pattern of interaction of individuals. Individual choice, it has been argued, is not correctly approached from a static conceptualization. If the utilitarian understanding is going to be maintained in economic theory, it must, at the very least, be reviewed how the preferences of the individual are created, maintained and changed. Furthermore, the individual must be understood as a unit immersed in a

wide and complex system in continuous interaction with the features that an evolutionary process presents, as discussed above.

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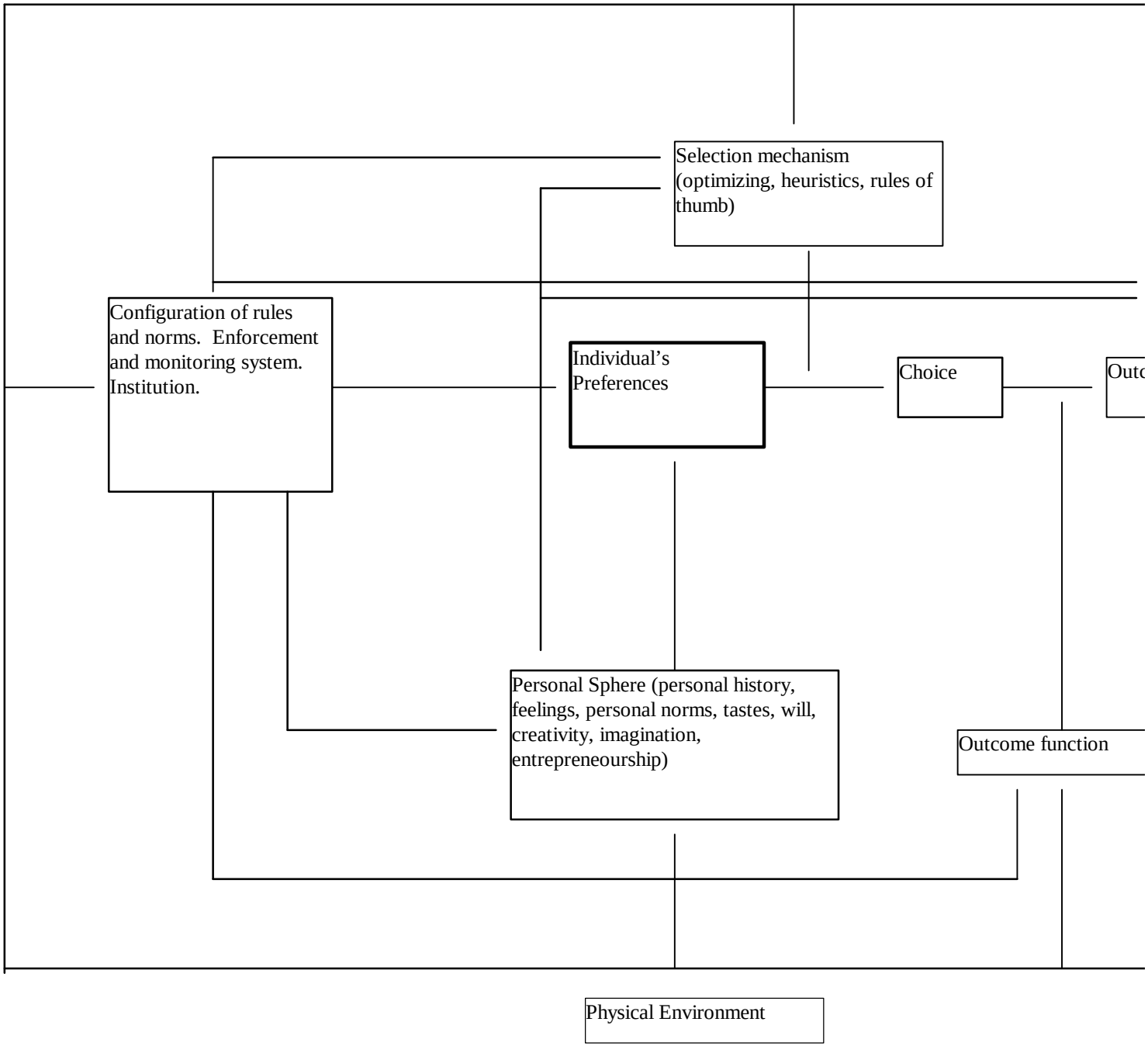
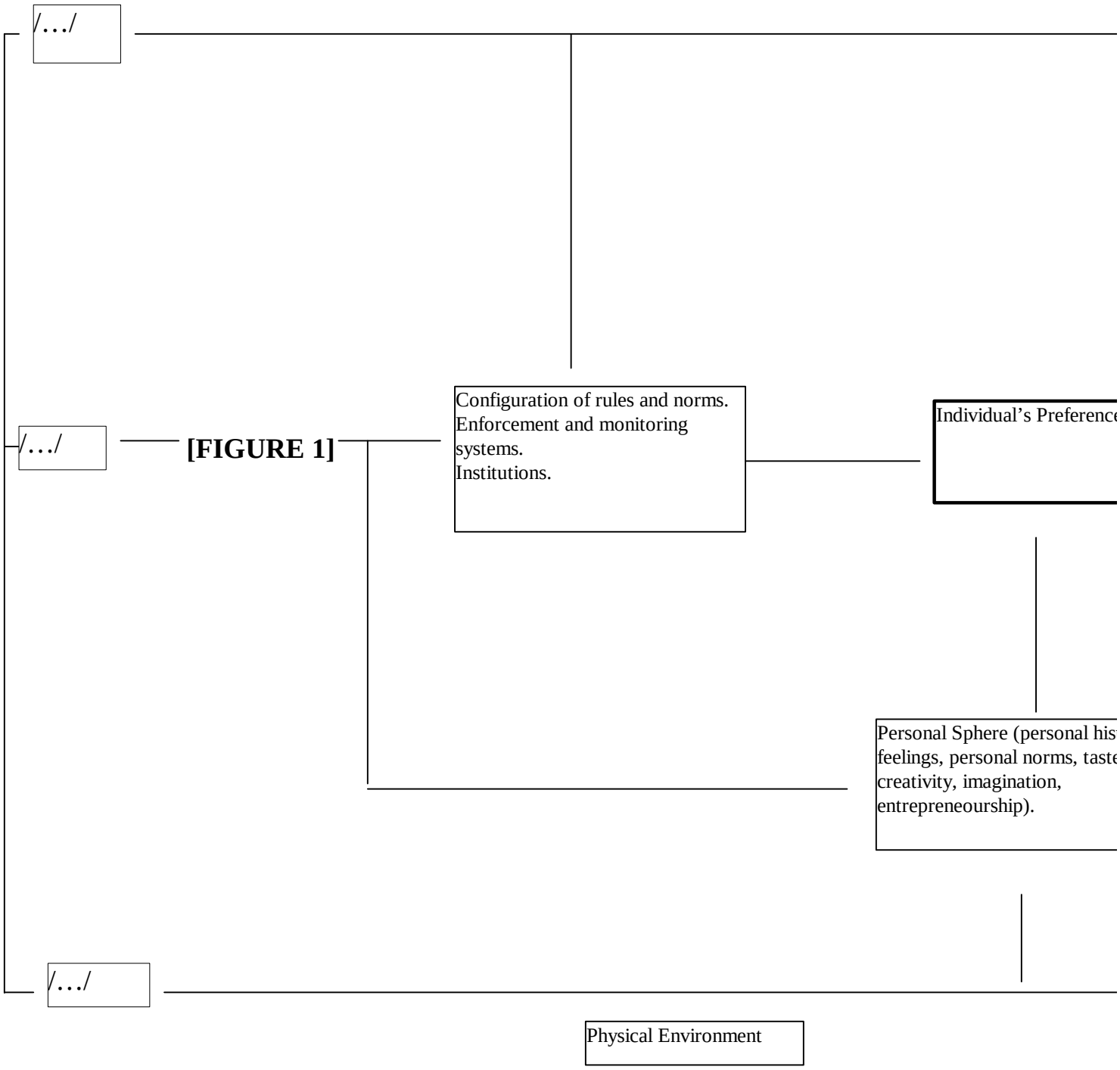

Selection mechanism (optimizing, heuristics, rules of thumb)
Configuration of rules and norms. Enforcement and monitoring system. Institution.
Individual's Preferences
Choice
Outc
Personal Sphere (personal history, feelings, personal norms, tastes, will, creativity, imagination, entrepreneourship)
Outcome function
Physical Environment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[FIGURE 1]
Configuration of rules and norms.
Enforcement and monitoring systems.
Institutions.
Individual's Preference
Personal Sphere (personal his
feelings, personal norms, taste
creativity, imagination,
entrepreneourship).
/…/
Physical Environment