Triple Helix Relations as Consensus-Building Arenas: Regulating Mechanisms and Political Design

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Due to their high level of complexity, triple-helix relations can be regarded as consensus-building arenas. As self-regulated structures integrated by autonomous but interdependent actors (individuals and organizations), triple helix systems must reach consensual agreements and collectively make decisions on important matters, such as the nature of the problems that they will address and the way to solve them but also about the very rules for making decisions.

By their complex nature, triple helix organizations are inclined to consensus, joint decisions and complicated deliberation and negotiation processes (Luna and Velasco, 2010). Participants that value their autonomy dearly cannot be compelled to give up their identities and their constitutive characteristics. Thus, consensus helps the organization retain its members, at the same time helping members preserve their autonomy and identity (Brunsson and Olsen 1998: 29, and Ahrne and Brunsson, 2005: 442). But consensus building among heterogeneous and differentiated actors is problematic. Interactions among participants may be inconsistent and potentially conflictive; leaders from different communities may compete for authority; joint decisions may create uncertainty and confusion, thus making it difficult to determine who should be held responsible for the decisions and actions made in the name of the organization. In this context, contrasting with what happens in political institutions, legitimacy is not guaranteed beforehand. Even when their stated purposes are acceptable, triple helix organizations frequently face legitimacy problems, partly stemming from the existence of various, imprecise and sometimes ambiguous forms of representation of the different actors and sectors involved in the production and diffusion of knowledge.

Taking into account the high level of complexity of triple helix relations, and paying special attention to the political design of triple-helix organizations, this paper addresses four interrelated general questions: What are the main challenges that triple-helix organizations face when they engage in consensus building? What are the more suitable institutional conditions (e.g regulating principles and mechanisms) for consensus building among heterogeneous and differentiated actors? What risks and opportunities do these conditions imply for the development dynamics of triple-helix relations? To what extent the collaborative system moves into a converging direction, becoming more complex and stable?

This paper analyzes the problems of legitimacy and efficacy of these complex entities. It focuses on the problem of representation. Representation is a well-established mater in the context of political institutions (parliaments, parties, constituencies, majority rule). But this is of little help for the study of representation within triple helix organizations. Answers to questions like who should be appointed or is entitled to participate in their coordinating and decision–making bodies, in the name of what or whom, under what procedures and with what authority, are far from clear. We concentrate on two main questions: What is the meaning of representation and representing within these complex systems? What criteria should their coordinating bodies fulfill in order to be legitimate and efficacious?

For the purposes of this paper we have followed the methodological strategy of "parallel demonstration of theory" (Skocpol and Somers, 1980: 176-178), where the development of theory is parallel to the case study. In this sense, the case study has as main function to clarify, illustrate and support the arguments' coherence. As a case study we have chosen Mexico's Scientific and Technological Consulting Forum (FCCT), a triple helix entity formally charged with advising the Mexican government on the improvement of the science system, R&D and innovation matters. This forum brings together

representatives from the scientific, technological, business, and political sectors. For our purposes, we focus on the composition and integration of its coordinating and decision-making body.

Triple helix organizations can take two extreme forms: either that of an informal and loosely connected problem-solving structure; or that of a more formalized body that is relatively autonomous from instituted authorities, authorized to act in fields that require the consensus or agreement of actors whose interests, causes and positions are actually or potentially conflictive. We consider this forum as a "paradigmatic" case of the second type of triple helix configurations, such as those more formally structured and engaged on policy issues than on the solution of specific technological or scientific problems, and where the problem of representation is more evident.

We begin by presenting a set of assumptions that frames the study of representation in complex organizations. Then, we identify a set of general features of complex systems that have implications for understanding the problem of representation. In the following sections we address our main questions and briefly introduce some results of the case considered. The main sources for our case study are documents and interviews.

1. Main Assumptions about Triple Helix Organizations Seen as Complex Systems

The **first assumption** is that triple helix organizations (THO) as other complex associative systems (CAS) have emergent properties, which implies that they have distinctive characteristics as well as their own chances and risks. People who take part in decision-making within THO respond to different logics or codes: money, power or social norms; they are embedded in different institutional settings: the market, politics or science; they have different functional purposes: profit, power or the search for "truth" and prestige; their respective resources are mutually incommensurable, such as money, power and knowledge. But they are more than simply an aggregation of institutional logics and values from different systems, institutional spheres, organizational patterns, or local cultures. They have, as it were, a "personality" of their own. Therefore, the validity of conventional criteria and standards cannot be taken for granted when one analyzes their functioning and assesses their performance.

The **second assumption** is that CAS permanently show a tension between autonomy and interdependence. These systems have a distinctively high level of complexity, which results from the combination of four properties: their members are highly autonomous from each other, each associative system is collectively autonomous from people and organizations in its environment, each system is highly dynamic, and its component units (individuals, collectivities or organizations) are highly interdependent. It should be pointed out that these properties are not rigid. Rather, they are defined and redefined as the associative system evolves. Moreover, CAS face a permanent risk of "colonization" by political actors (parties, legislators, regulators or other government agents), the market, sponsors and experts, and so on, which implies that the persistence of those properties cannot be taken for granted.

The **third assumption** is that colonization pressures may be alleviated through norms, institutional mechanisms, and operational rules that help CAS process and solve their inconsistencies and manage conflicts among participants. That is to say, a disposition to, or a need for cooperation among differentiated actors is not enough to create a new structure; the existence of an adequate institutional environment is crucial.

The **fourth assumption** is that any associative effort at the level of public spaces must be not only efficacious but also legitimate. Legitimacy is not guaranteed beforehand. Unlike political institutions, and even corporatist arrangements, complex associative systems have no clear representation criteria and mechanisms. Not only is it unclear who should participate and on behalf of whom; the procedures for selecting participants in the decision-making process are also uncertain. Moreover, the multiple institutional affiliations of some participants tend to obscure the interests that are at play.[1]

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[1] The notion of stakeholder that is common in the literature on governance does not solve these questions. Differences among participants—e.g., experts, stakeholders, distinguished citizenships and those properly recognized as representatives—are diffuse, and a same agent may perform several roles at a time. Furthermore, various types of "conventional" representatives may participate, such as those elected, and

Although we can expect a close relationship between legitimacy and efficacy, legitimacy has its own distinctive logic. It depends not only on the legitimacy of interests and particular causes that are at play in the system and on its accountability and transparency; it also depends, to a large extent, on the mechanisms and decision-making rules and, more generally, on the political design of the associative system.

2. Characteristics of CAS

From the above properties derive a series of characteristics, which CAS share to a significant extent and which have implications for representation.

CAS result from multiple initiatives, their composition is significantly heterogeneous,[2] and their memberships usually include both individuals and organizations. Entrance and exit are formally free; but entrance is usually selective in practice, and exit may imply high costs given that the resources of members are highly interdependent.

Apart from creating obvious cohesion and communication problems, heterogeneous membership has several other consequences: CAS' aims and goals tend to be multiple, inconsistent and shifting; interactions among participants are potentially conflictive, and the exchange of goods is difficult as the resources that members bring to the interaction (information, economic or political power, strategic capacities, symbolic resources, mobilization capacities, expertise) are frequently incommensurable.

Particularly important for the problem of representation is the fact that, by their own properties, CAS are inclined to consensus[3], joint decisions and complicated deliberation and negotiation processes (see Luna and Velasco 2009). But consensus building involves an unstable equilibrium among personal interests of participants, those of his/her reference group, and the interests of the system in its search for agreements on how to solve common problems.

Due to the lack of institutionalized rules within the system, deliberation, interpersonal trust and prestige tend to play a key role in fostering compliance and commitment among actors with inconsistent and even contradictory interests, preferences and identities.

All of these features heighten the importance of coordinating mechanisms—mechanisms that stabilize the interactions among members of the associative system and make them converge into a tighter form of collaboration. Equally important, and for similar reasons, is the existence of an adequate institutional environment.

In order to provide a conceptual framework for our case analyses, in the next section we concentrate on the problem of representation, trying to answer two main questions: What is the meaning of

corporatist or bureaucratic ones (delegates from a government agency, a corporation or any other well established organization).

[2] Not any kind of relationship among heterogeneous actors should be classified as complex. Among the most obvious exemptions are corporatist and patron-client relations, with a hierarchical character, as well as hidden or "dark networks", with interdependent but non-autonomous members. Nor is heterogeneity necessarily associated with conflict: heterogeneity can lead to complementary and cooperative relations, while homogeneity can give rise to predatory competition.

[3] It is important to consider that consensus does not amount to unanimity. Rather, as Schmitter (2001: 7) affirms, consensus, based on horizontal interactions, implies that no decision can be taken against the expressed opposition of any participant. The main consensus-building mechanisms are: deliberation (trying to convince one's adversaries that one's position is justified), compromise (accepting a position that lies midway between the preferences of two or more actors) and accommodation (taking into account the intensity of other members' preferences).

representation in the context of CAS, and what norms or principles their political design should follow in order to be efficacious and legitimate.

3. The Meaning of Representation in CAS

As shown in Hanna Pitkin's classic texts (1967, 1969), representation basically means "re-presentation", e.g. a making present of something absent, "but not making it literally present. It must be present indirectly, through an intermediary" (1969:16). The meaning and uses of the concept are complex and multiple, since the basic idea of representation can take different forms, depending on what kind of thing is being made present, by what sort of intermediary, in what sense and under what circumstances. "Not just anything can be represented, in just anyway, at just any time and place…" (1969:16).

From this perspective, we can say that two meanings of representation or representing are particularly important in CAS: descriptive or sociological, and advocacy.

Descriptive representation imply making present something absent by means of their resemblance or reflection "as in a mirror" (Pitkin 1967: 11), and it is based on the similarity principle, related to the extent to which the representative resembles those whom he or she represents. It is assumed that both representatives and represented have common interests or shared experiences

With regard to descriptive representation, Pitkin and others have emphasized the characteristics of representatives and therefore the notion of representativeness ("a standing by others")[4] more than representation ("an acting by others"). In this respect, we would make two remarks. First, the similarity principle is also important at the level of the representative body, which should reflect without much distortion the whole "audience". The reasons why descriptive representation has been justified is that it ensures that the representative body has the relevant information and hears the kind of voices it needs if it is to make good decisions (see Rehfeld 2005:26). This kind of representation also plays a key role in generating trust (Rabinder 2004:149). Secondly, in the context of a deliberative consensus arena, descriptive representation is not sufficient, since representatives are not just the passive messengers of the interests and views of the represented. This is why the notion of representation as advocacy is relevant for complex systems.

From the advocacy approach, representation is seen as the preservation of disagreements rather than the aggregation of interests. Advocacy is conceived as a situation in which the representative has an emotional tie with the causes of his/her electorate (we would say her reference group) and has a relative autonomy of judgment (Urbinati 2000: 773; Dovi, 2006). This meaning of representation is related to the diversity principle, which functions as a guide for deciding which information and voices should be descriptively reflected.

The diversity principle should be consistent with the principles of pertinence and political equality; these imply the inclusion of the most relevant perspectives and not necessarily the most visible ones, and the inclusion of marginalized or formally disorganized but relevant groups. In this sense, descriptive representation is not a simple reflection of the heterogeneity of organized forces and established powers.

Finally, we identify the impartiality or neutrality principle. In the absence of a well-recognized constituency and free electoral mechanisms, the political autonomy of the system from existing interests and the individual autonomy of its members become important sources of authority and authorization. Political equality, rotation mechanisms that allow each important participant to temporarily occupy the leading positions, reciprocity, a climate of mutual respect and recognition of the interests of the others, have all proved to be useful devices for the application of the neutrality principle.

Regarding the role of representatives, it is important to notice that individual autonomy means that representatives act mainly as "trustees" rather than as "delegates." Representatives should do what they think is best, rather than what their "constituents" want; in other words, they should have relative

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[4] Pitkin claims that the category of a standing for others also includes symbolic representation, which is based on emotional or affective responses rather than on rationally justified criteria; for example, the king of a constitutional monarchy is a symbol that does not resemble the nation that it represents (1967: 100).

autonomy of judgment. Otherwise, private negotiations and particular or corporate interests may prevail, with the consequent risk of unilateral action.

In sum, the problem of legitimacy has two dimensions: the legitimacy of individual representatives and the legitimacy of the representative body.

The plurality of forms and mechanisms of representation that coexist within CAS is a key difference between them and other political structures. To a significant extent, this is a self-constructed representation, in which participants have to earn the right to speak and act on behalf of certain groups. To achieve this, these participants take advantage of their sociological resemblance to those groups or try to give themselves the appearance of "symbols" of those groups, even if they have no bureaucratic or electoral connections with them. Similarly, several representatives are not bound by a rigid mandate; rather, they are significantly free to use their own criterion and do what they think is best for the people they represent.

This plural and flexible form of representation has several specific characteristics. To begin with, there is no predefinition of who must be represented, of who are the members of the reference group or community.

In the second place, the content of representation is equally undefined. It is not clear beforehand what are the issues that representatives must deal with, what interests that must be represented and what problems must be solved. Some groups and sectors participating in the system are well aware of the issues that interest them, have definite interests and pursue precise goals; but other participants have no such awareness.

In the third place, alongside some representatives that must follow the mandates of the people they represent, there are other who follow a more liberal principle of representation (they may make the decisions that, according to their own criterion, are in the best interests of the people they represent); and there are even some "representatives" who can speak or decide with almost complete independence.

In the fourth place, participants in the system are selected according to different criteria. Four main kinds of participants can be identified:

1. Representatives selected through conventional electoral processes. This happens when the electors have a relatively strong identity and are easy to organize.

2. Participants that are organically linked to well-organized groups. They could be, for instance, representatives or delegates of government agencies, business associations and firms, or academic institutions. This is a bureaucratic or corporative type of representation, in which the sending organization retains (at least in theory) the right to remove its representative and to ratify or modify his or her decisions.

3. Participants who, in a legal sense, do not represent any one. Their function may be limited to that of experts or advisers, but they may also be authorized to participate in decision-making. They are people invited or self-invited into the system, because they are interested in participating in it or because, for some reason, the others recognize them as legitimate participants. For analytical purposes, we can distinguish three sub-types:

a) Sometimes they are "sociological" or "descriptive" representatives of certain sectors with which they share some decisive traits.
b) But sometimes they are quite unique people, commonly with high social visibility. They are seen as the symbolic representatives of certain sectors, forces or social currents.
c) In some cases, they are people interested in taking part (activists or leaders) who claim to speak for certain groups whose approval they hope to earn. They seek to establish a kind of "anticipatory" or "gyroscopic" representation (Mansbridge 2003)[5] or a representation by intercession (Urbinati 2000).

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[5] In "*anticipatory representation . . .* representatives focus on what they think their constituents will approve at the next election, not on what they promised to do at the last election. In *gyroscopic*

Representation in CAS may be a very promising alternative, given the discredit of conventional forms of representation. Thanks to their flexibility, openness and variety, CAS may insert themselves into chains of traditional representation (electoral, bureaucratic or corporatist), thereby complementing them. They can offer flexible mechanisms of representation to different actors in diverse situations. They can also adapt themselves to the shifting affiliations characteristic of present-day citizens. They can bring together representatives selected through diverse procedures and acting on behalf of very different reference groups, thereby setting up an autonomous structure, situated at the intersection of the market, the state and civil society.

But, precisely because of its indeterminacy, representation in CAS may be disappointing. The representativeness of participants can be easily questioned. Deliberation among them can degenerate into a non-structured discussion, with no concrete results; or it can be demoted to the point of irrelevance, being replaced in practice by negotiation or vertical imposition. The diversity of representatives may be an obstacle to communication or may be replaced by forced and exclusionary unanimity. The autonomy of the system, which is one of its basic properties, may turn out to be counterproductive if it is not accompanied by an appropriate connection between the system and decisive social and political actors, especially the government.

4. Mexico's Scientific and Technological Consulting Forum: A Consensus-Building Arena?

On the light of the previous discussion, in this section we briefly describe our case and concentrate on the analysis of the composition and integration of its coordinating and decision-making body. We consider the composition of this body, as well as some relevant aspects of their operative norms and practices.

The Forum exhibits several of the key features of complex organizations: it crosses functional, institutional, identity and territorial borders; it is relatively autonomous from instituted authorities; its units (individuals, groups or organizations) are relatively autonomous but interdependent from each other; its decisions, according to its statute, must be jointly made by the board of directors. Access to the board is mainly by invitation although the respective communities elect some of the members.

The Forum was created in 2002. It is formally charged with advising the Mexican government on science, R&D and innovation matters. It brings together representatives from the scientific, technological, and business sectors. One of its main functional purposes is to promote interaction and collaboration among the agents of the national innovation system. Two of its objectives are particularly important: to enhance business involvement in the design of scientific and technological policy, and to increase the participation of business firms in R&D activities and their financing (a participation that is currently perceived as extremely low).

The Forum has a rather ambiguous character. Created by legal mandate, and mainly financed by the federal government, it was given the formal character of "civil association" and defined as non-lucrative, in obvious attempts to make it autonomous, from both the government and business firms.

The Forum is made up of organizations rather than individuals. Its board of directors has 17 positions, 14 of which are occupied by different associations and academic institutions and 3 by individuals elected by the scientific community (e.g. by the 16, 000 members of the National System of Researchers). This integration is shown in the following table.

Integration and Composition of the Forum's Board of Directors

ACADEMIES	
1) Mexican Academy of Sciences	**BUSINESS ASSOCIATIONS**
2) Engineering Academy	10) Industry national confederation (CONCAMIN)
3) National Academy of Medicine	11) Agriculture national confederation (CNA)

representation, the representative looks within, as a basis for action, to conceptions of interest, 'common sense,' and principles derived in part from the representative's own back-ground" (Mansbridge 2003, 515; emphasis in the original).

4) Social Sciences Mexican Council	**OTHER ASSOCIATIONS**
5) Mexican Academy of the Spanish Language	12) National Association of Higher Education Institutions (ANUIES)
6) Mexican Academy of History	13) Association of R&D directors (ADIAT)
UNIVERSITIES	14) National network of state-level S&T councils
7) National University (UNAM)	**SCIENTISTS**
8) National Polytechnic Institute (IPN)	15-17) 3 Elected members from the National System of Researchers
RESEARCH CENTRES	
9) Center for Research & Advanced Studies	

On the side of science, the board reasonably complies with the principles of diversity, since it covers different knowledge fields and includes representatives from the major academic institutions of the country, particularly those engaged in academic research. It also includes representatives from the main partners involved in scientific and technological innovation: science, industry and bridge organizations (such as the Mexican Association of Applied Research and Technological Development Directors, ADIAT). Besides, to some extent it tries to diversify its geographical scope through the incorporation of the National Network of Local S&T Councils; the councils that make up this network are organisms of state-level governments, but the network itself is not a government institution but rather a civil society organization.

However, it is particularly remarkable that the System of Public Research Centers—which comprises 27 local research centers in the fields of exact, natural sciences, and social sciences and in technological development—is not represented in the board. These centers are devoted to the improvement of local economic and social conditions as well as to the strengthening of scientific activities at the regional level, and are the third more important group of academic institutions in the country (Conacyt, 2010). The exclusion of this system is even more worrisome because one of the basic functions of the Forum is to advise the government on the creation, transformation and extinction of precisely these centers.

It is also noticeable the marginal position of individuals (or groups) directly involved in innovation and R&D activities, and the enormous weight of well established national associations. This makes the Board of Directors a biased reflection of the heterogeneity of organized forces and established powers.

The limited conditions for deliberating that prevail within the Forum are a major obstacle to its transformation into a consensus-building arena. Because of how its membership is defined and because associations act in a rather corporatist institutional environment, representatives tend to behave as delegates rather than as trustees. Furthermore, many representatives do not directly attend the periodical sessions organized by the Forum, but send delegates instead. This strongly limits the deliberative character of the Forum and therefore the individual commitment that could derive from a deliberative process. This may be the reason why joint sessions are merely informative and agreements between the Forum's president and key actors are privately negotiated outside the Forum. This gives the Forum a hierarchical rather than a horizontal character.

In short, the Forum has become a bureaucratic structure with very poor deliberative capacities and scarce practical results.

Conclusions

Our analysis enables us to highlight three conditions that are indispensable if THO are to fulfill their promises with regard to representation:

1. While it is normal that within CAS coexist several types of representatives, the optimal situation is that in which the majority of them can effectively participate in deliberative processes, without being subject to a rigid mandate by the people they represent. For this, it is very important that, alongside corporative or bureaucratic representatives, there should be a substantial number of experts, descriptive and symbolic representatives.

2. By definition, CAS have an open membership. But such openness should not degenerate into vagueness. The majority of participants should be representatives of some sector, organization, interest or current of opinion with a significant stake in the issue or conflict with which the system deals. It is equally important to avoid that such openness becomes a masquerade, concealing a biased selection of participants. In other words, it is necessary that both members and the whole system be true representatives. This requires CAS to follow the diversity, pertinence, proportionality and neutrality principles.

3. Often it is necessary to restrict the representation of actors that are too powerful and encourage the representation of less powerful actors. It is also indispensable to establish a horizontal and open structure, with equitable interactions among participants. This is necessary not only to make room for the equitable representation of relevant people and organizations, but also to facilitate deliberation and preserve the system from the encroachments of negotiation or authoritarian imposition.

Finally, it could be said that approaching triple helix organizations as complex associative systems may provide a better understanding of their nature, potentialities and limitations. Analyzing them as consensus-building arenas may contribute to a better understanding of the conditions under which they function. The understanding of these conditions is a precondition for enhancing their ability to search for solutions to common problems.

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