Chapter 5

UNVEILING THE COMPLEXITY

JORGE ALEXANDRE COSTA, ANA CRUZ, GRAÇA MOTA

Introduction

Analysis of the data presented in chapter 4 conveyed the scale of the complexity inherent to the *Orquestra Geração* (OG) project and the need for a systematised approach to its organisation and structure. Hence, in this chapter we look at the OG through the lenses of two conceptually different but nevertheless complementary models: the organisational typology of Mintzberg (1979, 1989) and the historical-cultural activity theory as proposed by Engeström (2001, 2014).

In search of the organisational and structural dimensions of the *Orquestra Geração*

The Mintzberg organisational typology

When analysing the OG organisational structure (see Fig. 1), we may indeed identify the six fundamental components defined by Henry Mintzberg (1979, 1989, 1995) and thus grasp how they interrelate in terms of project coordination (see Fig.2).

The organisation base, its *operating core*, spans all of those undertaking the core work related to the production and service system (Mintzberg, 1979). In the OG structure, we identify as the *operating core* the music teachers that deal directly with students, their families and communities in the different nuclei.

The *strategical apex* incorporates the senior managers, those holding the responsibility for the organisation complying with its mission and ensuring that all members have the means necessary to this end (*ibid.*). The *strategical apex* of OG emerges from the person endowed with overall responsibility for the project, in particular the director (the assistant director of the National Conservatory School of Music for the OG).
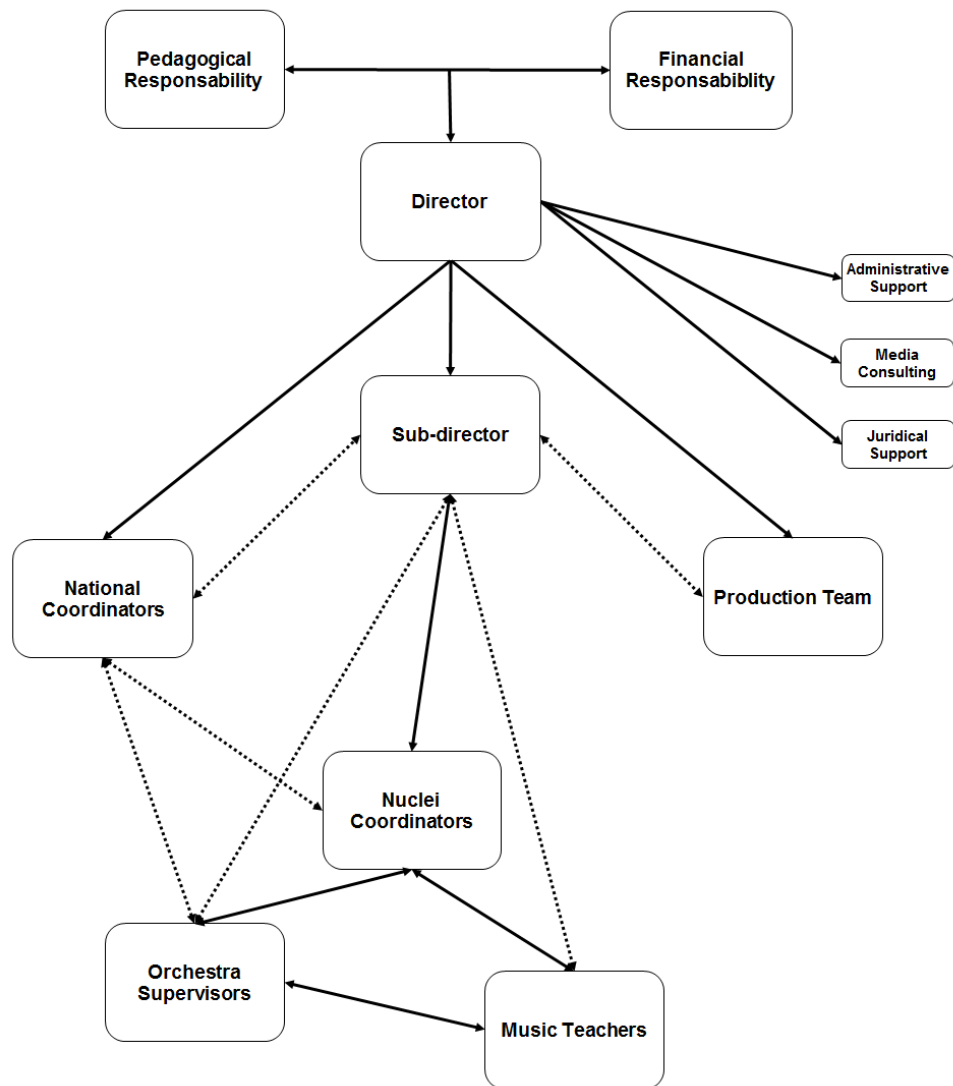
Figure 1. Organisational organigram of *Orquestra Geração*

The interconnection between the *strategical apex* and the *operational core* runs through a *middle-line* with formal authority (*ibid.*). In the OG, this *middle-line* is secured by a) a sub-director (consultant to the OG board) who reports to the director; b) the nucleus coordinators who report to the sub-director and supervise the teachers; and c) the staff preparing and engaging with the orchestras who also report to the sub-director and cooperate with the coordinators of the nuclei in the general management of each orchestra. Collectively, they bring about the operational implementation of the guidelines and orientations handed down by the *strategical apex.*

The fourth section of this model is the *technostructure* made up of the analysts responsible for the planning and organising the methods designed to obtain the working system that enables the standardisation of the organisation (*ibid.*). In the OG, these analysts correspond to the national coordinators, whose main functions include pedagogical and artistic coordination and the supervision of teaching activities (repertoire and didactic methods) in every nucleus. They also take on responsibilities for teacher training and an advisory role to the board.

In terms of *support staff*, in the OG we may identify all of the staff who hold roles in support services for legal and bureaucratic procedures, public and labour relations as well as the production team. Finally, as the overarching framework for these five sections, we encounter the *ideology*, which encapsulates the values, the beliefs and the traditions that distinguish different organisations and breathe life into their structures (Mintzberg, 1989). The strong influence of the *El Sistema* (ES)[44] identity and the systematic presence of Venezuelan members (methodology, repertoire, orchestra supervisors, pedagogical consultants) constitutes the most relevant characteristic of the OG organisational and ideological culture.

As with any complex organisation, the OG reflects the presence of *coordination mechanisms* (Mintzberg, 1979): *mutual adjustment* among teachers, among teachers and students and among the nucleus coordinators; *direct supervision* of the organisation carried out by its director and of its teachers by the middle-line managers; *the standardisation of work processes*, implemented through national coordination and supervision; *the standardisation of work outputs* obtained through the definition of a national repertoire that all orchestras (of a particular level) at the different nuclei are to study over the period of an academic year; *the standardisation of worker skills* ensured by the recruitment of young teachers and providing training opportunities.
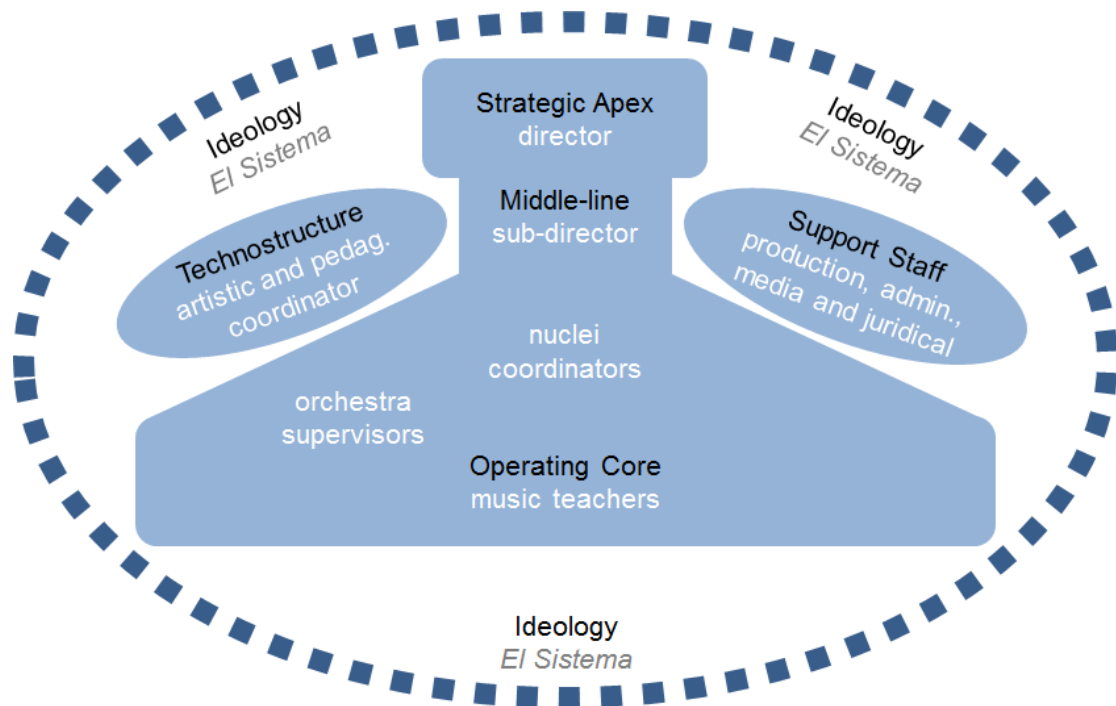
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[44] Cf. chapters 2 and 4.

Figure 2. The organisational configuration of the *Orquestra Geração* (adapted from Mintzberg, 1989:99)

The implementation of the OG in the various nuclei seems to draw upon the powers of the intermediate managers (sub-director and nucleus coordinators) given that they act in close connection with the context of each nucleus that, in turn, strongly influences the local development of the project. This concept interrelates with the "delegation of formal power down the hierarchy to line managers" (Mintzberg, 1989: 105). In what are termed the *divisionalized* structures, each division/unit acquires some operational autonomy even while the power of decision making still remains concentrated in a small group of persons who determine that "divisionalization constitutes a rather limited form of vertical decentralization" (Mintzberg, 1979: 192):

> *I may state that the main brain behind this project is Professor Helena Lima, undoubtedly. She is in charge, she sends the information and details to coordinators by email and then they distribute them to our school teachers. Every coordinator has his own school and sends it to the teachers in his school.* (coordinator, Apelação, 12-03-2013)

> *I know that sometimes I may take decisions alone or perhaps in conjunction with my colleagues but I would never be able to take a decision without first talking to Helena Lima (...) to me, she is still in my team, she is my boss and my team, I convey our ideas, those of teachers, to her, whatever is happening in the school (...). I do not feel alone, I cannot be... I know that this happens in other places but I do not know if I'm just used to it as from the very first moment when I joined the Geração, I've been dealing with Helena in this way. To me, this connection is very important.* (coordinator Miguel Torga, 26-03-2014)

The sub-director and nucleus coordinators (middle-line managers) work together in order to implement the same repertoire at each nucleus, thus, striving to achieve the *standardisation of outputs.* Therefore, when an organisation grants powers to its *middle-line* managers and controls the performance through the standardisation of outputs, this assumes a *diversified* configuration (Mintzberg, 1995: 331-332).

Furthermore, the artistic coordinator (*technostructure*) has begun to assume increasing levels of responsibility and today takes over advising the board, supervision of the ongoing work of teachers, coordinating the intensive training camps and training teachers. This coordinator also carried out a recent process of restructuring that resulted in the reduction of orchestral levels and established a new role in the organisation – orchestra supervisors -, that is, music teachers with management and supervision responsibilities:

> *This year, we strengthened deeply that aspect with his presence [Olivetti]. (...) There was the suggestion that we think about three major levels and that these, we might say, form the foundations of the orchestra, the Initiation Orchestra that would be for students joining that year (...),the next orchestra is the Infant and then comes the Youth Orchestra. (...) In the meanwhile, we set up the role of the orchestra supervisor, which is a position that also exists in Venezuela. This person is responsible for the school repertoire or for the repertoire of an orchestra. (...) In summary, we have a supervisor for each level of orchestra. (...) The orchestra supervisor is responsible for ensuring the appropriate development of the respective repertoire.* (Helena Lima, OG sub-director, 25-03-2014)

In one way, this strengthening of the informal power of the artistic coordinator in relation to the coordinators of the nuclei, orchestra supervisors and teachers in general represents a "shift of power from managers to nonmanagers" (Mintzberg, 1979: 192), in a process entitled horizontal decentralisation. However, as such, this extends only to the artistic coordinator and we may consider that this constitutes only a limited form of horizontal decentralisation. Organisations placing the emphasis on standardisation of work processes, regulated by the *technostructure*, rather than establishing efficient routines, adopt a *machine* configuration (Mintzberg, 1995: 331).

This analysis thus suggests that the OG, taking into consideration the identification of a *middle-line* and the *technostructure* as core facets of the organisation, alongside the existence of limited vertical and horizontal decentralisation in terms of control of power, may be defined as oscillating between two fundamental configurations: *diversified* and m*achine organizations* (Mintzberg, 1995).

The Orquestra Geração as an activity system

In advancing with our goal of unveiling the complexity of the OG, there emerged the need to cross-reference the Mintzberg based analysis with another model capable of serving as a tool for interpreting the learning processes that make up its practices. Within this scope, the historical-cultural activity theory was adopted as the analytical model able to answer central questions raised about any theory of learning:

> (1) Who are the subjects of learning, how are they defined and located?; (2) Why do they learn, what makes them make the effort?; (3) What do they learn, what are the contents and outcomes of learning?; and (4) How do they learn, what are the key actions or processes of learning? (Engeström, 2001: 133)

First proposed by Lev Vigotsky (1978), activity theory has evolved over the course of three generations of researchers. In this study, we depart from the contemporary applications of historical-cultural activity theory as expounded by Yrjö Engeström (2001). Hence, we correspondingly cross-reference the core facets of the

human systems and practices within a particular activity system – subject, object, instruments, rules, community and division of labour – with the following five principles: i) a system taken as the prime unit of analysis; ii) a system characterised by its multiple voices; iii) a system confronted with its own historicity; iv) a system in which contradictions play a central role as sources of change and development, and v) a system in which there is always the possibility for an expansive transformation (Daniels *et al.*, 2009; Engeström, 2001; Welch, 2007; Mota & Abreu, 2014). Furthermore, the concept of *artefact*, as a mediating instrument, would seem fundamental to any interpretation of the central learning processes taking place at the OG.

Michael Cole (1998) defined *artefact* as a cultural object that undergoes modification over the course of human history and always taking concrete form through a given action. As a means of objectifying human needs, Marx Wartofsky had already in 1979 identified three levels of artefact: primary, secondary and tertiary. In the primary artefacts, Cole (1998) included "the words, writing instruments, telecommunications networks and mythical cultural personages" (1998: 121). Within our OG context, we would correspondingly identify 'the musical instrument', with its presence in the life of children and in their homes fostering new interactions with their peers and family members:

> *I want the violin to be present in people's homes because it is an object and an object interacts with people, it has its own life (…), it will force people to interact with it, thus, this object joins the family agenda (…), has an impact on these families.* (Jorge Miranda, mentor, 09-05-2013)

As secondary artefacts, Wartofsky listed the means of action by which the primary artefacts get used. The proposal made by Cole attributes a central role to the preservation and transmission of the means of action and beliefs such as "recipes, traditional beliefs, norms, constitutions, and the like" (1998: 121). We correspondingly identify the orchestra as a secondary artefact that, through its norms, rituals and hierarchies, slowly modulates children's behaviours:

> *In this collective practice, we strongly reinforce those values such as self-esteem, feeling secure, companionship, creating a great family, that great*

community which is the orchestra. I don't think there is any better discipline than the orchestra. (National coordinator, 07-05-2013)

According to Wartofsky, the tertiary artefacts are the works of art, the imagined worlds and the processes of perception. These also provide us with the means to transform the world in which we live. In the OG, the musical works and the music itself are therefore identified as tertiary artefacts:

This is a complete transformation of a system that, through music, helps children become great musicians and great people, especially. (National coordinator, 07-05-2013)

Cole considers that "one next step is to look at ways in which artifacts of the three different kinds are woven together in the process of joint human activity" (Cole, 1998: 122).

This is what we here aim to achieve in accordance with the five Engeström principles set out above and that are present in any system of activity.

First principle – a system as a unit of analysis

The activity system as a "prime unit of analysis" (Engeström, 2001: 136) corresponds to the OG project in which music is the artefact mediating the following outcomes: social inclusion and mobility, and the personal and musical development of children and young persons exposed to educational and social vulnerability (the subjects) through collective musical practice (the object). This develops within the scope of a vast community (teachers, coordinators, families, etcetera), through explicit and implicit rules (musical curriculum, training camps, performances) and a specific division of labour (different roles within the orchestra) – see Fig. 3.

Second principle – a system with multiple voices

The OG is a system of multiple voices within a multi-layered community in which the division of labour nurtures different positions and roles for each particular participant. The diversity of profiles of the different actors (directors, national coordinators, nucleus coordinators, teachers, students, families and so forth)

emphasises this same multiplicity of voices at the organisational level. This also results in contradictions that in turn bring about both innovation and difficulties and thus requiring a permanent state of negotiation.:

> *The teachers in schools identify the problems along with the coordinators. They say: "Look, this is not working, we are not being able to manage it, can something be done?" Well, the issue gets handed onto us [the board].* (Helena Lima, sub-director, 21-05-2012)

> *We have some resistances and we have to keep on managing them. And after this, very often the coordinators state: 'Well then, this aspect here is not functioning, we're facing difficulties…' There are some schools that are still experiencing difficulty in accepting the role of the orchestra supervisor: 'are we now having someone watching over us?''. And that is precisely what we don't want but rather a means of promoting coordinated teamwork.* (Helena Lima, sub-director, 25-03-2014)
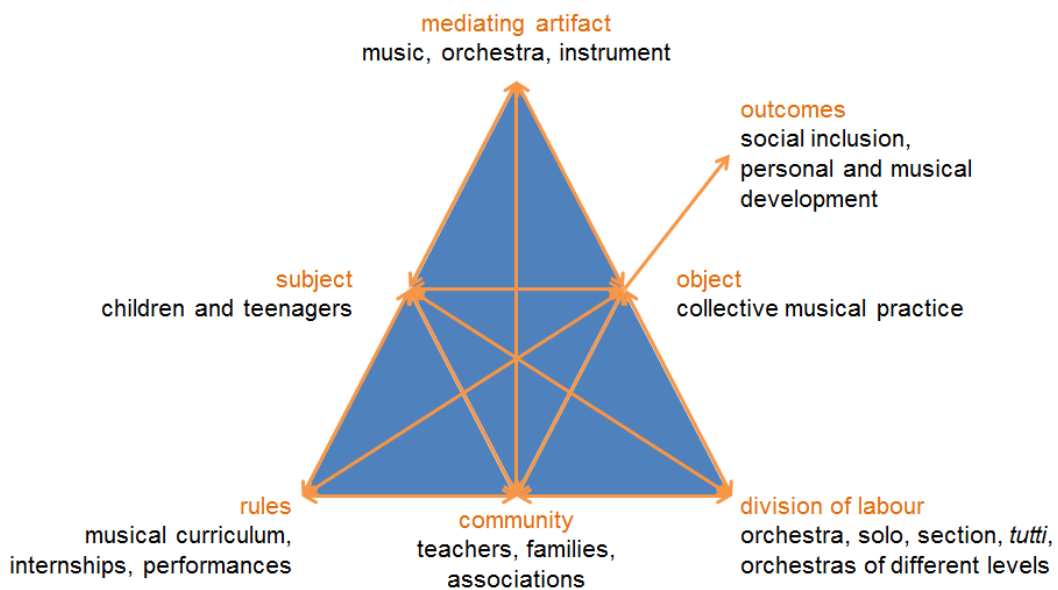

Figure 3. Activity system that frames social inclusion and the personal and musical development of children and adolescents in *Orquestra Geração* (adapted from Engeström, 2001 & Welch, 2007)

Third principle – a system confronted with its historicity

According to Engeström, "activity systems take shape and get transformed over lengthy periods of time. Their problems and potentials can only be understood against

their own history" (2001; 136). As a relatively recent project, we are not inclined to approach the OG as having its own historicity. However, the projects also reflects *El Sistema* and its four decades of history through both its methodology and its tangible successes, especially with the maestro Dudamel and the Símon Bolívar Symphonic Orchestra of Venezuela: "*El Sistema* and its offspring would not have sustained the world's scrutiny without its convincing artistic achievements" (Majno, 2012: 58).

We may analyse the OG as a specific case that, while globally inspired on the ES history, has begun to establish its own procedures and instruments that undergo testing and accumulation through local activities. This would constitute a clear theoretical basis for its history, which appropriately identifies the need for adaptation that requires continuous scrutiny and gets shaped by its day-to-day construction in a process of converging with and diverging from *El Sistema*.

Fourth principle – the central role of contradictions

We identified various contradictions in the OG that may potentially serve as "sources of change and development" (Engeström, 2001: 137). One of them stems from the very diversity of pedagogical practices already referred to in the second principle. Another is the latent tension between either adopting the ES methodology just as implemented in Venezuela or adapting it to the Portuguese context. A third is the ambivalence between the two core objectives: social inclusion and musical excellence. Finally, cultural diversity and the social contexts of the communities hosting the nuclei also prove a source of multiple contradictions requiring a variety of approaches.

As suggested by Engeström, these contradictions do not equal problems or conflicts. Our data report how there were moments when it was necessary to take decisions, whether due to the recognition of the existence of issues interrelating with the pedagogical functioning of the project, the teaching and learning methodologies or with the actual musical repertoire: all gave rise to reflection and change:

> *We work on the constant adaptation according to our circumstances, the specific needs we detect, the needs of schools and of pupils. (...) And sometimes*

we introduce a new course that may take the whole year or just function as a workshop. (Wagner Dinis, director, 21-05-2012)

The idea is to have a common repertoire so that they can all come together and play. There was a time in which we were already doing things more… more differentiated. Sometimes, even the teachers themselves suggested that we do this or that but now we want to focus on the same repertoire for all nuclei… (Helena Lima, sub-director, 25-03-2014)

Next year, we want to have some of this repertoire [traditional Portuguese] and… a fado, we want to have a fado arranged for orchestra, we also want to look for more funaná, or morna, as well as some kizomba. (…) They massively like all of them. And we never wanted them to get circumscribed: in this school, we have Cape Verdeans and so we are going to do a funaná here… Indeed, just as the schools are… more than multicultural, aren't they? (Helena Lima, sub-director, 25-03-2014)

Fifth principle – expansive transformation

The OG potential for expansive transformation resides in appropriating the contradictions identified within the scope of re-conceptualising "the object and the motive of the activity" (Engeström, 2001: 137). Some efforts in this direction may already be identified.

As regards the diversity in the teaching profiles, the approaches taken by the coordination have involved holding workshops and other training opportunities. Other intentions that we found in the discourses of various actors, but which do not seem to have been satisfactorily implemented, include improving communication between teachers and projects coordinators as well as fostering pedagogical innovations and the individual initiatives of teachers:

Over the course of time, we have identified teachers that are best able to do the pure and hard work of the orchestra. (…) There are teachers who are very good at working the individual part but who then have some difficulties in managing the big group and even from the point of view of children's behaviours. (…) Therefore, we have identified the various functions that these people are able to perform. (Helena Lima, sub-director, 25-03-2014)

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There are already many teachers with a lot of initiative who have shown great, great capacities for solving problems (...) Therefore, when I see that a person has the abilities or a particular gift for running a camp, marketing, I give her direct support; or has a knack for section work or jazz groups… Any time that we see initiative being shown, that's always worth supporting. (National coordinator, 07-05-2013)

As regards the adoption or adaptation of the ES methodology, the direction is aware of the national and local contexts and strives to foster the necessary and essential adaptations to ensure cultural diversity and autonomy concerning the ES as a primary source of inspiration.

In summary, we recognise that any significant expansion of the OG as an activity system has to take into account the cross-referencing of the five principles set out above and the four questions raised at the beginning of this chapter (Engeström, 2001). At the present moment, and given its eight years of existence, it only seems pertinent to raise some questions that bear the potential for significant expansive transformation:

1. *Who are the subjects of learning, how are they defined and located?*

   In the OG, the learning subjects are not only the students but also their teachers and families. Therefore, the first and second principles (the OG and its multiple voices) are involved in replying to this entire question. Should we return to fig. 3, we may easily perceive how the mediating *artifact* (the music, the orchestra, the instrument) and the collective musical practice (object) generate a complex network of individual and group actions that, in turn, determine the ways in which the learning subjects bring their different life stories into the system as "a community of multiple points of view, traditions and interests" (Engeström, 2001: 136).

2. *Why do they learn, what makes them make the effort?*

   In this aspect, Engeström draws upon the theory of situated learning proposed by Jean Lave and Etienne Wenger to affirm that "motivation to learn stems from participation in culturally valued collaborative practices in

which something useful is produced" (Engeström, 2001: 141). This is thus where we may find an anchor in OG practices. Given the ES inspiration (historicity) and the apparent ambiguity between fostering musical excellence all the while proclaiming that the project is primarily about social inclusion (contradictions), it would seem that the continued motivation to learn and encounter new perspectives on life through collective musical practices has to be subject to careful attention. This is most important especially taking into consideration the permanent demands imposed upon participants in keeping with their social and economic contexts.

3. *What do they learn, what are the contents and outcomes of learning?*
   We may approach this question by drawing on contributions made by the first, third, fourth and fifth principles. It is in the orchestra as a whole, within the coexistence of old and new concepts and procedures (adopting/adapting the historicity of *El Sistema*) that teaching and learning take place in terms of the expected outcomes of significant musical development. Working the ambivalence generated by the two major objectives – social inclusion and musical excellence – there is the expectation that the OG undergoes successive cycles of expansion that shall determine the terms of its future.

4. *How do they learn, what are the key actions or processes of learning?*
   The development of the OG, since its foundation in 2007, has steadily proven that dialogue and debate are vital to its survival in order to ensure significant teaching and learning. This process has to be accompanied by continuously listening to the multiple voices that act within its scope to ensure the focus on the common objective: improving the collective musical practice while including the greatest possible number of children. Within this framework, it is essential to positively overcome these contradictions and take up an independent position regarding the dichotomy of 'adopting/adapting' towards the ES. The actions determinant to any

transformative expansion should certainly span questioning, analysis, implementation and, once again, reflection.

Some final reflections

In terms of the Mintzberg model, the standardisation that we identified in the processes and products, as currently practiced by the OG, and, above all, through the introduction of the role of orchestra supervisor, seems to generate apparently unsolved contradictions. While this conveys the need to support a greater level of OG decentralisation (more in tune with Engeström's expansive transformation), in which school coordinators and teachers would be welcome to deploy their initiatives and take on more power within the organization, it remains a fact that the OG presents a limited level of both vertical and horizontal decentralization..

It would therefore seem fair to speculate up to what point might the concentration of power in a reduced number of core figures end up hindering the *Orquestra Geração* from prospering within a framework of reference in which its identity gets highlighted as a project effectively autonomous from that of *El Sistema*.

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