

**On the possibility of grounding a model of science museum mediation  
which is open to experimentation**

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**Abstract**

Could we think of museum mediation itself as a scientific experiment? Which movements could be made in the mediation work based on the inventive character of science? To what extent could Maturana's concept of science and Gilles Deleuze's philosophy contribute to conceiving other possibilities for the mediation work and for the museum education? Here we discuss those questions on the basis of our experience in educational projects at Espaço do Conhecimento UFMG, one of the science museums of Universidade Federal de Minas Gerais, in Belo Horizonte, Brazil.

## **Introduction**

Considering that every science museum has its inherent particularities, such as kinds of exhibits, utilization or no utilization of interactive technological resources, hands-on activities, etc., the methods adopted for the mediation work differ substantially. At Espaço do Conhecimento UFMG, a museum of Federal University of Minas Gerais, in Belo Horizonte, Brazil, the current exhibit presents the origin of life and the human history to the audience, through a multidisciplinary view and by involving diverse fields of knowledge. Quotes from Friedrich Nietzsche and writer Jorge Luis Borges were included in the beginning of the exhibit to emphasize the unfinished nature of human knowledge. In some points, throughout the exhibit, however, the scientific discoveries are presented as indisputable truths, with few interactive devices or hands-on activities. Such scenario presents a great challenge for the museum mediator, since the exhibit by itself offers the visitor neither the scientific experience, with its unpredictability and uncertainty, nor any contact with science's critical nature. Would it be possible to provide the scientific experience through the mediation work, regardless of the kinds of exhibits and activities presented at museums? We believe so, but, in order to proceed, it is relevant to clarify which concept of science or scientific work scientific experience we are referring to.

According to MATURANA (2001), all of us – apart from being professional scientists or not – are scientists in our daily lives, since we are constantly formulating hypotheses to explain our observations and personal experiences. This is the science we believe can be experienced in mediation work, regardless of the level of technological interactivity, even if you are in a museum that has prioritized the description of methods and results of scientific experiments rather than devices that show the phenomenon in real time. We believe that this scientific practice can be experienced in museums not only by the visitor, but also by the mediator, who works daily at museums. Still in MATURANA's concept, the scientific practice is established on phenomena explanation through reformulations of the experience, which, for the observer (whether visitor or mediator), reconstitute the same phenomenon that he or she wishes to explain (MATURANA, 2001). Therefore, in every visit or every mediator workday, a different

experience occurs, new hypotheses arise, different scientific adventures emerge, and new connections are made.

As stated by MATURANA (2001), the scientific practice is less committed to the truth than it is to the experimenting, to the explanation, to the satisfaction of the scientist's curiosity. Science has validation criteria explanation, but there is never only one explanation. To explain a single phenomenon, science considers the possibility of multiple explanatory hypotheses, also because, in this perspective, there is not only one truth. In this context, Gilles Deleuze's philosophy seems to us very inspiring for the development of the mediation work in science museums. Like other philosophers of difference, Deleuze criticizes the philosophy of the subject, the identity philosophy, showing us that the human being is in constant movement, the constant movement of coming to be. In the suspension of identifying principles of beings and things, the thought refers to experimentation, becoming a thought of plurality, in which what matters are the flows, the intensities, the possibilities for new connections. Influenced by his philosophy, we tried to think the mediation based on some concepts formulated by Deleuze and Félix Guattari.

The concept of rhizome, adapted from botany, seems convenient when speaking of multiple kinds of knowledge that are produced and mingle, working by unpredictable connections, proliferating all over like grass that spreads out. The rhizome opposes the image of the tree, with a trunk as the main axis, connected to branches, in which a fruit cannot communicate directly with another one, in a structure following a "structural and generative" model (DELEUZE; GUATTARI, 1997, p. 29). In the tree image, a thought may multiply, but that can only happen in a pattern that obeys a hierarchy.

"The arborescent model submits, at least ideally, thought to a progression from principle to consequence, sometimes leading it from the general to the particular, sometimes trying to ground it, anchor it forever in a soil of truth." (ZOURABICHVILI, 2004, p. 52).

By conceiving mediation as a scientific experience, the mediator's work ceases to be a simple exposition of information, with given meanings, or a repetition of preconceived explanations formalized by the academy or the museum institution. On the

contrary, mediation and the kind of interaction it produces with the visitors must be considered as an endless process of creation, a spiral nonlinear process of collective negotiations of meaning, endlessly assigning new meanings to facts. But what must the mediator do in order to assure that this happens?

## **Methods**

At Espaço do Conhecimento UFMG, the mediators are students of diverse undergraduate courses (Physics, Anthropology, Social Science, Biology, Theater, Law, Geography, History, etc.). During the first week of work, we usually hold a meeting in order to familiarize them with the museum and to discuss some themes related to the exhibit. From then on, mediators are advised to carry out a weekly immersion in the exhibit themes they found most interesting, researching the background of the information presented, the scientific methods employed, the social and political context at that time, and alternative approaches about the same theme. The continuous training of mediators occurs through weekly meetings, in which each mediator shares with the group the results of his or her investigation on his or her themes of interest, in addition to sharing experiences from the process of mediation in the museum.

During the mediation, a vertical, downward transmission of a unique, truthful, and systematic knowledge is not expected, as in the arborescent model/conception, but the broadening of the interaction spaces, as in the rhizome image. According to Deleuze and Guatari's concept, the rhizome represents an open system with multiple entrances, possibilities of interactions and connections in many different levels, keeping in mind that there is not only one passageway, but a multiplicity of transversal communications between different lines.

In this perspective, there is no method to be followed by mediators. An important point is that, first and foremost, the visitor's questions and previous knowledge must be taken into consideration. The mediator should be open to the knowledge, history and memories that come with the visitors. Then the challenge is to allow the movement to happen, in unstoppable "becomings", keeping in mind that "becoming" is never to mimic, nor to do as, nor to adjust to a model, be it of justice or of truth. There is no starting point, or one at which one arrives or must arrive (DELEUZE, PARNET, 1998).

Taking as an example the visits of children that come to the museum with their teachers, we notice that most of the time they are previously told to absorb information with given senses, specially because the memorization of such contents may be assessed by teachers right after the visit. We observe that the children are treated merely as receivers of information, and their interests or the particular meaning the visit acquires to them is not relevant.

What must the mediator do in order to deconstruct that situation, promote meeting and encourage dialogue? Observe the environment in which he or she is acting, observe the visitors, listen to their stories. No prejudice. The mediator must consider the “person visiting museum” phenomenon, not worrying about classifying the visitor according to age or social-educational level. Since we are not neutral observers, the first impression of the visitor does affect us; hence the need for a cautious look to protect from preconceived ideas, institutional constraints, and fixed identities, in order to experience what is presented to us.

The mediator must observe, think, investigate, devise hypotheses and experiment.

“[Do] not judge previously which is the good path for thought, resort to experimentation... Thus, thought alludes to experimentation... thinking is not representing (the goal is not adaptation to a supposed objective reality, but a real effect that relaunches life and thought, displaces what is at stake for them, relaunches them further and somewhere else); try different paths.”  
(ZOURABICHVILI, 2004, p. 52/53).

Value the scientific method, repudiate scientism.

So, the challenge is to follow the multiplicity of thought, to evade the stuck dichotomous binary logic "is or is not" or "right or wrong". It is necessary to detach from a “prior cognitive subject” and from a “supposed given world” (KASTRUP, 2009, p. 31) so as to allow new possibilities of combination. Therefore, in mediation there are no rules to be followed, but innovation and experimentation to be done, seeing the mediator as a researcher, an inquirer, and not as a lecturer. The mediator enables learning, but he also learns. The French word *apprendre* combines both meanings: learning and teaching, in a

joint action between the one who teaches and the one who is taught, the one who speaks and the one who listens and receives. This dialogue must be authentic; it has to free itself from the power forces established by the arborescent model.

### **Results and conclusions**

“The least to be said is that it is not easy to continue in this point: under this relation, the rhizome is the anti-method method, its constitutive ‘principles’ are caution rules about every evidence or reintroduction of the tree and of the Uno in thought” (ZOURABICHVILI, 2004, p. 52/53).

During the past four years, working at Espaço do Conhecimento UFMG, we have observed that, as being mediators, we require constant self-surveillance. Being products of a rigid school system, the probability of subjecting ourselves to the arborescent model/conception is high. It is much easier to work guided by a rigid methodology, with previously established goals and predictable conclusions. very frequently we catch ourselves simply selecting and eliminating from the visitor’s speech, those topics which are seemingly useless, which make no sense in the conversation about science, just to carry on the conversation as we had originally planned. Thus, the visitors turn out to be deprived of simple experiences of experimentation and effect, without need for explanation, even though we consider that it is exactly in the lack of explanation that each one usually feel or notice something that affects, transform and puts him (or her) in motion.

Finally, we would suggest that science museums should be planned in a way to provide, to its visitors and mediators, meetings of all possible forms: not just of physical bodies, but also of memories and of all kinds of knowledge. Meetings of minds and bodies that affect each other, allowing the motion to occur with the dissemination and creation of new knowledge, and that is also built with a sense of belonging, through a process influenced by life experience and understanding of the world of each visitor or

mediator. We believe that this kind of museum may produce knowledge that is alive, joyful, and connected with the world, with all its unpredictability.

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