

## **Aging and geriatric dentistry: Interdisciplinary, labyrinths, puzzles and other illusions.**

Dalva Maria Padilha

Associated Professor

Community Oral Health Department, Faculty of Dentistry, Federal University of Rio Grande do Sul.

Geriatrics and Gerontology Institute, Pontifical Catholic University of Rio Grande do Sul  
Porto Alegre  
Brazil

### **Abstract**

The purpose of this paper was to reflect on transdisciplinary character of ageing disciplines. Geriatric Dentistry is a new Dental specialty in Brazil. As a dentist, beyond the questions inherent to the aging process, I must try to understand how aging is processed with and without oral health. Which are the effects of oral health on the general health and what are the effects of systemic diseases and their treatment on oral health. Again, questions beyond organs, systems, cells, and molecules linked to ageing specialties are not enough to build the context. The individual (and what individual?) within the society (and which society?) must compound the framework of our attention.

Labyrinths and puzzles were used as graphic metaphors in order to try to explain the transdisciplinarity. We use the labyrinth model in order to reflect on perspective of body compounded by several intricate parts. The **individual** as a labyrinth is set in the **society**, another labyrinth itself. This intricate relationship is full of other complexities and gearings, with other multiple views, spectrums, and shadows, including not only the fields of politics and economy, but the fields of ethics, spirituality and illusions as well. Puzzles were used as a representation of a lack of transdisciplinary and how aging-related sciences use to work, with no notion of how is the final image formed. We just try to put several pieces together. The scientists of different disciplines have worked trying to move forward juxtaposing at the trial and error, pieces and pieces. However, every ageing discipline still remains as a piece forgotten because we do not have the complex view of “the whole”. In conclusion the graphic explanation of transdisciplinarity may not take us to another incomprehensible labyrinth or even to an invisible final image of a puzzle. The view of the limits of each piece in the complete puzzle, brings the notion of the complex (un)known whole, with many frontiers to mix.

## **Aging and geriatric dentistry: Interdisciplinary, labyrinths, puzzles and other illusions.**

In the beginning I thought about a labyrinth. As a metaphor of existence and the conception of unity and plurality that exist concomitantly. Man, the biological structure, the course that has a central path, the escape and liberation that shows his own life. But I also thought a labyrinth as a simplifying idea of our body's context and its complexities. In ourselves as mechanic structures of little loopings which has to be attached in order to machine works. I thought in both, our exterior and interior. I thought the labyrinth almost as a synonym of a machine. Compounded by little and lowermost pieces. A structure that is able to produce both little mistakes and big catastrophes. (Goldberger 1996). We, ourselves, a knot and knots of a same thread used to trace Theseus's path. Or as bread crumbs lose throughout Hansel and Gretel's forest (Grimm Brothers). Little pieces that may be lost when lose, taken by the wind, ingested by birds, buried by dust. What other explanations could I offer? A metaphor for our body. I thought about the labyrinth because the theme was Transdisciplinarity and geriatric dentistry, a new dental specialty and because I had to explain to young students what it meant, and my biggest doubt was if I would be able to do it.

I thought I could start this way:

“As the prefix "trans" indicates, *transdisciplinarity* concerns that which *is* at once *between* the disciplines, *across* the different disciplines, and *beyond* all discipline. Its goal is *the understanding of the present world*, of which one of the imperatives is the unity of knowledge” (Nicolescu 1997)

Then I thought that I would remind them that aging issues are only linearly and isolatedly encompassed in all senses and in all spheres by all professions. We, who are interested in aging issues, are all “living” in corners of a labyrinth, looking for our own existence within our own navels.

I thought on the labyrinth exactly as a human body. When isolated, we loose ourselves in explanations about our own backgrounds and sciences. Lost in the functioning of the unique mass that is based on the plurality of systems and mechanisms. The complex. The complex that aging sciences have to face, facing each other in a perplexed way. Perplexed and inadequate. Inadequate because they are small. Inadequate because they search for simplicity of definitions. Inadequate because several times these definitions are inadequate. Inadequate because they establish successive definitions that are discontinuous, simpleton and inadequate. A stream of inadequacies that contributes more to the isolation and lack of understanding than to a conceptual framework.

Would this conceptual framework be transdisciplinarity? Does a conceptual framework correspond to a multiplicity of modes of knowledge? When combined and interacting, do they constitute something called transdisciplinarity? Does a new science come from it? Are new paradigms proposed? Could I compare this conceptual framework to a labyrinth?

But in the beginning all I thought about was on the labyrinth as body and object.

Later I found drawings trying to represent what transdisciplinarity would be by means of some graphic image. One of them was an open triangle full of arrows and rectangles. I took the arrows's end from the model and I faced the labyrinth

again. Once more the labyrinth juxtaposing both the interior and the exterior with difficult exits. The yes, the no, the inside, and the outside. Life and death in all their interweaving. And we who study aging, lost in the corners of this net/labyrinth looking for little answers in our little sciences looking at our own little navels.

As much as our sciences, our answers, and navels are little, this dispersion at the labyrinth imposes different interpretations of problems. And we mainly look at “the” problem without looking at the whole that occasionally causes the problem. And our “solutions” may cause new and new problems. But at the beginning all I thought about was the labyrinth as both body and object. I realize that a labyrinth cannot represent transdisciplinarity. Transdisciplinarity imposes itself because the complexity of the problems made necessary the gradual approximation and association of disciplines in different degrees, from the simpler one, the one of the multidisciplinary, to the more complete one, the one of transdisciplinarity (Chaves 1998). Transdisciplinarity imposes the integration of disciplines (sciences) beyond the frontiers/limits of the departments and beyond the frontiers/limits of the academic scope (Carrizo et al 2004)

Limits and complexities of a labyrinth are beautiful and lyric metaphors, nothing more than that.

But

“Since everything, then, is cause and effect, dependent and supporting, mediate and immediate, and all is held together by a natural though imperceptible chain which binds together things most distant and most different, I hold it equally impossible to know the

parts without knowing the whole and to know the whole without knowing the parts in detail” (Pascal 1660).

So, crossing frontiers is not enough by itself. Integration, which would no be mere rhetoric, is necessary. And this does not mean sharing the handle of the bag with the other one so that it is less heavy. It is not only breaking walls (the labyrinth again) but mixing the blood instead. By working with the body and the health of the body we work with **systems**; within these systems, **organs**; within these organs, **cells**; within these cells, **molecules** and **biochemical/biophysical processes**. However, we cannot loose the perspective that all of this compounds the **individual** at the intricate labyrinth, previously proposed, and that this individual is set in the **society**, another labyrinth itself, with other complexities and gears, with other multiple views, spectrums, and shadows, including not only the fields of politics and economy, but the fields of ethics, spirituality, illusions, etc. as well.

Later I remembered that once, somewhere, I read a text with a short story about playing with puzzle assembling. The text said that the ultimate challenge was to join the pieces without having the notion of the image that the puzzle forms.

Then I thought on this model as a “translator” of a lack of transdisciplinarity. At the aging-related sciences this is how we use to work. No notion of how is this image formed by several pieces. The purpose has been to move forward juxtaposing at the trial and error, pieces and pieces, trying to insert them at the correct place. We do not know what the final picture is. The aging process is complex; the health status of elderly people is complex. But as a dentist I have always thought that I had in my hands a forgotten piece of this context. My

considerations are based mainly on the point that there is no health if we have no oral health, and further, that oral health is an essential part of the elderly quality of life. Mouth takes part in several main physiological functions related to individual survivorship not only related to food intake, swallowing or nutrition, but to relationships in life through speech, communication, self esteem, esthetics, dignity, and pleasure. My considerations about the importance of oral health were reinforced when the relationship between periodontal disease and cardiovascular disease started to point oral health at the glance. (DeStefano et al. 1993) However, causal association was in doubt because dental health could be a general indicator of personal hygiene and health care practices and behavior. Again the notion of the whole would have to be searched for these interpretations.

As a dentist, beyond the questions inherent to the aging process, I must also try to understand how aging is processed with and without oral health. Which are the effects of oral health on the general health, and what are the effects of systemic diseases and their treatment on oral health. Again, questions beyond organs, systems, cells, and molecules linked to our specialties are not enough to build the context. The individual (and what individual?) within the society (and which society?) must compound the framework of our attention, mainly when we live in a country of social inequalities that undoubtedly affect health and oral health of older individuals. Other questions, therefore, compound the puzzle of which we do not know the picture of the whole

The piece of the puzzle at the dentist's, or medical doctor's, or nutritionist's, or educator's or politician's, or whoever's hand does not represent anything else than a piece if these professionals do not understand their part of their labyrinth,

and if the labyrinth of all becomes “the” whole. The graphic explanation of transdisciplinarity then may not take us to another incomprehensible labyrinth or even to an invisible final image of a puzzle. I can only remember that we only know enough of illusions. The view of the limits of the complete puzzle’s pieces brings us back to reality. It takes us to the illusion of the complex of the (un)known whole. Our illusion for now is that we can mix frontiers. But I still have one forgotten piece on my hands, perhaps like I forget of the other ones’ pieces as well. But this is also another part of the story.

## **Bibliography**

Goldberger AL. Non-linear dynamics for clinicians: chaos theory, fractals, and complexity at the bedside. *Lancet* 1996;347:1312-1314.

Grimm Brothers. Hansel and Gretel - available in <http://www.fln.vcu.edu/grimm/haenseleng.html>

Nicolescu, B The Transdisciplinary Evolution of the University - Condition for Sustainable Development-Talk at the International Congress " Universities' Responsibilities to Society ", International Association of Universities, Chulalongkorn University, Bangkok, Thailand, November 12-14, 1997 - available in <http://nicol.club.fr/ciret/bulletin/b12/b12c8.htm#note>

CHAVES, M M. Complexidade e transdisciplinaridade: Uma abordagem multidimensional do setor saúde. *Revista. Bras. Educ. Méd.*, p. 8, 1998. in portuguese

Carrizo, L. Pietro, M. Klein, J. Transdisciplinariedad y Complejidad en el Análisis Social - available in <http://unesdoc.unesco.org/images/0013/001363/136367s.pdf>

Pascal B. Pensees translated by W. F. Trotter - available in <http://oregonstate.edu/instruct/phl302/texts/pascal/pensees-a.html>

DeStefano F, Anda RF, Kahn HS, Williamson DF, Russell CM. Dental disease and risk of coronary heart disease and mortality. *BMJ*. 1993 Mar 13;306(6879):688-91.