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Brain and Sex

When I started to ponder the title of my speech to address you my dear colleagues, teachers of Spanish and Portuguese, two words converged simultaneously: Brain, which is an interest of mine, and Sex, which is an interest of most of us. Alàs the title of my speech is a misnomer; I will not be talking about Sex as we know it but Sex: meaning gender.

If I brought to your attention all the research that has been done on the Brain, on the cells *neurons* or the neo-cortex, where reading, planning, analyzing and decision making occur, we would be here until the wee hours of the night. If I talk about of all the intricacies of the brain, the cerebellum, which controls movement, and the cerebrum, which controls interpretation and memory, we would be here until breakfast.

Have you ever said to your love one: I love you with all my brain? It sounds so unromantic! But dear colleagues and friends, it is the brain and not the heart that deals with our emotions. The brain regulates and monitors our breathing, movements, and heart rate.

Let us quickly examine the brain. We all have one, although at times we might think we have none, or that we have two since the brain is divided into two Hemispheres, the Left Hemisphere with specific functions of: speech, language, math and logic and the

Right Hemisphere with specific functions of visual imagery, face recognition, spatial abilities, music and emotions. Both hemispheres usually work and communicate with each other in harmony, but sometimes they have power struggles. Did you hear the Univision announcer at the Uruguay and Ghana match at the World Cup say? “El cerebro les ordena a las piernas que corran, pero ellas no quieren obedecer.”

Although there is much to be said about the brain, I would like to focus on Memory and its importance to us as teachers of Spanish and Portuguese.

What is Memory? Eric R. Kandel, winner of the Nobel Prize for Physiology in his book: *In Search of Memory* defines memory as: “The ability to acquire and store information as simple as the routine details of daily life and as complex as abstract knowledge of geography or algebra.” 9-10.

Our brain is bombarded with thousands of chunks of information per second. Fortunately, like the boss who has his calls screened by his secretary, the brain has the RAS (reticular activating system) and the Thalamus to screen the “calls”, (information), that will go through. When this happens, the brain has to decide if the information will be stored in the Short-Term or Long-Term Memory.

The Short-Term Memory can store a maximum of nine things at a time, on average seven, and it can hold information for about fifteen to twenty seconds or more as long as we keep thinking of it. Otherwise, after a few minutes, it will be forgotten. For example, if we are teaching the use of Ser and Estar, the first stumbling block in learning Spanish, we often teach one rule of Ser at a time, and keep repeating the rule to allow students to think of it.

The Long-Term Memory stores more information than a million encyclopedias. How long ago did you learn how to put on your socks? That information is stored in your Long-Term Memory, as well as your first kiss. Long-Term Memory gives us a lifetime benefit.

What are the memory implications for us language teachers and for our students?

We all want our students to succeed, and we wish they could store the instruction we give them and the materials we prepare for them in their Long-Term Memory. To succeed in this endeavor, what strategies have proven to be successful? A variety of them, and we learn new ones each time we come to our A.A.T.S.P. conferences. Some seem to revolve on the same axis: make the class lively and entertaining. But some will argue that we are in the classroom to teach not to entertain. Although that may be true, we must take into consideration that no two-brains are alike, not even in twins, and that students have different learning styles, which is why in order to reach a large audience, we use a variety of teaching methods. Why not have some fun in the process and help students to store the information in their Long-Term Memory? In my Spanish 1 class when I teach the Present tense of regular verbs, I use a song that I bought in one of our conferences. My students love it and they learn the conjugations so much quicker. In our literature classes, most of us have experienced that as we act out the various characters, for example in “La casa de Bernarda Alba” students enjoy the class more, and can discuss the story with ease, and in more depth. We need to keep reminding ourselves that excitement and emotions trigger the release of nor-adrenaline, which is a memory fixer. So let us keep spicing up our lessons.

Do you know what the attention span of a teen-ager is? between ten and fifteen minutes. Therefore, when we are teaching a class of High School Freshmen, we must remember that the first fifteen minutes are precious. This is the time when we have their attention. It is the perfect time to teach the most difficult part of the lesson, and right after, we must review and repeat the same information in different ways. As the clock in the classroom keeps ticking, students begin to lose interest, some look at the clock. That is why in some classrooms we might see a poster next to the clock with subliminal messages like: “Your future is in your hands”. You would think the brain needs time-out, but in fact, the brain works 24 hours a day. During this time we need to change pace and strategies. For instance: sending students to the board for competitions, or moving students from one row to another for mini-dialogues, and then, as if by a miracle, we will see a surge of energy and interest in the class. Remember what I told you earlier about emotions and the release of nor-adrenaline? We need to grab the moment, and make students do translation exercises, or other activities that can show us if students are grasping and retaining the information we are giving them, which will hopefully, be stored in their Long-Term Memory.

Do you know what the attention span of adults is? Twenty minutes. If we are presenting a paper or a lecture of 45-50 minutes, we cannot simply read page after page. After twenty minutes of our reading, some listeners will be texting, and some might even be listening to their Ipods. What are we to do? Collect all cell phones and Ipods until we are finished presenting? We need to remind ourselves that we are in charge of the class or lecture and that with creativity and sensitivity we can help students stay tuned and in

doing so, help them store the information we are giving them, in their Long-Term Memory.

To introduce my second point which is sex, meaning gender and its implications in language learning, I would like to briefly mention the research of Ann Moir, Ph.D., co-author of the controversial book *Brain-Sex*. According to Moir: "...The hormones... determine the distinct male or female organization of the brain as it develops in the womb." 19. So, according to Moir's research, right after conception, while the brain is developing the gender differences in our thinking, feeling and behaving are established.

Many studies have tried to explain gender differences in language expression. Bennet A. Shaywitz, M.D., a professor of Pediatrics at Yale University School of Medicine, and a few of his colleagues used an FMRI to study males and females to see how the brain reacted during a variety of tasks: orthographic, phonological and semantic. Dr. Shaywitz states that: "During phonological tasks, brain activation in males is lateralized to the left inferior frontal gyrus regions; in females the pattern of activation is very different, engaging more diffuse neural systems that involve both the left and right inferior frontal gyrus." 607. Does this study infer that because of brain structure, women may have a facility for language?

To the above finding, let us add the role that the Corpus Callosum plays in the way men and women verbally express their emotions. The Corpus Callosum is a bundle of nerves, fibers, which connect the two hemispheres of the brain. Although there is no difference in size of the Corpus Callosum in men and women, in most women the fibers are thicker; these extra fibers, wires we have, allows more rapid communication between the two sides.

Now, let us add one cultural fact, the “machismo” mentality, which does not allow a two-year old boy to cry or verbally express his feelings when he falls because “men don’t cry”! So, as we look into these studies and facts, we could surmise an inadequacy at language manipulation and or verbal expression in men. But what happens along the way, that allows you male teachers, to be perfectly fluent, not only in one language, but in two or more? We need more research, and we need answers to the questions asked by Eric R. Kandel, “To what degree do men’s and women’s brain structures and cognitive styles differ? Are those differences innate, or do they stem from learning and socializing?” 316.

To conclude, I have given you a romanticized overview of the brain. However, if we pick up a book about the brain we will discover the incredible research that has been done and the present advances in the neurosciences; for example: that ADD, in some cases, can be related to a malfunctioning Corpus Callosum or low levels of dopamine, or what Gerald Edelman, Md., Ph.D winner of the Nobel Prize for Physiology or Medicine, in his book *Second Nature*” states: “As powerful as brain science is, however, it is subject to limits. Its detailed exploration of how the brain works remains at an early stage.”65.

Das is alles, Es todo, C’est tout, Aquele è todo. Thank you!

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Works cited

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