Women in Math: A Not so Girly Dream

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We often hear that the first years of formal education are essential for the proper development of the skills and interests children will be exercising throughout their lives, and not only during their school years. And yes, many studies have indeed proved that it is precisely during that early stage when boys and girls begin to realize whether or not certain subjects “look” or “sound” appealing for them, depending on different factors such as their perception on how easy or difficult it is, or even on how hard will they have to work in order to understand what is it about and thus get a good grade for that course.

I very well remember my very first years in elementary school and how much I suffered when it became clear to me that my performance in math had to stay above average and that I was expected to like it a lot. Being the daughter of a mathematician, everybody around me took it for granted that I loved math and therefore there could not be any difficulties interfering with my quick understanding of all the content in those courses. I really cannot tell if it was those math courses or my social and family circle that made me question my personal likings as well as my abilities towards that discipline, despite the fact that I was doing pretty good.

Later on I found out that parents and teachers do play a fundamental role in the construction of concepts like self-esteem and self-assurance during childhood, as well as in building a “collective imagination” regarding what they think STEM careers are and who is more or less likely to become successful in them. That is why parents and teachers of primary school children should be aware of the impact their comments and attitudes may have on the confidence and preferences of their students.

Even though there was a close family link with math, my early school years were not a piece of cake when it came to other science-related courses like biology. My cousins and most of my close friends always argued that math was a

hard bite while other courses were a lot easier to pass. It is hard for me to depict gender biases in our premature perceptions of STEM disciplines; however, my belief is that both girls and boys my age clearly indicated no interest in pursuing anything related to math, even though some of the latter could envision themselves as engineers. It has been common for adults to ask children “when you grow up, what will you be” and at my time it certainly was common to find girls answering “dentist”, “physician”, “nurse”, even “housewife” or “mother”, but certainly not “engineer” nor “mathematician” or “physicist”.

Many authors have indicated that the family environment and the socio-economic context have great influences on the likes and dislikes children develop toward certain disciplines. It has also been found that girls trust less in their capacities for STEM than their male peers, which is revealed in lower female interest and low female school performance in those fields. The same goes for teachers, who can exert a great influence on the rise of interest and understanding towards these or some other disciplines.[1]

Curiosity and confidence developed in childhood have a strong impact on future decisions and commitment towards school related matters. All gender-related messages sent by fathers and mothers to their offspring, either implicitly or explicitly, will surely influence their predisposition towards certain subjects and even towards pursuing higher education degrees. In my case I wonder if it was my father’s love for math or the zero limitations for us as a girls when it came to dreaming about our future, that my sisters and I ended up enrolling in careers closely related to STEM.

Acknowledging that intellectual concerns and perceptions emerging at that early stage of life do not define forthcoming elections that will be made later in life, it is nonetheless convenient to understand the factors that enhance or inhibit the interest and taste towards scientific disciplines during childhood. This will enable the design of strategies to prevent the emergence and prevalence of gender stereotypes, but also to stress other educational paths to ensure that both girls and boys have the same opportunity to develop skills, enjoy an active participation and embrace a taste for STEM. Not every child has a father (or mother) mathematician, after all!!

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[1] For a comparative study carried out in Elementary Schools of Buenos Aires, Argentina, Mexico City, Mexico, and Sao Paulo, Brazil, please refer to: http://www.catunescomujer.org/infancia-ciencia-y-tecnologia-un-analisis-de-genero-desde-el-entorno-familiar-educativo-y-cultural/

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