

ITALIAN HISTORY

The decimal units system and San Giovanni Bosco: A singular meeting between science and pedagogy

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One of Don Bosco's most noteworthy pieces of work is of particular relevance to the teaching of metrology: *"Il sistema metrico decimale ridotto a semplicità preceduto dalle quattro operazioni dell'aritmetica ad uso degli artigiani e della gente di campagna"* (literal translation: *"The decimal metric system reduced to simplicity, preceded by the four arithmetical operations of use to craftsmen and country people"*), published by Paravia, Turin in 1846.

In Italy the decimal units system was introduced at the same time as a number of other innovations - this also happened to be the time when the French armies headed by Napoleon Bonaparte invaded the Kingdom of Piemonte - although discussions on the uniformity of the units system as a useful scientific tool had already started some time before.

In 1793 when the French National Assembly began studying a new units system based on the length of the Earth meridian, some Italian States (*Granducato di Toscana, Repubblica Cisalpina, Repubblica Ligure, Regno di Sardegna, la Repubblica Piemontese*) contributed to the French project, which is considered to be the most excellent example of scientific cooperation over the times.

When the French armies arrived in Italy, conquering its most important nations, they introduced by law the "metrication" of the units system - thus eliminating *"de iure"* the preceding systems.

In Piemonte that happened in 1809, but while the metrication law began to be applied by sending the new unit standards and the related conversion tables to the municipalities, the Congress of Wien (1814) also restored *"inter alia"* the old units system all over Europe.

But the charm and the force of the initial idea on which the decimal units system was based soon began to be recognized by intellectuals, although scientific interests were often mixed in with political motivations.

So, in Piemonte, a Royal Decree was promulgated which provided for the decimal metric system to be adopted as a mandatory units system.

But the promulgation of a new law is not enough to change long-standing habits based on the use of traditional weights and measures units and on multiples and sub-multiples originally determined by means of continuous multiplying and dividing by two.

Disadvantaged people were a major hurdle to the diffusion of the new decimal system because they predominantly continued to use the ancient weights and measures in their everyday businesses.

On the other hand, Public State Schools, which were introduced in Piemonte in 1822, were not mandatory and thus not able to help to efficiently spread the word about the new system amongst ordinary people.

However Public State Schools did contribute to promoting the new decimal system by means of teaching courses - though these courses were of more relevance to educated people than to the common mortal lacking a sound mathematical and scientific background!

The Central Government invited the local authorities to do their best to increase the coverage and usage of the new units system throughout society.

The Roman Church, with its network structure and authority based on the medieval custom of acquiring and applying knowledge, played a primary role in contributing to spreading the word concerning the new units system.

Don Bosco's work was initiated in a very complex historical and social landscape with the clear intention of encouraging disadvantaged people to use the new decimal units in their everyday businesses. His book is conceived as a dialog and such a choice was not by chance since he knew, as a well established teacher, that he would have to use a friendly teaching tone to capture the masses' attention.

The choice of the dialog form for his work was determined as a means to reduce or even eliminate the cultural distance between the writer and disadvantaged readers, in order to involve them in a knowledge acquisition process as gradually as possible.

Don Bosco "dramatized" his work by means of a theater play, which was performed in the rising Oratories of the Salesian Congregation where the play combined amusement, reflection and learned instruction.

Don Bosco's work was published four years before the mandatory introduction of the metric system in Piemonte and even before that, Vicar Apostolic General Mons. Filippo Ravina advised parish priests to contribute to spread word about the new units system.

The challenge that Don Bosco faced with enthusiasm was not only a pedagogic one but a social one too: by allowing common people to understand the decimal metric units system, he raised them to the rank of "citizens" who were able to actively share in the economic and social life of their community.

Don Bosco's work was very successful among contemporaries and that is witnessed by the twenty-eight thousand copies and more that were sold, as well as by the praise of Monsignor Filippo Farina, Bishop of Asti.

Efforts made by such illustrious men - Don Giovanni Bosco and others - should encourage our contemporaries to reflect on the need to foster and promote the "metrology culture" in order to equally extend the scope and application of metrology to non-academic environments. ■

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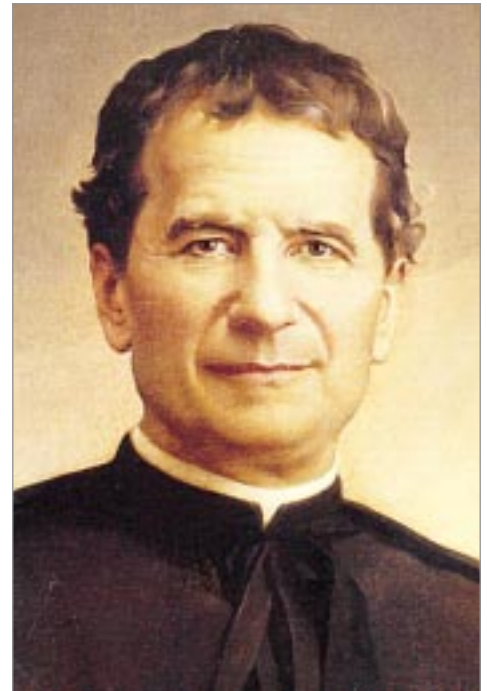
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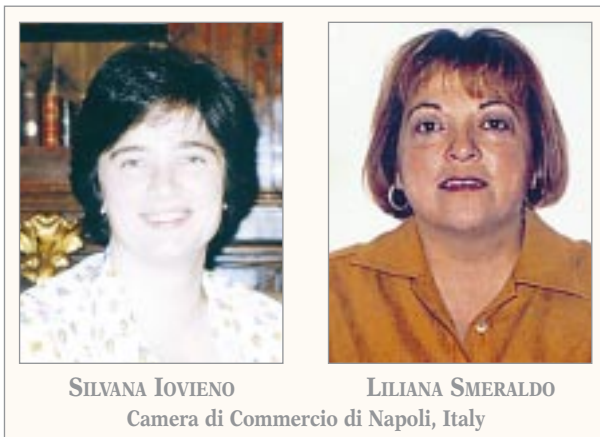
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**IL
SISTEMA METRICO
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RIDOTTO A SEMPLICITÀ
PRECEDUTO DALLE QUATTRO PRIME OPERAZIONI
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AD USO
DEGLI ARTIGIANI
E
DELLA GENTE DI CAMPAGNA
PER CURA DEL SACERDOTE
BOSCO GIO.**

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