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The scientific societies and its role in creating a socially responsible science

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Abstract

A civil society represents a content value on a growth and development path of each democratically constituted government. Scientific (and professional) societies have filling the space created by the strict division between universities, whose role is first to transmit knowledge, and second to fulfil intellectual commitments. On the other hand, there are institutions devoted to science itself, research, and experiments. Scientific and professional associations include registered associations of scientific and professional workers based in the Republic of Croatia, which have been founded with scientific and professional activities in mind, for the purpose of promoting and developing the science and professions (organization of conferences, publication of scientific journals and other journals, etc.) as well as providing expertise in education and acquiring new knowledge in the fields of science for which they were established. Scientific societies as non-profit organizations, apart from their concern for the benefit of their members, have demonstrated a great ability in creating an infrastructure that is invisible to the eye, by setting up and opening communication channels.

Civil Society

The definition of a civil society implies that citizens of different groups, initiatives and organizations, as well as individually, represent different interests and values in public.

Pluralism is derived from freely chosen values and interests as a fundamental value and principle of free expression and respect for diversity.

Today, a civil society, in the broader sense, represents a content value on a growth and development path of each democratically constituted government, while the organizations of the civil society are defined as organizational structures whose members have goals and responsibilities of general interest, and who act as mediators between public authorities and citizens.

A positive "environment assumes the establishment of a mechanism with which the civil society can influence public politics, not only at the level of informing or commenting, but the contribution of the civil society must also substantially influence the shaping of individual political decisions *(1)*.

Scientific Societies

By narrowing down the range covered by the concept of civil society we come to the scientific (and professional) societies, which have for

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years been filling the space created by the strict division between universities, whose role is first to transmit knowledge, and second to fulfil intellectual commitments. On the other hand, there are institutions devoted to science itself, research, and experiments.

Hence the notion of scientific societies is accepted and known to the wider community, nonetheless it is interesting to overview and determine their prevalence.

Historical Overview

New incentives to scientific research during the Renaissance era led to the emergence of societies which attracted the greatest minds of the known world. They gathered to discuss, exchange and present ideas and the latest findings to their contemporaries. Their goal was to improve human understanding in fields like astronomy, botany, philosophy, and history. These and similar circles were precursors to renowned scientific institutions known to history as:

- Polish SODALITAS Litterarum Vistulana (Poland, 1488.),
- L 'Accademia Nazionale dei Lincei (Italy, 1603).
- L 'Institut de France (France, 1635).
- German Academy of Sciences Leopoldina (Germany, 1652).
- The Royal Society (Great Britain, 1660.)
- The American Philosophical Society (USA, Pennsylvania, 1743.)
- The Asiatic Society (India, 1784).

Although these societies shared common principles of action, their focuses were different. While the Royal Society concentrated on science and experimentation, the American Philosophical Society had broader interests and discussed topics ranging from history and archaeology to literature and art *(2)*.

The societies were known to be subjected to accidents of political and cultural predicaments, perhaps none so overtly and intensely as the Accademia Lincei in times of its most distinguished members: Galileo Galilei, Albert Einstein, Louis Pasteur and Charles Darwin.

At the dawn of the 19th century, not unexpectedly, following the First Industrial Revolution, the first British Mechanics' Institutes appeared in Glasgow (1821) and London (1823). These were the first professional associations to initially address to "men who were unable to acquire a minimal knowledge because of unfortunate circumstances," but shortly after they began to target different levels of the society by holding public lectures in libraries and reading rooms, and establish and organize the first technical collections.

These institutions were the first attempt at creating and developing a system of adult education, and were supported and financed by wealthy industrialists who held that educated workers would be more productive.

The second half of the 19th century and the beginning of the 20th century witnessed new discoveries in

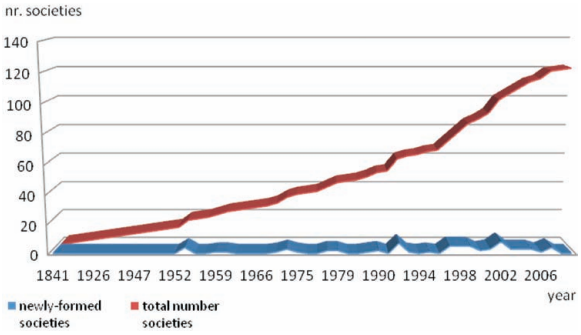

Chart 1. *Dinamics of emergence of Croatian scientific societies.*

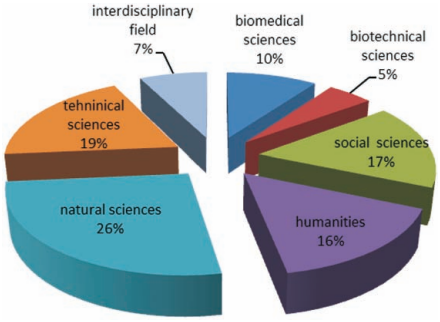

Chart 2. *Number of Societies by Scientific Field.*

science as well as numerous technical innovations. In Europe the Second Industrial Revolution occurred, while here a strong educational and public movement took place, which had, among other things, conditioned some forms of public assemblies *(3)*.

The Croatian Scientific and Professional Societies

It is interesting to look at how the scientific and professional societies have been accepted and adapted to our region.

The Department of Scientific Services within the Ministry of Science, Education and Sport can provide summary data such as the dates when each individual association was founded and its accepted definition:

Scientific and professional associations include registered associations of scientific and professional workers based in the Republic of Croatia, which have been founded with scientific and professional activities in mind, for the purpose of promoting and developing the science and professions (organization of conferences, publication of scientific journals and other journals, etc.) as well as providing expertise in education and acquiring new knowledge in the fields of science for which they were established *(4)*.

It all began back in 1850 with the foundation of:

- The Croatian Society of Agronomists (biotechnical sciences), followed by

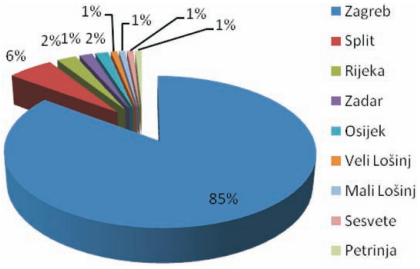

Chart 3. *Societies According to Place of Registration.*

- The Croiatian Pedagogic and Literary Society (1871, Social Sciences field)
- The Croatian Medical Association (1874, biomedical field)
- The Croatian Society of Civil Engineers (1878, technical field)
- The Croatian Society of Natural Sciences (1885, natural sciences)
- The Croatian Geographical Society (1897).
- The Croatian Chemical Society (1926).
- The Croatian Society of Chemical Engineers and Technologists (1927).
- The Croatian Association of Librarians (1940).
- The Hstorical Society of Croatia (1947, Humanistic field)

The above-mentioned societies form the basis for all the existing scientific and professional societies. After World War II, each decade brings broader circles of scientific societies. Their grouping and appearance is nothing but a reflection of the reality and social context. In the 1950s societies of technical fields, construction, and technical provenance are formed: The Croatian Metallurgical Society (1952), the Smelters (1953) and the Welders (1953). The Society of Art Historians (1953), the Croatian Psychological Society (1953), the Croatian Philosophical Society (1957) and the Sociological Association (1959) are formed as a counterweight.

The next wave of increments appeared in the seventies, specifically between the 1974 and 1979, when twelve societies from all scientific fields except the social field were registered!

The 1982 Law of Social Organizations and Citizens' Associations created the legal framework for their activities in Croatia. This was followed by the Law on Endowments and Foundations (1995) and the Law on Associations (1997 and 2001).

In the newly constituted State, in the midst of the Homeland War and with the inherited legislation, eight associations were founded in 1992 of mainly technical and other related professions. After the creation of the above-stated legislative framework, in the five years between 1997 and 2002 34 new societies were founded, nine of them in 2002.

Generally, it is possible to display the percentage of societies by scientific fields in the following way:

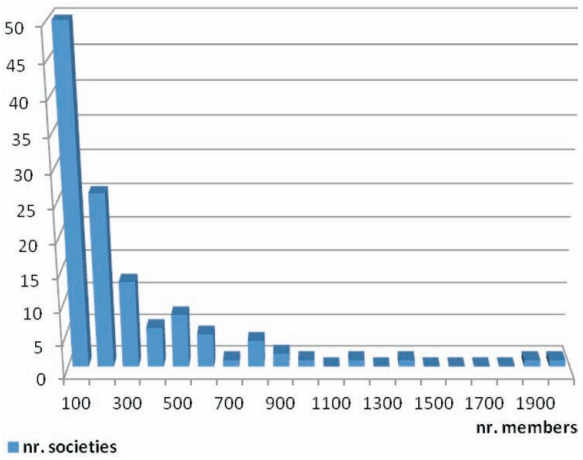

Chart 4. *Societies by Number of Members.*

The following picture shows how societies have been distributed in relation to the place of foundation or registration:

The number of organizations is one of the key indicators of the development of the civil society. According to data from the official records and registers, today more than 46,000 registered associations are operating in Croatia.

At first glance, one can notice that the percentage of scientific and professional societies is anything but modest. We have over 120 societies! The total number of members is about thirty thousand, of whom 8000 hold some kind of academic or scientific title. As shown in the picture below, fifty societies are smaller associations numbering up to a hundred members each – specialists and experts in particular fields or branches of science. The number of members increases in proportion with the preponderant percentage of professional workers in the scientific field. In other words, the closer the society's association with a particular field, the higher the number of its members.

Communicators of Science – Scientific Journals and Congresses

In a sample from 2009, the last financially strong year but at the same time the first year of recession, it is possible to assess the real situation in the activity field of the scientific societies. They must be viewed in their most powerful context in the field of communicational science; in the grant-awarding system of the Ministry of Science, Education and Sport, for programs of scientific publications (journal and book publishing), organizing scientific conferences, schools, and workshops, as well as the popularization of science.

In that year, thirty-five scientific non-profit organizations published sixty-three scientific and professional journals. Eighteen of them printed thirty-nine scientific books or higher education textbooks, and forty-six organized a total of eighty-eight events in the country, such con-

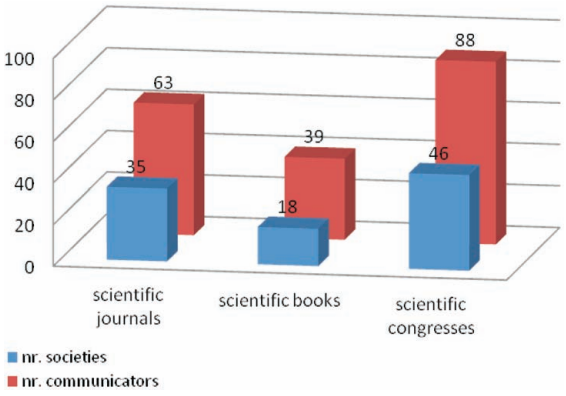

Chart 5. *Scientific Societies and Communicators.*

gresses, meetings, schools and workshops. Half of these were of international of regional significance.

By eliminating the overlap we are left with thirty permanently present and very active and productive scientific societies. Their role is unquestionable and the invested taxpayer funds are significant.

Instead of a Conclusion

After presenting the data here, it is clear that this is a small but well-organized community of scientists and specialists who are persistently and worthily linking two seemingly separate worlds – science and the public *(5)*.

To what extent will their voices be heard when it comes to shaping public policy, and how important their advisory role will be remains to be seen.

Nonetheless, scientific societies as non-profit organizations, apart from their concern for the benefit of their members, have demonstrated a great ability in creating an infrastructure that is invisible to the eye, by setting up and opening communication channels.

There is no doubt that they are ready to become partners in achieving the goals outlined in the documents and strategies EU 2020 *(6)*.

Of the four thematic areas to which Croatia should direct the bulk of EU funds in the next seven-year budget period, one of them obliges us to increase the involvement of our civil sector.

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