2021 Balzan Prize Subject areas

■ Holocaust and Genocide Studies

This field, which has developed over the past 20 years, has a strong international and multidisciplinary character, with impulses from history, social sciences, literature, film studies and law. It is both a continuation and an extension of the ‘older’ field of Holocaust Studies in the sense that it draws upon the vast knowledge of the Holocaust and integrates it into a broad, often comparative perspective. This development has been strongly stimulated by the opening of important archives and libraries in former communist countries in Eastern Europe, Russia, and the Baltic States. New research has deeply changed knowledge of the Holocaust and has made the study of massive violence under different political regimes possible. Thus, the field of Holocaust and Genocide Studies – like studies on the Holocaust itself or studies on specific genocides – is characterized by a broad, comparative and/or interdisciplinary approach.

■ Art and Archaeology of the Ancient Near East

The subject has been firmly rooted in the European and North American academy (and recently also in the Near East, Japan, China, and Latin America) since the beginning of the twentieth century, when the relevant historical phase of the archaeology of the great civilizations of the pre-classical Orient started, after the pioneer phase of Biblical inspiration in the second half of the nineteenth century.

Generally speaking, this denomination concerns the study of the material and artistic culture of the great civilizations in the large geographic area that extends from the shores of the Eastern Mediterranean to the Indus Valley, in close relation to adequate, non-specialistic knowledge of some of the main historical languages of the pre-classical Orient. Traditionally, this academic discipline deals mainly with the extremely rich archaeological evidence from Mesopotamia, Anatolia, Syria, Palestine, and Iran, from the proto-historic phases to the Hellenistic period of the Orient. For the wealth and variety of this archaeological evidence, this discipline combines strictly archaeological research and studies with historical-artistic research.

■ Microbiome in Health and Disease

The concept of the microbiome refers to the associations of microbial communities (fungi, bacteria, archaea, viruses, parasites) with host tissues, namely the oral cavities, the gut, the vagina, and the skin. In humans it is estimated that the number of genes present in the microbiome of an individual outnumbers by a factor of ten the number of genes of the host. Over the past 15 years, the spectacular development of sequencing techniques, combined with refinements in bioinformatics, has led to remarkable progress in the field. Unexpected roles for microbiotic communities were unravelled in development and disease in humans and in most organisms. While continuing these analyses, the field now focuses on the understanding of the molecular mechanisms by which microbiota interact within their complex associations and with their hosts in specific biogeographic areas of the body, and on the isolation and characterization of the molecules which mediate these interactions.

■ Gravitation: physical and astrophysical aspects

Gravitation, the most far-reaching of the known fundamental forces in nature, has been explored systematically now for 350 years, but it is still an enigmatic phenomenon. Although described very well for a century by the Theory of General Relativity, this theory is probably not the definitive one in view of its incompatibility with quantum physics. Moreover, although various attempts to reconcile these two great twentieth-century theories in physics have been made (by quantum gravity, super-string theory, etc.), there is still no satisfactory unifying theory. In this situation, very accurate laboratory experiments as well as precise studies of the effects of gravitation on the largest scales may lead to the discovery of “smoking guns” that could suggest modifications of the theory, or new avenues towards new theories. The effects of gravitation in the universe are, as such, quite impressive. It is the dominating force in the formation of the largest structures, the galaxies, and clusters of galaxies, where gravitation from dark matter, until now a poorly understood component, plays the main role.