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RESEARCH PROJECTS

"Dual career programs for student-athletes as a tool to build a social Europe."

Annex code 1

Department of Law

Tutor: Prof. Stefano Bastianon

The main purpose of the project is to analyze the status of student-athletes from a social, cultural and legal point of view as well as the opportunity to develop educational programs in order to allow student-athletes to combine, without unreasonable personal efforts, their sport career and high-level education.

There is no doubt that studying and top-level sport are difficult to combine and require many sacrifices. The reason is very simple: on the one hand, studying and top-level sport require both a lot of time; on the other hand, one day is composed of 24 hours only. As a consequence very often the student-athlete is forced to choose between education and sport. In such a context any choice of the student-athlete represents a defeat for the educational system as well as for the sport sector. If the student-athlete takes the decision to give up his educational program the sport sector and the society as a whole lose the possibility to grow up athletes able to start a new professional career at the end of their sporting career without relevant difficulties; at the same time the educational sector loses the opportunity to take advantage from student-athletes and their successes to develop a positive and modern image where non-formal and informal learning are deemed to be fundamental as much as formal learning. On the contrary, the student-athlete's decision to give up his sporting career represents an overall loss for the society as a whole because student-athletes are able to convey positive values such as loyalty, sacrifices and they may be used to recruit young athletes.

In order to avoid such problems it is of paramount importance to develop and improve the so called dual career programs, that is ad hoc educational programs allowing student-athletes to combine, without unreasonable personal efforts, their sporting career with education and/or work in a flexible way through high-quality training in order to protect their moral, health, educational and professional interests, without compromising either objective.

In 2012 the EU published the Guidelines on Dual career of athletes inviting the Member States to develop a political framework and/or national Guidelines for the dual career involving key stakeholders. More recently, in Italy the national Olympic Committee (CONI) and the Ministry of Education, University and Research (MIUR) have signed a Memorandum of understanding aimed at increasing the University career of student-athletes.

The present project is organized as follows:

- a) to analyze and describe the student-athlete's status from a legal, cultural and social point of view;
- b) to define the concept of dual career programs in a workable way;
- c) to analyze the specific needs of student-athletes in order to be able to develop effective and workable dual career programs;
- d) to elaborate proposals to implement at national level the EU guidelines.

In order to fulfil the objectives of the project a 24 months period is required. This period is divided into 4 sub-periods:

- i) 1st semester: collection of the relevant literature on dual career programs;
- ii) 2nd semester: contacts with key stakeholders and study of best practices in Europe;
- iii) 3rd semester: proposal for a possible working model to implement EU guidelines;
- iv) 4th semester: organization of a conference/publication to divulgate the collected data.

Department of Law

Tutor: Prof. Mariacarla Giorgetti

“European Rules of Civil Procedure.”

The research project aims to investigate a very new theme: the creation of community rules and principles governing the civil process. The novelty derives from the recent collaboration between ELI and UNIDROIT to develop a set of principles applicable to civil proceedings, as well as disciplined in the various EU Member States. It is now acknowledged that there is an increasing need for Community rules also in the civil process in order to broaden the EU's competence. The aim is to avoid a non-harmonious development of civil proceedings in different European states. Also in Italy is still questionable Civil Procedure Reform (Senate - Act No. 2284, Approved by Chamber of Attorney C 2921) which, from projects to the state of affairs, aims to significantly affect the discipline of civil proceedings. This contemporary slope of two significant reforms of the civil process makes the subject matter of this research project even more interesting, for the necessary interactions that need to be developed. Substantial European law is constantly expanding and is being implemented by national courts through national civil proceedings. Most of these procedures are applied to purely internal disputes. In this case could describe the influence of the "vertical" Union law: how national judges enforce substantive EU law by using national procedures; so the European legislator can intervene in order to ensure or improve the uniform application of Community law by the courts of the Member States. On the other hand, expansion has been implemented with reference to cross-border proceedings. In this case, the European Union's legislative activity operates horizontally: it aims to overcome obstacles in the national procedural law for the free movement of decisions (and in general, executive titles). From the point of view of the Member States, the less invasive regulatory choice is to simply coordinate national procedures without harmonizing them. The necessary premise is useful in understanding the importance of the elaboration of European rules of civil proceedings, which will apply to national civil proceedings and are an important opportunity to deal with a topic that is still in the process of being elaborated. Indeed, European law does not regulate a set of minimum standards to apply uniformly to all national civil procedures. Hence the need to develop common principles governing the civil process, in order to create a uniformity of protection within the European Union. The research project is so articulated. In a first phase, the goal is to collect the existing material, which has been elaborated today. Several committees have been set up for the elaboration of the European rules of civil procedures, which have been assigned a very specific field of study: 1. access to information and evidence; 2. provisional and protective measures; 3. res iudicata and lis pendens; 4. Obligation of the parties, lawyers and judges; 5. service and two notice of proceeding. In a second phase we want to verify the correspondence between the principles set out in the work carried out and the principles of our civil process. Third and last phase: highlight any possible dissonance between the European rules of civil procedures and the principles of our civil process. This is also in the light of its forthcoming reform, so that the latter can be the space to gather suggestions from Community law. This is to avoid any discretion with Community legislation, which we would penalize us by making us less competitive. Duration is fully compatible with the search check. It is necessary to create a dialogue with Unidroit to participate in the meetings, the next at UNI Ferrara, in the quarter semester: to make a convention / publication for the dissemination of the collected data.

Department of Management, Information and Production Engineering

Tutor: **Prof. Alessandro Fassò**

“Statistical Methods for Data Science, with application to calibration of satellite measurements”.

PREMISE

Among ground measurements of atmospheric Essential Climatic Variables ECV (including temperature and humidity), radiosondes are particularly relevant: a ball carrier flying from ground level up to 50'000m with a set of measurement and data transmission equipments.

In this context, the ECV observations are atmospheric profiles repeated in time and space (4D). In particular, the data can be high vertical resolution, sparsely and irregularly distributed in geographic space (non-Euclidean) and regularly distributed over time (days).

Therefore, the project is carried out by developing statistical space-time models for functional data in non-Euclidean domains.

GRUAN is the network that has the task of defining the "reference measures" in high vertical resolution for ECV and conducts research through the Working Group GRUAN with the contribution of the environmental statistics group at the University of Bergamo. On the other side, RAOB is the base-line network with great spatial and temporal extension but reduced vertical resolution.

Despite technological innovation introduces tools with improved metrological properties, instrumental change can create problems of discontinuity in the global time series. Recently industry leader Vaisala has introduced a new radiosonde (RS41), which is replacing the previous one (RS92). Therefore, it is important that an independent body quantifies the field differences between these two instruments. To this end, GRUAN, in collaboration with the network ARM (www.arm.gov), is activating a test campaign named Radiosonde Intercomparison & Validation (RIVAL), in which the sensors are installed on the same balloon.

AIMS

The project intends to develop the spatio-temporal models for functional data with the purpose of modelling the humidity and temperature data of RAOB network and identifying the information gaps in geographic space, in time and with respect to the regions of the atmosphere.

The project also intends to monitor the progress of the RIVAL campaign, aiming at the understanding the field difference between the two VAISALA instruments and at producing harmonized global time series based on the old instrument, for GRUAN, GUAN and RAOB networks.

METHODS

This project involves the development of methods and statistical models starting from the results obtained from the environmental statistics group within the functional regression heteroschedastic (Fassò et al., 2014, Ignaccolo et al, 2015).

In addition, with regard to problems related to the spatial and temporal correlation, it is expected to use and extend the techniques for functional data currently under development in the GAIA-CLIM project (www.gaia-cli.eu) that extend to the functional case spatiotemporal modelling (Calculli et al, 2015, Finazzi and Fassò, 2014).

Particular attention is given to the non-Euclidean structure of the problem domain that comprises a sphere x time x atmosphere.

PROJECT STRUCTURE

The project is divided into the following phases:

- F1. Modeling of RAOB spatiotemporal functional data and identification of the gaps through dynamic functional kriging;
- F2. Validation of the RAOB modelling through GRUAN data;
- F3. Construction and validation of the statistical model for the difference RS41-RS92;
- F4. Harmonization of GRUAN, GUAN and RAOB data.

Department of Management, Information and Production Engineering

Tutor: Prof. Daniele Regazzoni

“Sustainable development of high-value product with Additive Manufacturing Technology”.

The following activities have been planned:

1. Acquisition and management of technical knowledge
 - 1.1 State of the art review about techniques and tools for Design for AM and manufacturing technologies based on AM (materials, processes, performances and limitations).
 - 1.2 Definition of an ontology and of a knowledge repository including guidelines and rules for product development, selection of AM technologies and evaluation of environmental impact.
2. Simulation and optimization for AM
 - 2.1 Commercial and open source optimization tools will be compared through case studies concerning the design of products to be manufactured with AM technologies. This is done to enlarge the number of requirements an optimizer can handle (e.g., adding environmental impact or compatibility with AM).
 - 2.2 Choice of the best methods of structural optimization for a multi-level approach and optimization of parts to be produced with AM.
 - 2.3 Definition of rules for product modelling and simulation and development of an automatic procedure for pre-processing of the simulation of AM produced parts.
3. Method for Sustainable Development
 - 3.1 Development of a method to graphically map and evaluate AM processes and compare them with conventional ones, integrating existing databases (e.g., eVerdEE and GABI).
 - 3.2 Guideline definition to innovate products and improve eco-compatibility.
 - 3.3 Implementation of a decision making procedure integrating known numerical simulation tools and LCA.
4. Test and application to case studies. Proposed methods and tools will be tested with real case studies.

Department of Engineering and Applied Sciences

Tutor: **Prof. Alessandra Marini**

“Demolition vs deep renovation? analytical models for the evaluation of the residual life of existing buildings”.

70% of the existing building stock is obsolete and requires deep renovation targeting energy efficiency, improvement of the structural performance and architectural restyling. Innovative design procedures integrating life-cycle thinking design approaches ensures the minimum environmental impact and cost of the intervention. Such a design approach, thoroughly studied by our research group, has been recently adopted as a strategic guide line for the renovation of the building heritage by the Italian government, which is granting financial incentives for the integrated interventions (national programme “Casa Italia”).

Integrated deep renovation is acknowledged as a better option with respect to demolition and reconstruction, which would be unfeasible at a large scale for the unbearable environmental impact.

However, there are cases in which renovation is not an option, not even with substantial structural interventions; this might be the case when the obsolete construction is located in highly seismic prone zones. To the best of the authors’ knowledge, no decision making tools are available nowadays to discern about the feasibility of the deep-renovation intervention or the need for demolition and reconstruction.

In this scenario, and with reference to the existing reinforced concrete buildings, the research aims at developing an analytical model describing the evolution of the structural performance over time. The scope of the research is to estimate the residual service life of the building in the pre- and post- structural intervention conditions. The study accounts for different mechanical properties, structural and architectural typologies, environmental conditions and seismicity.

The research is divided into 5 phases:

Literature survey of the local analytical models describing the decay of the material performance induced by carbonation of the concrete and the oxidation of the reinforcing steel. (1-3 months)

Survey of the diagnostic techniques both in-situ semi-destructive to be used for the acquisition of the data for the model calibration (month 3-5) and to define a test protocol.

Adoption of the local analytical model into global models of the buildings to derive curves describing the decay of the structural elements, and curves describing the time-dependent behavior of the whole building (month 5-12)

Correlation of the time-dependent performance of the building with the seismic hazard of the construction site, by considering the expected losses during the building service life. Reference will be made to the fragility curves, already available in the literature. Such curves will be appositely scaled to account for specific irregularities of the building. The minimum performance thresholds will be identified, below which the intervention is required. By comparing the minimum performance target with the time dependent performance curve will allow estimating the residual life of the building. In this phase, reference will be made to actual case studies (months 12-20)

Guide lines to be proposed as a decision making tools, focusing on the opportunity to renovate rather than demolish and reconstruct (months 20-24)

KEY WORDS

RESIDUAL LIFE

DEMOLITION AND RECONSTRUCTION VS DEEP RENOVATION

REHOLOGICAL MODELS OF THE STRUCTURAL PERFORMANCE

EXPECTED RESULTS OF THE RESEARCH

The research will allow evaluating the evolution of the structural performance of given buildings over time to finally evaluate the residual service life of the construction. A specific protocol will be proposed to guide the diagnostic campaign to the collection of the necessary data for the model calibration. To the best of the autors’ knowledge, no such tool is available in the literature.

The models that can be found in literature are aimed at describing the state of the material or the bearing capacity of a section by considering phenomena like corrosion, carbonation, or fatigue. The research is aimed at better investigating this subject, extending such models to characterize the behavior of the whole building and at analyzing the effects due to the exposure and to the accidental actions (such as earthquakes) on the structural performance of the building.

The results of the research will be integrated into decision-making tools and will help in the choice of the best retrofit solution in terms of safety and sustainability. The knowledge of the residual life of an existing building will be also useful in the assessment of the environmental and economic sustainability of buildings (LCA and LCC); in fact, it could be taken as the time frame for the analysis of the costs and the impacts.

Research results can be quite relevant in terms of increase in the knowledge of the state of preservation of existing buildings. All stakeholders can benefit from such relevant information (investors, public administration, design professionals, insurers...), in order to foster the transformation of the existing building stock into a sustainable and safe build heritage.

Department of Letters, Philosophy, Communication

Tutor: Prof. Michele Brunelli

"A new Rome in Isfahan. Pietro Della Valle's journey to the East and his diplomatic intent, seen through the eyes of the Persian-Iranian society".

In the fiftieth anniversary of the arrival of Pietro della Valle in Persia, this research project aims to study and investigate, with a critical approach, the role played by the Italian traveler in Isfahān from February 1617 to October 1621. In Persia, at the court of Šāh Abbās, Della Valle, "the Pilgrim", the Orientalist, musicologist and traveler, got in touch with a society that was not so far from the European habits, revealing many points of contact. In his works Della Valle does not give us a mere description of the places, but a political interpretation of the events, of the characters of the people he met and of the situations he lived, according to an uncommon vision for a man of his time. In Esfahan he worked to identify, build and highlight common political interests between Persia and Europe, and starting from this aim he succeeded in elaborating a complex diplomatic plan at the expenses of the Ottoman Turks, exposed in his writings, many of which are still unpublished.

The research project will focus on the critical analysis of Della Valle's works through the systematization and the direct study of the manuscripts and of printed documents related to the experiences he lived in Isfahān. Research will also take into consideration the Italian, French and English contributions, but the "most recent" or them (very few in reality), date back to the first half of the last century. The main aim is to analyze the impact his explorations and narratives had in Europe in the different political and cultural spheres, but also vice versa, that is, the political, ideological, religious and cultural interest that Persia had towards the European kingdoms. The research will also take into consideration the actual interest Iranians have towards Della Valle, trying to demonstrate the long-lasting and the long-standing relationship between Persia / Iran and Europe.

Department of Letters, Philosophy, Communication

Tutor: Prof. Paolo Cesaretti

**“Eastern Mediterranean and Italia transpadana.
Social, economic and cultural interactions (2nd to 7th centuries)”.**

Production of a prosopography concerning individuals coming from ancient Oriens or from Italia transpadana, who have travelled from Italy beyond the Po River to Mediterranean East and/or from Mediterranean East have reached the lands beyond the Po River in Roman and Late Antique age.

As shown by the research “I Romani oltre il Po e l’Oriente: Per una prosopografia sociale tra le due partes Imperii (dalle origini-sec. VIII)” (Progetto Italy” tip. B, year: 2015-2016, tutor prof. F. Lo Monaco), this is an innovative field of research also in international terms. It is surprising in quantitative terms and is very promising in terms of scientific production and fallout.

The project is devoted to:

- . analysis of the relationship individuals/space, with social and economic researches about the circulation of certain groups of individuals and products/wares within specific time and space limits;
- . analysis of modes and ways that made contacts possible, also considering the cultural and economic transformation which took place in each specific considered site after the arrival of individuals coming from the “other” part of the ancient Roman Empire;
- . analysis of transportation and communication means that made the actual move of persons and products/wares possible; apart from historical and literary sources, specific attention will be given to archaeological and iconographic evidence and research.

Research to be developed in two steps:

- . first step (abt. 6 months) especially devoted to collect evidence 5th to 7th centuries in order to create an exhaustive dossier of all the pertinent corpus (published and/or unpublished);
- . second step (abt. 18 months) to be devoted to integration of all the gathered evidence, also in the light of artistic and archaeological studies. This second step might require visits to archaeological sites and enquiries in situ.

Expected results of the analysis:

- . a wide-ranging scientific monographic publication;
- . further in-depth analysis (articles in scientific periodicals; contributions in international conferences, etc.);
- . production of a specific web-site as a reference tool.

Department of Foreign Languages, Literatures and Cultures

Tutor: Prof. Elena Agazzi

“The Legacy of Enlightenment. Cosmopolitanism and the contemporary historical novel”.

1) Objective:

The research project is aimed at surveying historical traces of cosmopolitanism as a late eighteenth-century “cultural project”. Special attention will be paid to the contribution of German speaking literary and anthropological culture to the making of this concept in the context of the politicization of aesthetics in the European Late Enlightenment. The project also sets out to retrace the ways in which cosmopolitanism, severely repressed by nationalisms and populisms of all times (from Heidelberg’s conservatives circles in the early 19th century to the anti-pacifist movements of the 20th century and beyond), kept resurfacing as an ambassador of humanity fighting against repression throughout the centuries until today. Furthermore, contemporary historical novels dealing with cosmopolitanism between literary utopias and practical proposals will also be part of the enquiry; they shun abstract speculations and open up the debate on cosmopolitanism to a broader social appreciation, thus enhancing political awareness.

2) Theoretical framework:

The concept of “cosmopolitanism” has featured prominently in the historical debates over the last years. It is a polyphonic notion pertaining to politics as well as to law, but also to literature and ethics, and the reasons of its appeal are arguably due to its capacity to suggest a flexible trans-national model of civic coexistence. In cosmopolitanism, individual specificities (territorial, cultural or linguistic) and universal ideals of equality and justice fit together. Between backward localisms and universalistic imperialisms, cosmopolitanism opens up, as it were, a third way in virtue of which individuality is safeguarded in the name of universality and universality takes up individual forms.

Far from the style of rigid systems and cognate to the programme of the Rights of Man as developed within the free and dynamic debates of enlightened public opinion (Ferrone 2014, p. 416-489), modern cosmopolitanism appears as a late Eighteenth century “cultural project” (Agazzi, Calzoni 2016). It eclectically recovers ancient and modern traditions of thought rekindling Western intellectual debates concerning issues of citizenship, rights, the State and international relations.

In cosmopolitanism, individual differences are not arranged in a hierarchical or judgmental fashion; rather, they are taken to be tokens of plurality, viewpoints disseminated into an open and dialogical network of subjectivities mutually interacting on a global scale. This gave rise to the idea – historically mediated notably through literary discourses – of a human cosmos in need of protection (through active participation of everyone) but also capable of fostering mutual improvement and potentially unbounded creativeness (Dierksmeier 2016, p. 331-336 on the notion of “cosmopolitan freedom”).

Cosmopolitanism currently thrives as a political and civic issue (Habermas 2011, p. 82-96), also in the debates of the European Union devoted to “Societal Challenges” in the frame of Horizon 2020. It can therefore provide valuable insights in the field of historical analysis, pinpointing critical elements of the present and suggesting pluralistic developments as opposed to nationalistic entrenchments. Furthermore, cosmopolitanism is a key-concept in on-going political and philosophical debates that engage with the traditions of European Enlightenment as promoted, for example, by Jürgen Habermas and his endeavour to connect European perspectives to the traditions of Enlightenment. It should not come as a surprise that recent studies on cosmopolitanism tend to recover several patterns of thought developed in Eighteenth-century culture when the notion of “cosmopolitanism”, as it is well known, was moulded and extensively debated as a crucial intellectual issue of up-to-date debates, as shown in Andrea Albrecht’s monograph *Kosmopolitismus. Weltbürgerdiskurse in Literatur, Philosophie und Publizistik um 1800*, Berlin 2005. From the viewpoint of genealogical enquiries, Eighteenth-Century cosmopolitanism can indeed be seen as a cultural model of resilience apt to actively face the major crisis that characterised the century that gave birth to it. As a matter of fact, modern cosmopolitanism first came up in public debates as a reaction to the military and humanitarian setbacks of the Seven Years War, then as an alternative political and civic model in the wake of the French revolutionary wars and the Napoleonic military expansions around 1800 (Bremer 2013).

Repressed by nationalistic movements and populisms ever since, cosmopolitanism has always been able to resurface as an energy source under severe repression. When history has shown the chasms in which mankind can fall, the project of cosmopolitanism has been conversely hailed at as a critical voice announcing a better future. It requires political commitment from everyone within a democratic framework whose representative can be found in the image of the “world citizen” living in the “cosmopolitan republic”, as designed by Kant at the end of the 18th century.

There are a number of voices from the 18th century that find a place in the choir of contemporary debates on cosmopolitanism. Scholars have so far traced multiple paths to survey and rekindle this cultural model. French speaking contributions, for example, have set out to survey cosmopolitanism in the aftermath of 1789, following its renewal within Internationalism around 1848/49 and the rivalries towards Nationalism and Universalism around 1870, up to the pacifist movements of 1914 and the search for new models of peace and order inspired by cosmopolitanism after the Great War (Coignard 2012, p. 149-162). In the aftermath of WW2 and the ensuing geopolitical settings, studies on cosmopolitan projects have focussed on Central European and Transatlantic democracy, shedding light on complex traditions of emancipation linked to pacifism (often derived from Jewish culture) (Graf/Wintersteiner 2016, p. 78-93). Political and civic commitment has proved a good ally to literary practices until most recent debates devoted to Europe, its hopes and troubles (Lützel 2007, 1, p. 3-26; Lützel 2002).

German-speaking Eighteenth-century politics and literature play a crucial role in these debates, a role that is yet to be fully analysed, assessed and promoted. Three authors, in particular, are constantly (and rightly) mentioned in current international studies on the genealogy of cosmopolitanism. Kant's project of cosmopolitanism as *ius cosmopoliticum* still elicits reflections on the forensic-philosophical premises of global peace (Garret W. Brown 2013). He is frequently evoked along with Goethe, who pleaded a political understanding of "sociability" conjuring up a vision of culture based on the key-concept of *Weltliteratur* (Pizer 2000, p. 213-227), and Lessing, who interpreted cosmopolitanism in terms of tolerance and interreligious dialogue (Gossens 2008, 23-37).

And yet, a closer scrutiny shows that many Eighteenth-century voices are still to be taken into account and rediscovered. Among these, Christoph Martin Wieland and Johann Gottfried Herder play a significant role. The former interprets cosmopolitan ideals in terms of free associations of citizens capable of pleading the cause of "Humanity" beyond the political divisions that loomed large over the history of the French Revolution. The latter engages with cosmopolitanism from the viewpoint of anthropology and considers the plurality of mankind as a good to be safeguarded from fanaticism in the name of "Humanität". Both kindred spirits, Herder and Wieland share the heritage of the European Enlightenment. They both carefully investigate diversity in each of its forms, from the local to the exotic, from language to ethnography. And they do so in the context of Weimar Classicism, a political background that avoids the concept of the Nation, creating a cultural and political micro-cosmos that can be considered as a model for times to come.

Several writings of both authors are still to be charted, assessed and translated. Case studies should prove suitable to this kind of analysis. They can help retrace pattern of a "poetic of diversity" (Wintersteiner 2006) that represents an antidote to racism and ethnocentric universalism, as it shows viable alternatives for the times to come.

3) Research project description:

Like issues linked to "Societal Challenges" in the framework of Horizon 2020, the concept of cosmopolitanism unfolds in multiple directions, such as ethics and morals, sociology and law, and owes much of its development and circulation to literature and its tools. As a model of trans- and postnational civic coexistence (Beck 2003; Appiah 2007), cosmopolitanism – at least from Kant on – connects individual specificities concerning the territory, culture and language to universal ideals of equality and justice.

While its classical roots have been thoroughly studied (Scuccimarra 2006), this research project aims at:

a) surveying the historical traces of cosmopolitanism as a late eighteenth-century "cultural project", paying special attention to the contribution of German speaking literary and anthropological culture to the making of this concept in the context of the politicization of aesthetics in the European Late Enlightenment.

As a reaction to humanitarian emergencies (for example, colonialism, Seven Years war, Napoleonic wars, WW1 and WW2), cosmopolitanism recuperates ancient and modern traditions of thought (giving them a political meaning linked to the construction of peace and new forms of citizenship). The second part of the research will be therefore devoted to:

b) the reconstruction of the ways in which cosmopolitanism, severely repressed by nationalisms and populisms of all times (from Heidelberg's conservatives circles in the early 19th century to the anti-pacifist movements of the 20th century and beyond), kept resurfacing as an ambassador of humanity fighting against repression throughout the centuries until today.

When history shows the chasms in which mankind can fall, cosmopolitanism turns into a prophecy or foundation myth telling a story of emancipation. Which role was played by characters like the "world citizen" or by ideas like that of a "cosmopolitan republic", as designed by Kant among others, at the end of the 18th century until today? To answer this question the research will concentrate on:

c) a selection of images, narratives and discourses that have contributed to the debate. Many branches of eighteenth-century knowledge are taken into account in contemporary discussions of cosmopolitanism. The research will take view of the products of international scholarship so far delivered, paying special attention to the German-speaking political and literary culture of the 18th century. It will retrace the history of less studied journals such as *Der Weltbürger* (Berlin 1741/42) or *Der Fremde* (Copenhagen, Leipzig 1751/56). Besides Kant, Goethe and Lessing, a further corpus of less studied texts by C. M. Wieland and J. G. Herder will be analysed within the ethical-aesthetical context of Weimar

Classicism. In this context, the paths of political nation building were shunned, and preference was accorded to models derived from classical antiquity as recovered by Winckelmann. Geo-cultural localism and universal ideals fit together in Weimar and provide a new political and cultural model that played a role in the 20th century (Weimar Republic) and perhaps even today.

Relying on a hermeneutical approach, the research will also engage with

d) a selection of contemporary historical novels in which cosmopolitanism features prominently between utopian visions and practical proposals. The envisaged novels shun abstract speculations and open up the debate for broader social appreciation, thus enhancing political awareness.

The results of the survey will be presented in a scientific article. An annotated anthology of selected texts translated into Italian will also be made available.

4) Time:

- 1st year, 1st semester: survey of the historical traces of cosmopolitanism as a “cultural project” of late 18th century. Special attention will be paid to the contribution of German speaking culture to its development in the context of politicization of aesthetics during the Late Enlightenment.

- 1st year, 2nd semester: survey of the ways in which cosmopolitanism, severely repressed by nationalisms and populisms of all times (from Heidelberg’s conservatives circles in the early 19th century to the anti-pacifist movements of the 20th century and beyond), kept resurfacing as an ambassador of humanity fighting against repression throughout the centuries until today;

- 2nd year, 1st semester: scrutiny of a selection of images, narratives and discourses that have contributed to the cosmopolitan debate, along with close readings and interpretations of contemporary historical novels, mainly in German, dealing with cosmopolitanism;

- 2nd year, 2nd semester: collected data will be carefully arranged and elaborated preparing the results for presentations at conferences and seminars. A selection of significant texts will be translated and commented. The implementation of results will depend on the schedules of relevant conferences and seminars. The ensuing publication might exceed the term of the two-year project due to publication schedules. The evidence of the preparation work will testify results.

5) Expected results:

The research will contribute to the advancement of knowledge on cosmopolitanism in 3 main directions:

-historically and critically, through the survey of the ethical and moral premises to contemporary cosmopolitan discourse from the viewpoint of literature – following a line of research inaugurated by F. Meinecke in *Weltbürgertum und Nationalstaat* (1908) and still present in the work of philosophers such as Jürgen Habermas (for example, *Zur Verfassung Europas*, 2011). Elements of continuity and transformation between Late Enlightenment and its contemporary legacy will thereby come to the fore. Traditions of the German historical novel will be analysed concentrating on the representation of cosmopolitan issues and their historical adversaries, starting with the Weimar Republic, involving mid-century novels – for example K. Zuchardt’s *Spießrutenlauf* (1954) and *Wie lange noch, Bonaparte?* (1956) – up to celebrated contemporary novels (for example, D. Kehlmann’s *Die Vermessung der Welt*, 2005) or novels that are still to be thoroughly studied (for example, A. Kollender, *Teori*, 2000; M. Schneider, *Der Traum der Vernunft*, 2001; A. Muschg, *Löwenstern*, 2012 and C. Ransmayr, *Cox oder der Lauf der Zeit*, 2016). Special attention will be paid to the literary strategies deployed to disseminate the memory of historical persons who dealt with cosmopolitanism in Germany (for example, M. Zaremba, *J.G. Herder, Prediger der Humanität*, 2002; Id., *C.M. Wieland, Aufklärer und Poet*, 2007).

-From the viewpoint of theory and method, an innovative approach to literary texts through case studies devoted to literary cosmopolitanism will shed light on the dissemination of cosmopolitan issues in modernity.

-As for communication, the results of the enquiries on contemporary trends in literary production concerning the dialogue with cosmopolitanism will be made available to the international scientific community. An annotated translation (print and ebook) of selected texts concerning cosmopolitanism and its relevance for contemporary debates will also be delivered.

Department of Management, Economics and Quantitative Methods

Tutor: Prof. Paolo Buonanno

"The use of Big Data for the understanding of long-term development in Italy".

Recent economic literature, from Acemoglu to Nunn, has given increasing importance to the long-term determinants of economic development for which it concerns both economic growth and socio-economic development. Prominent researchers (e.g. Carlo Maria Cipolla) identified in history, geography and diseases those determinants that influenced cultural, technological and economic developments occurred during the Middle Ages and the Renaissance. Recently, Jared Diamond's contribution (Arms, Steel and Diseases) studied deep-rooted reasons of differential in development across continents and people, highlighting how cultural diversity is not innate but strongly related to geographical, ecological and territorial differences.

Three main issues have been highlighted by the economic literature. First, the limited availability of data has prevented the possibility of carrying out empirical analysis at a sufficiently disaggregated level. Secondly, the complex interactions between different variables and the existence of heterogeneous effects require the use of non-obvious (and generally non-linear) empirical specifications. The third issue is related to the identification of causal effects through the use of adequate empirical strategies.

The first objective of the project, which is of utmost importance in itself, is to geo-referencing and digitizing a set of historical and geographic information, which are currently not available in electronic formats and therefore not unusable for the purposes of empirical research. The second objective is to study the long-term determinants of Italian socio-economic development with particular attention to the dichotomy existing between the North and the South of the country, using big data ("grid data" and geocoded data) and machine learning techniques.

Department of Management, Economics and Quantitative MethodsTutor: **Prof. Massimo Contrafatto****“Governing water: the role of accounting and control techniques”.****BACKGROUND**

The present project focuses and aims to investigate the ways, processes and techniques through which “water” is governed, i.e. accounted for, controlled and managed. The investigation of these ‘governing ways’ is particularly relevant if we take into consideration the fact that the resources of water are limited and will be even more so in the future. With regard to this, as re-affirmed by the United Nations (UN), it is essential and a priority to design and identify “management and governing models of the water that are able to be sustainable” and that are able to ensure by 2030 the efficiency and equity in the use of water resources by current and future generations (UN, 2015).

In this sense, it seems appropriate to investigate the governing-related processes, that is, the ways through which (and under which) water is governed. The word governing is used to indicate the mechanisms, procedures and techniques that are used to conduct the activities of individuals and organizations (Foucault, 2014). Specifically, the term “conduct” is used to refer to a form of control, which is adopted for leading the individuals but also for managing the activities, processes and resources such as water. In the context of the dynamics and ways of governing water, a fundamental role is played by the accounting processes and techniques. These processes and techniques play a primary role, as they allow to ‘make visible’ a specific entity, process and/or resource. It is through this mechanism of “visibility” that the entity, process and resource is made measurable, controllable and, thus, governable (Miller & O’Leary, 1987).

The purpose of the present project is to investigate the role that the accounting techniques (may) play in managing water and the related processes such as, for example, its consumption. In the accounting literature, the word “water accounting” is used to designate the set of techniques for accounting, controlling and reporting relevant information for decision-making. The project includes both theoretical and empirical analysis. The purpose of the theoretical analysis is twofold. On the one hand, this analysis aims to study the theoretical and conceptual basis of the water accounting with specific attention to the role that this form of accounting can play in governing water-related issues. On the other hand, the objective of the theoretical analysis is to examine, through a literature review-based methodology, the models, techniques and systems that have been proposed and adopted for managing and reporting on water-issues. The empirical analysis focuses, in particular, on the processes related to the government of water, with specific attention to the role of accounting. The empirical analysis will be inspired by field case study methodology, which will allow investigation of the practices which are actually adopted by the organizations.

TIMELINE

The project involves two years investigation.

First year: During the first year the analysis will focus on the theoretical investigation and on the empirical data which has been preliminary collected. The first 6 months will be devoted to the analysis, through an extensive literature review, of the techniques of water accounting, which have been proposed and/or adopted within the accounting and business literature. The objective of this analysis is to propose a state of the art map and to prepare an academic paper. The remaining 6 months will be devoted to the analysis of the theory to use for the analysis of the empirical data with particular attention to the theory of governmentality (Dean, 2010).

Second year: During the second year, the researcher will be involved in gathering and analysing the empirical data. The first 6 months will be devoted to the analysis of the empirical data, which will be analysed through a specific “codes-protocol” (O’Dwyer, 2004). The second semester, will be dedicated to the theorization of the empirical findings with the purpose of preparing a working paper to present at international conferences.

Department of Management, Economics and Quantitative Methods

Tutor: **Prof. Stefano Lucarelli**

“Local Clearing Systems in Italy in the years of economic crisis: do they represent a model for enduring local economic development?”.

The research aims to analyse Complementary Currencies (CCs) and Local Clearing Systems (LCSs) in Italy from 2008 onwards, both from a theoretical and an empirical standpoint. LCSs are understood as a peculiar form of CC based on mutual trust and cooperation among the actors who create the circuit.

Monetary plurality, i.e. the parallel circulation of different currencies for different purposes, was the rule throughout Western economies until the gold standard, particularly in the wake of economic crises (Kuroda, FHR 2008).

The capacity of CCs to enhance the resilience of a community has been acknowledged by various authors belonging to different school of thought (Peacock, LE 2014, Blanc, IJCCR 2011, Fantacci, FHR 2005).

With the proliferation of new experiences which also make use of innovative social technologies, the interest of the scientific community towards CCs is increasing (Stodder, JEBO 2009, Boonstra et al., Erasmus Un. 2013, Seyfang, NPE 2011).

New research questions are emerging, which call for an interdisciplinary approach that integrates sociology and economy:

- What are the conditions for a LCS to survive?
- Under what conditions a CC based on local clearing union may support both domestic and foreign exchanges?
- What are the responses to different shocks of complementary currencies as different institutional systems?
- Under what (institutional, economic and social) conditions can a successful LCS scale-up and be replicated in other regional circuits in Italy today?
- What are the prerequisites for the correct functioning of an LCS and which impact may it have on fostering trust, social capital and local development?

Over a total duration of two years, the research will be carried out in three main stages:

1. In the first 4 months an analysis of the existing literature on CCs and on the main Italian experiences will be followed by a comparative analysis of the LCSs emerged from 2008 onwards. The research will pay particular attention to the economic (number of participants, sectors involved, total outstanding credit, circuit velocity of currency impact on local economy), institutional (rules of functioning, risk management, macro-prudential policies, treatment of delinquencies and bankruptcies), and social dimensions (type and motivations of the actors involved, and organization of the circuit).
2. In the following 14 months a field research will be carried out on the case of Sardex, which is based on the prototype of the Swiss Bank WIR and is widely acknowledged as a paradigm for LCSs (Dini e Sartori, SM 2016). In order to explore its functioning, development and potential in diverse settings, the research will also pay attention to other case studies (Piemex, Linx, Liberex, Marchex e Abrex). A variety of research methods will be combined: statistical analysis of local contexts (dataset ISTAT and data from the Bank of Italy on regional economy), face-to-face interviews (30 stakeholders per LCSs and 10 persons involved in LCSs management), focus groups. The first scientific paper and workshop will be presented after 12 months.
3. In the final 6 months the data collected during field research will be analysed using Social Network Analysis (SNA) and Stock Flow Consistent (SFC) models. SNA will illustrate the structural composition of the subjects involved (nodes, hierarchies, resilience of the network). The answers to the shocks of the different LCSs will be analysed using the SFC approach (Godley & Lavoie, Macmillan 2007; Lucarelli & Gobbi CJE 2016). The SNA and SFC will be fed into R (www.r-project.org). A second paper will be published in month 20.

Department of Management, Economics and Quantitative Methods

Tutor: Prof. Sergio Ortobelli Lozza

"Strategic portfolio choices among financial sectors and markets"

In this research project, we examine two important problems related to multivariate choices among financial sectors and markets. In particular, we study: a) rules and methodologies of multivariate orderings; b) strategic portfolio choices among financial sectors and markets.

Any decision problem under uncertainty requires the comparison of random variables. The theory of stochastic orderings studies and proposes methods of comparison between random variables consistent with different investor preferences. In financial literature, the dominance rules are typically used to address investors or institutions to "optimal" choices. In this context, the stochastic dominance rules, applied to financial returns, establish hierarchical preferences between random variables, consistent with the attitudes of some investors.

The first objective of this project is the analysis of multivariate ordering rules and methodologies applied to financial sectors. In order to identify dominance rules among financial sectors, we study and propose the use of copulas that approximate the joint behavior of financial variables. We propose copulas based on different estimators of the conditioned returns with respect to some economic and financial factors. Using this approximation, we are able to parametrize and identify the preference ordering rules among financial return vectors. We alternatively study the asymptotic joint behavior of financial returns taking into account the asymmetry and the heavy tails of the joint return distributions. Then, we compare the two proposed methodologies applying them to financial sectors of some European equity markets.

The second objective of this research is the comparison of portfolio selection strategies among financial sectors (markets) according to different investor's preferences. To this end, we study the investor's attitude towards risk and returns. Then, we model proper multivariate orderings consistent with the common behavior of some investors. Finally, we empirically examine, compare and test some ex-post optimal portfolio strategies applied to different financial sectors in the Eurozone, US and some emerging markets.

We believe that a substantial part of this research can be achieved in two years:

1. In the first year, we collect, clean data, and we model the joint behavior of financial random variables. We also examine multivariate ordering rules according to some portfolio selection problems.
2. In the second year, we conclude the methodological studies and we propose empirical comparisons among portfolio strategies applied to financial sectors (markets).

Tutor: Prof. Salvatore Piccolo

"The Price and the Value of Information in Vertical Contracting and Competitive Markets"

In models of vertical contracting, players at different echelons of the production chain have typically diverging objectives. This misalignment of preferences, often engendered by information asymmetries, generates distortions that harm social welfare. The severity of these inefficiencies depends on the verifiable information available to the agents when the rules of the game are defined. Hence, in order to implement proper incentives in their organizations, principals often acquire information from specialized intermediaries, such as auditors or certification companies, which are able to discover agent's private information and credibly disclose it. However, the information provided by these intermediaries has a price, as any other product in the economy, which is typically given by the intersection of demand and supply. In those markets which are not completely competitive, a sufficiently high price may weaken individual incentive to acquire information, and backfire on its social value, at the expense of market transparency and welfare. Therefore, vertical contract design cannot ignore firm's incentives to acquire information, the market conditions at which this information is supplied and the determinants of its quality. Moving in this direction, our project will develop three innovative scientific papers (one of them is already at an advance stage) within a two-year period. In these papers, we will develop a class of models in which the information that flows throughout vertical organizations and their echelons as well as its quality are endogenously determined by specialized, profit-maximizing intermediaries. The objective is to establish positive and normative implications of endogenous information acquisition and the externality that the behavior of players in market has on real markets and the level of efficiency. Information acquisition and information disclosure are two fundamental aspects of an information management problem that, in recent years, has become central in the mechanism design literature and its applications (see, e.g., the survey by Bergemann and Välimäki, 2002). However, little is known on the interplay between information acquisition and vertical contracting in competitive environments as well as on the effect of market competition on the quality of the information supplied in a market. In standard models, information acquisition is an exogenous process. It is represented through the introduction of exogenous costs or they are simply ignored, assuming that some players have more information than others.

Hence, little is known on how the quality of the information supplied in a market and its price are affected by the intensity of competition in the final good market. The objective of the research is to analyze a class of models that features competition both upstream, i.e., in the market of information, and downstream, i.e., in the final markets.

Doing so, the aim of the project is to study how the intensity of competition in real markets can be altered by the information provided by upstream intermediaries, and how the intensity of competition between these intermediaries is transmitted to the real markets and the competitive processes that determine their efficiency.