INSTITUTE OF ADVANCED STUDIES

ISA Lecture 2018

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Linguistic meaning: Resisting the seductions of logic

Semantics, the study of linguistic meaning, makes a conscious effort to follow assumptions originally proposed by philosophers of language. Indeed, linguistic meaning is often defined with respect to truth conditions, i.e., how reality must be for the expressed proposition to be true. Moreover, any linguistic expression which seems to have a logical counterpart has been analyzed as a logical operator (Grice 1989). I will argue that linguists must resist the temptation of reducing language to logic. Language is psychological more than it is logical (Gigerenzer 2007). So-called natural language logical operators, such as some and most and or are bona-fide lexical items. With respect to truth conditions, my claim is that linguists have sometimes turned to "objective" reality for specifying linguistic meanings. Yet, I will argue that truth compatibility must absolutely be distinguished from speaker-intended readings. Applying these assumptions to the analysis of scalar quantifiers, I will argue against the logic-based analysis, according to which 'some', for example, is equated with the logical existential quantifier 'x', meaning 'at least some and possibly all'. Instead, spoken language data of American English, integrated by questionnaires, testify that 'some' (and the same is true for 'most') is lexically upper-bounded (i.e., its meaning does not include 'all'), although 'possibly all' is a truth-compatible inference potentially (but not necessarily!) associated with it.

Statistical Methods for Data Networks

The seminar aims to identify, illustrate and explain a small set of key mathematical techniques which form the backbone of statistical performance analysis when applied to data networks and communication systems. The material will be presented in the context of engineering system analysis. Although the focus and most of the examples will be on communication systems and networks, the content is also suitable for researchers and postgraduate students in other areas. Topics include: Understanding, selecting and using statistical distributions for data networks. Random processes, their modelling and statistical characterization will be motivated and illustrated from the perspective of massive MIMO for wireless networks. The seminar will aim to provide a comparison of a range of statistical models and illustrate the significance of the choices made, emphasizing the importance of mathematical statistics to evaluate system performance in a networked world.
"Cladio Bonivento" Lions Prize - 10^ edition 2018

**Collaboration as a key to reach new level of performance in the real estate and construction sector**

The productivity development in the real estate and construction sector (REC) has been lagging behind of the clear developments in other sectors throughout several decades. This is clearly pointed out in the recent report by MacKinsey & Company (2017) and is therefore calling for total reinvention of REC. Recently, certain new contracting models such as IPD (Integrated Project Delivery), Lean Project Delivery (LPD), Project Partnering and Project Alliance have been objects of gradually increasing interest. Practically this means that those contracting models have been applied in a growing manner in various construction projects. Results are very promising or can look even epochal with respect of improving the overall performance in construction projects. Behind the scenes it is possible to recognise that all named contracting models give emphasis on collaboration between project stakeholders and relating practices. It looks obvious that theoretically the success of those contracting models is based on the advanced utilization of collaboration. This lecture addresses collaboration as a phenomenon in recent relational contracting models. Collaboration between different stakeholders throughout the project life-cycle can enable maximum utilization of all specific knowledge and experience required for engineering, planning and project control. The lecture shall provide also examples from real projects to demonstrate the collaboration solutions and gained results.
The European Museums, Between Unity and Diversity

One of the challenges today is probably to rethink the old European encyclopaedism of the Enlightenment, so closely linked to the modern idea of the museum, in an age of the « global museum ». In fact, the term was not entirely unknown in the nineteenth and twentieth centuries: it evoked a huge collection representing all cultures, all periods and all kinds of objects. At the time, the claim to universality was associated more with World’s Fairs, and with various publications that were like ‘paper museums’, sometimes even, as was the custom, including ‘museum’ in their titles, as, for example, the Musée universel, a French illustrated weekly review published in the 1870s. The adjective ‘universal’ has not been used officially over the last two centuries in relation to the national museums, and its uses in critical literature have remained largely metaphorical. The writers of fin-de-siècle nineteenth-century wrote about what they called a cosmopolitan art, that was supposedly common to all humanity. Our relationship to that European identity is very different today, and its forms are highly diverse, because of the new museology that emerged between the 1960s and 1980s, and of the critic of what is often considered as an Eurocentric vision of art history, instead of a really universal one.

Islands as natural life experiments

Islands represent the diversity of Earth in all of its forms: geological, biological and cultural. There are at least 20,000 islands of an area greater than 1 km2 and millions of smaller ones. These include oceanic islands in a strict sense, atolls, land-bridge islands and continental fragments or micro-continents. Furthermore, below sea level, seamounts are important habitats for sea-life and some of them emerge above the ocean’s surface in times of lower sea levels (e.g. during glaciations) and are important for understanding dispersal of species to isolated islands via stepping stones. Islands can be found at all latitude, and all climate zones. Island area varies from New Guinea (0.75 million km2) to rocks less than 100 m2 (ten orders of magnitude). Island age varies from ca. 150 My (Madagascar) to just a few years (e.g. Surtsey, born in 1963). Island altitude varies from peaks higher than 4000 m (New Guinea, Borneo, Taiwan, Hawaii) to flat atolls just cm above the sea level. Isolation varies from more than 4000 km (Marquesas) to hundreds of m (Anglesey, Sicily, Sakhalin, etc.). Some important island features that make them biologically interesting study systems include:

i. the lower biological complexity of island communities when compared to equivalent mainland ones
ii. their clearly defined
iii. the availability of a large range of whatever properties are studied (area, age, altitude, isolation, latitude, richness, etc.)
iv. the availability of many replicates.
**Emotion, Cognition and Autonomic Nervous System: an Interacting Triad**

Everyday experience indicates that emotions affect cognitive functions. Reciprocally, cognitive processes alter the intensity of the emotional experience. The autonomic nervous system is a critical link between emotion and cognition. One key consequence of emotions is the activation autonomic responses mediated by the sympathetic or parasympathetic systems. There responses differentially control the activity of visceral organs including the heart, blood vessels, and gastrointestinal and genitourinary tracts. Visceral inputs triggered by autonomic activity are conveyed to brain areas involved in behavioral arousal, attention, and decision-making. The interactions among emotion, cognition, and autonomic function are controlled by a network of structures distributed throughout the central nervous system. They include the cingulate cortex, insula, amygdala, hypothalamus, and several areas of the brainstem. These areas are components of both the central autonomic network and the pain modulation network and closely interact with areas controlling arousal and motivation. Recent neuroanatomical, neurophysiological and neurochemical techniques have provided increasing insight into the function of these regions. Functional and structural neuroimaging now allow identifying networks involved in emotional and cognitive processing and their interactions with autonomic responses in humans. The aim of this conference is to discuss some of these interactions in health and disease.

**Who will take care of granny? Providing sustainable long-term care: a looming challenge**

Long-term care (LTC) concerns people who depend on help to carry out daily activities. It is delivered informally by families, and formally by professional care assistants, at home or in an institution. The governments of most industrialized countries are involved in the provision or financing of LTC services, but to different degrees. Markets for private LTC insurance exist, but remain thin in most countries. LTC needs appear because of old age dependency, associated with cognitive impairments (like Alzheimer and other forms of dementia or Parkinson) and occurs typically after age 80. The LTC needs arising from this form of dependency represent a major challenge for the decades to come, because of population aging. Currently the family is the main provider, and informal care represents roughly 2/3 of total care. This situation is inefficient, as it leaves some elderly without proper care and often imposes a considerable burden on caregivers. This creates a potential role for public intervention. However, public LTC policy (and private insurance) will interact with informal care, and more generally the exchanges within the family. Consequently policy design has to account for the induced changes in intergenerational transfers. My lecture will first provide an overview of this problem and then present some of my recent research studying the design of LTC policy.
ISA Medal for Science

Science and society. What do they owe each other?

Science is supposed to be neutral and impersonal but society is dynamic. Should science be influenced by societal and political pressures? Do the expectations that different societies and cultures have from science change the nature of the science itself?

Scientists, owe it to society to provide guidance, leadership and moral stature, but society should provide the framework in which scientists can exercise this role. This can only happen if morality and ethics are not given the go by.

Indic thought is free of ideological fundamentalism and is characterized by epistemological plurality. It is unique in that it says that, in the light of science, anything that is untrue—even in religion—must go.

In our present narcissistic, over competitive world, scientists need to shed their neutrality. If a belief is provided by society that there is something larger than the individual, ethics will naturally flow into science again.
Understanding the mechanism(s) of metal ion toxicity

The use of metal compounds as antimicrobial agents has been around since antiquity, only to be replaced by the introduction of organic antibiotics and antiseptics in the mid 20th century. The interest in my group is the biochemical mechanisms of resistance towards metal-based antimicrobial agents. There is now a strong understanding of resistance mechanisms of bacteria growing as free-swimming stage (planktonic). However, considerably less is understood about the mechanisms of resistance of bacteria towards metals grown in their surface attached sessile state (Biofilms). Furthermore, there is remarkably little understood on how metals are toxic to bacteria.

My group has used toxicity profiling to understand fundamental chemical properties contributing to resistance and toxicity. I will also describe our work considering both single species bacteria and environmental microbiome communities. Through such studies, the overarching goal of my research in this area is to obtain insights into the mechanisms of metal resistance/tolerance/toxicity, particularly in the context of bacterial biofilms. Such research is of interest as we are seeing more metal-based antimicrobials being implemented for infection control in medicine and agriculture as disinfectants.
Kairós or The Right Moment in Christian Nachleben & Iconology

A complex concept that even Cicero found difficult to translate, the Greek term kairós expresses an idea of ‘grasping the right moment’, which travelled through art, literature, and philosophy. And even today, it is central to debates over time management. Combining perspectives from classical reception studies and iconology, my ongoing project is about the reception of kairós in the visual medium from antiquity to the Renaissance. How was the notion of kairós visualized in images throughout time, from antiquity to the early modern era? And more specifically, how did text and image work together to transform the notion of kairós in various contexts?

I gather the largely disconnected ‘textual’ and ‘visual’ research traditions about the reception of kairós in order to explore, more systematically than has been attempted before, the Nachleben of this motif in the visual realm. I give special attention to the transformation processes kairós underwent, it traces key moments in its transformation history such as the revival of artistic interest in kairós in the 11th and 12th centuries and the appropriation of kairós in the humanist context of the 15th and 16th centuries.

Doing so I discuss important 'blank spots' in the Nachleben research regarding the Christianization of the Kairos concept. New focused research is necessary in the semantic-exegetical context on the one hand, and the hybridization of this time-concept in medieval iconography on the other hand.
A heart attack: can we re-wire the heart?

Cardiovascular diseases (CVDs) account for 37% of all deaths in the European Union (EU). The major form of CVDs is ischaemic heart disease that in turn leads to a heart attack causing permanent damage to the muscle, since the heart is not capable of regenerating itself.

Heart failure is the leading cause of death in the EU (14% of all deaths), with an enormous economic burden estimated at €59Bn per year. Despite the socioeconomic ill effects of heart failure, treatments are limited to surgical interventions which are detrimental in cost and efficacy.

Regenerative medicine, which aims to create synthetic constructs that can replicate the biological function, may present alternative treatments. This lecture discusses the design of a synthetic cardiac patch to help the heart regains its pumping ability. Special focus will be on the heart conduction system and its re-wiring. The heart muscle contains specialised cells that communicate by bioelectric signals propagating along the cardiac wall.

Damaged heart muscle cannot transmit these signals and as such interrupt their propagation along the tissue. We posed the question whether we can re-wire the heart to help its signal propagates. Taking a multidisciplinary approach, we have developed a synthetic material that is both biocompatible and conductive. We show that by placing a conductive patch that bridges healthy and damaged tissue, propagation of the bioelectric signal is restored.
Sanson Helena Louise
Clare college, University of Cambridge

Michelacci Lara – FICLIT
Department of Classical Philology and Italian Studies

Women Language Literature in Italy. Women, Language(s) and Translation in Italy’s Long Eighteenth Century

This lecture will investigate women translators’ roles in the circulation of new ideas and dissemination of knowledge in 18th- and early 19th-century Italy.

Whereas women translators in England, Germany and France have been the object of scholarly works (e.g. Hosington, Brown, Wehinger, Urman, von Flotow), the topic of women translators in Italy so far has not received the scholarly attention it deserves. Research conducted across an extensive number of primary sources (often rare and hard to trace) reveals that translation was a means for women to express their scholarship, erudition, or civil engagement.

Translating also encompassed both a public and private element. Some women moved in cultivated circles, undertaking translation for political and ideological reasons; others took it up as a literary pastime; others depended on the income they received from it to make a living. Women translated works from a variety of different genres from classical and foreign languages into Italian, as well as from dialect to dialect, and from Italian into dialect. They worked on translating texts on their own, or as part of collaborative projects. Women’s contribution to translation in Italy in the period in question will be investigated against the background of Italy’s multilingual and multicultural context, and taking into consideration practices of and tools

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Non thermal plasma sources: single jet and multi jet setups and applications in medicine and decontamination

Quick overview on atmospheric pressure plasma sources Plasma jets features: reactive species, electric field, gas flow and target influence diagnostics Applications in health (cancer and cosmetics): known, requirements and perspectives Multi jet devices: development and application in decontamination.
The Unification of Maritime Law through International Maritime Conventions

The Maritime Law needs uniformity. The main issue is how to achieve that goal. All the nations want economic development and welfare and the international commerce is one of the main keys to meet that need. However, both national legislations and different national jurisdictions jeopardize these purposes as everyone wants to apply and be ruled its national legal system and wants that the case be heard under its own national jurisdiction, in case that the conflict arise.

Everybody wants to play the party at home! One of the tools to overcome such problems is to unify the Law of International Commerce and in particular the International Maritime Law. In other words is the issue of the Relationship between National and International Law. Kant describes it as the autproblem.

The international maritime community has approved a relevant number of international conventions (i.e., carriage of goods by sea, passenger, salvage, liens, etc.) and other international legal instruments but not all of them have been ratified by most of the nations. On the other hand, the fact of the ratification does not mean that all the legal problems have been solved. A more relevant question come into the pay: the incorporation into de national legal system and the implementation by the Sates. The lecture will focus and deal with detail these issues and at the end students will be asked to draft a national legislation to incorporate one International Maritime Convention in force.