

Slow Complexity

Nicolò Ceccarelli

Six years from its first appearance, two international conferences and three everyday 'regional' gatherings, after our first Alghero event, I wish to take advantage of the publishing of this volume to make a first assessment about what we have achieved so far, and on our current efforts in communicating complexity.

Stemming from a community of Italian and European scholars working in the public sector university, 2CO COmmunicating COmplexity, was conceived as a space for exploring languages, approaches and technologies to respond to the emerging need for making the complex information typical of our times increasingly accessible through design.

The project originated within a group of researchers that, despite being primarily engaged in academic research, actively cultivate the design practice and pursue cross-fertilization between the domains of research and professional practice, hence combining, whenever possible, theoretical work with projects affecting 'real' people.

This particular point of view is effectively described in a passage from the call for abstracts page of the conference's 2013 first edition, which stated how the organizing committee was: *"looking for contributions and approaches that describe on-going experiences, completed projects, case studies in design methodologies. The focus is on 'practical' design-oriented approaches, however, more theory and methodology-centered contributions are also welcome"*.

Over the last few decades design has responded to the massive transformations that have affected our society evolving into a vast and comprehensive discipline. This entailed adapting to emerging challenges that have become less tangible, more inter-connected and complex. Design has evolved, embracing new areas, facing new challenges. This also applies to information design.

A lot of water has gone under the bridge since E. D. Tufte's superb trilogy* presented something that looked immediately familiar – even obvious – to many of us, having only flipped through a few pages: shaping visual information so to turning the complex into something simple and understandable, is one of design's finest tasks.

Information Design is today in the spotlight, but this has not always been the case. Possibly because of its intrinsic practicalness, it has in fact been long underestimated by the graphic design community. Apart for a few celebrated cases – Isotype, to name one – or for the occasional love affairs between graphic designers and pictograms – this branch of design has often been reduced to an appendix, a mere utility, a pastime. Only recently has info-design managed to establish itself as a key topic, gaining space in the professional battlefield, defining its boundaries as a discipline. The info-designer has taken the place and prestige held by the web designer at the turn of the Millenium. Some leading firms in info-design and data-visualization have eventually reached the top of the professional design ladder, while some of the bright individuals who lead them are heralded as design gurus. The subject of advanced university curricula around the world and of advanced research efforts in celebrated university laboratories, info-design has today grown to the point of becoming the subject of a few heroic design narratives.

Of course, this is much more than just another design fashion. The information society in which we live and work has reached unprecedented peaks of complexity, leading to an increased urge to explain, display, visualize. The combination between the rise in specialization in every area of knowledge and the impetuous growth in the production (and consumption...) of informative contents, has generated an extraordinary multiplicative effect. Furthermore, in the wake of a generalized increasing social demand for direct participation, a growing arena of public and private bodies; governmental and non-governmental organizations, administrations

and corporate companies, are increasingly engaged in disseminating data and information of public interest.

Interestingly, as the growth in the supply/demand of information may make us feel as if we were literally immersed in information, only seldom are these actually accessible: readable, translatable, understandable, in other terms useful, to non-insiders.

Responding to these demands, the emerging democratizing trends for open data, transparent information, and to the growing and apparently unstoppable hunger of ‘visual explanations’, is what ultimately triggered the 2CO venture. The project’s domain of activity lies then the space between the profile of the designer as a *transformer*, proposed by Marie Neurath, and that of the *information architect* outlined by Richard Saul Wurman. Here, we believe, is to be found one of the most urgent tasks for the communication design community: minimizing the distance between data, information and the public by reducing their complexity, hence translating it into accessible formats. The COmmunicating COmplexity project moves then from acknowledging the rapid transformations taking place in the communication system scenario both in the relationships between production / use of information and in the modifications affecting the ways we use to inform and get informed, and models itself on the format of a *quasi-scientific* society of designers/researchers.

A formula

2CO was therefore thought of in first place as a cultural endeavor. The international Design Conference, initiated in 2013 as a periodic event, has developed through time into a flexible platform from which a growing community can articulate a series of initiatives of dissemination, education, training, publishing and exhibition.

As anticipated, in its quest to explore how we can translate the information complexity characteristic of our time into something more

accessible to the public, 2CO COmmunicating COmplexity stands somewhere between theory and practice and on the contamination between different knowledge areas and observation points. A short overview of the arena of experts we have involved – mainly as keynote speakers – to the first two editions of the Conference, helps to illustrate the particular angle we have given to the project.

For the Alghero's 2013 edition we were able to invite: Paul Wells, director of the Animation Academy at Loughborough University, UK, a key figure in animation studies, a scholar whose background combines an excellent theoretical base with collaborations with the BBC in producing tv programs; Santiago Ortiz, a leading founder of Bestiario.org, a team of creative explorers who opened the path of digital design in the area of making complexity visible; Michael Stoll, a worldwide highly respected connoisseurs of info-graphics and a Professor at the University of Augsburg, owner of one of the most complete historical collections of info-graphic artifacts; Dave Daniels, a visual designer and motion-grapher who in parallel to a long term personal research on the connections between images, movement and music, has carried out exceptional design work for events such as the Led Zeppelin 2007 reunion concert, or Roger Waters' "The Wall" Berlin concert.

For the 2017 Tenerife edition on the other side, we were lucky to have with us Kelli Anderson, a Brooklyn-based visual designer who, combining curiosity, design wit, aesthetic expertise and a sensible use of technology, reminds a designer-artist-inventor of almost Renaissance memory; Paolo Ciuccarelli, currently Professor at Boston's Northeastern University after leading Milan's celebrated Density Design research laboratory and pursuing the idea of information design as a humanistic practice; Jaime Serra, one of the central figures of the Iberian movement of *info-periodismo* who in his work pursues the cross-fertilization between info-design and artistic expression.

Aside from the exceptional quality of these presenters, added value is given by the variety and breadth of approaches and points of view they represent as a whole, which can be very helpful to address the challenges ahead of us, and makes us think we are on the right track for the task.

2CO Junior-Track

Another feature of our project is the care given to the scholars and designers of the future: our students. Each 2CO conference begins with a special session of a category we have labeled ‘Junior-track’, directed to freshly graduated students starting to make their first steps within the territories of research. The Junior-track is a sign of interest, a tangible encouragement to scholarly paths which are naturally not yet fully mature (the contributions of this category, originally limited to the format of poster presentation have, starting from the 2017 edition, been brought to that of a ‘short paper’). This dedicated session aims at opening a space and a real opportunity for interaction, among young designers-researchers, their peers from other universities and other countries, and a chance to confront their ideas with the scholars, experts and professionals gathered for the conference.

Education in Communicating Complexity: the 2CO workshops

Another important evolutive step in the 2CO project is connected with the exploration of the educational dimension of communicating complexity. The amazing potential behind the effort of setting up an international conference, often ends up being only partially exploited. Special guests and keynote speakers come and go – often without really getting in touch with the community gathered for the conference. Meanwhile, securing some academic acknowledgment

(having a paper accepted, presenting it, having it published...) seems to have become nowadays the attendees' prime, often sole, concern.

The 2CO workshops project, started at the Tenerife 2017 conference, is what we devised to make the most of this great deal of expertise, looking to explore ways to translate such knowledge into didactic terms. Open to students as well as to local professionals, the workshops obviously represent for the hosting institutions not to be missed learning opportunities, as well as priceless intensive didactic resources in terms of contents, stimuli, ideas. The main idea was to take maximum advantage of the presence of experts – our keynote speakers and some of our guests – by engaging them to lead a series of design workshops. So we asked some of our 2CO workshops leaders to challenge themselves with a specific formula. Rather than having them replicating their most successful workshops, we engaged them to leave their comfort-zone, venturing in co-leading a workshop with someone from a different field, bringing to the project a combination of points of view and expertise. The ideal 2CO workshop is based on the spark that can only be produced when you have two voices, two approaches, two different skills, two languages and two cultures, having them meet halfway, in a possibly partially unexplored, territory.

This seems to us, a great way of exploring, and learning – everyone, not only the students – something new.

This experimental path was started in 2017 with the two workshops:

Processing complexity. How to design great information graphics_

lead by Alfredo Calosci and Michael Stoll/Lisa Borgenheimer.

In-camera simplicity. Animation basics for data presentation_

lead by Nicolò Ceccarelli and Eleni Tsampra

Complemented by a series of other interesting workshops:

Diagrama, el juego de diagramar la dialéctica_

lead by Jaime Serra

Visualizing ethical values in Design praxis: the challenge of professional deontology towards the strengthening of democracy_
lead by Antoni Mañach

Draw me a coffee. A collaborative experience to understand how to design complexity_
lead by Letizia Bollini .

The extra-bonus workshop *This book is a camera*, lead by Kelli Anderson completed the picture.

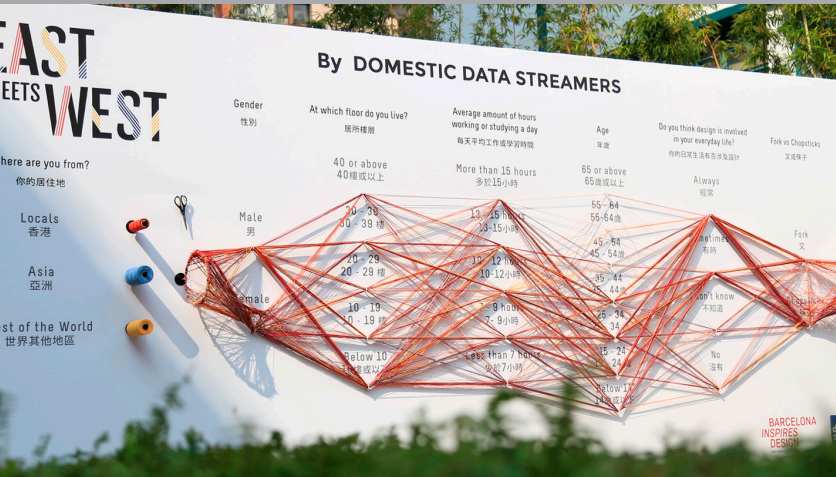
2COeveryday

2COeveryday is a formula recently introduced as a part of our 'platform' vision. Intended primarily as an element of continuity between the organization of the main conferences, a 2COeveryday gathering is a condensed seminar, organized in collaboration with one of the partners of our scientific network. Structured as a one-day session, the event hosts a series of presentations and, whenever possible, one or more workshops. 2COeveryday completely reverses the typical format of the international conference. To make it happen, in fact, a selected team of 2CO's core members travels to a specific destination to meet local scholars, professionals, students from partner schools.

The idea behind this sort of 'traveling show' is to put together a series of small decentralized gatherings aimed at promoting a first-hand exchange with 2CO's extended community.

So far three 2COeveryday events have taken place: in Liverpool, UK (may 2018) organized with the School of Art and Design of Liverpool John Moores University; Milan, Italy (February 2019) organized with Density Design at the Politecnico di Milano and finally in Cerezales de Condado, near Leon, in the North of Spain (September 2019), organized in cooperation with Fundación Cerezales Antonino y Cinia (FCAYC).

Apart from achieving the very refreshing feeling of a real two-way exchange between the two worlds of professional and research practice, the relaxed format characteristic of the 2COeveryday format has made it possible to bringing to light small treasures that may have not otherwise made it to a more formal academic setting. I am happy to share here some examples.



Pau Garcia, Domestic Data Streamers, Barcelona, 2COeveryday Milan, February 2019.

With highly iconic informative installations, Barcelona-based Domestic Data Streamers, have championed the emerging approach to data physicalization. Following this technique, large data sets are converted in physical installations that involve the public both spatially and emotionally, resulting in experiences that make information understandable and therefore more accessible. Interactivity and direct participation in the production of data also are key metaphorical elements of their approach.

Typically structured in two (morning and afternoon) sessions around an informal lunch, the event showcases a limited number of presentations, planned with the local organizing partner. The program includes contributions from 2CO researchers and by professionals, scholars and PhD students from the area, selected either on the grounds of a direct invitations or of a rather informal word of mouth-kind of call.

The relaxed format, generous presentation time (at least 30 minutes per presentation, plus questions and answers) and the general informal atmosphere, are instrumental in shaping the event. Nevertheless, the decisive factor is possibly the event's distinctive 'academic freedom'. Participating to a 2COeveryday gathering, in fact, does not imply presenting a paper.

This encourages the involvement of professionals, whom are often not too comfortable with spending the time and energy it usually takes to make an on-going experiment or a side-project 'academically presentable'. The relaxed and non-competitive atmosphere, meanwhile, stimulates scholars to present on-going projects. Possibly not ready for a more formal setting, these often receive very precious feedback and suggestions for their future development from colleagues and experts in the field.

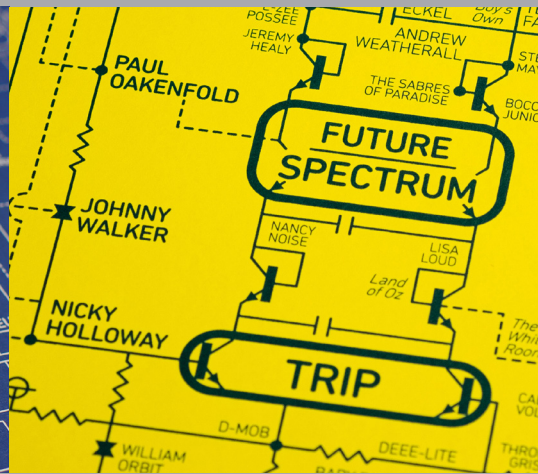
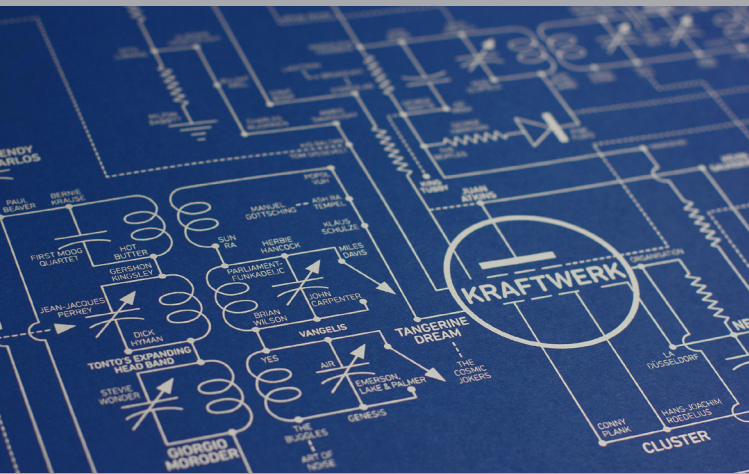
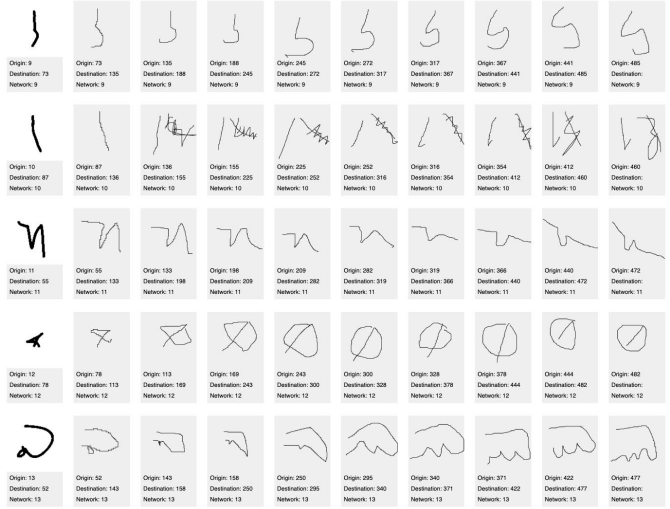
In each of the three events we organized so far, this combination has generated a series of very positive effects. The local design community has acknowledged and appreciated the effort – a small group of people visiting from international locations, at their own expense, to share a piece of work or research – responding with great enthusiasm.

Most of all, some exceptionally interesting work – in part presented here in the side boxes – has emerged. Ultimately, organizing a local event in this format is easier, much more convenient: in fact more fun. The format really makes it possible to get to know the people, understand the context, establish connections.

Giovanni Magni, Accurat, Milano, 2COeveryday Milan, February 2019.

Selected by a team of scientists from UC Berkeley and Arizona State University, Accurat has served as design leader in a DARPA-funded project aimed at developing next-generation methods for social science research. The project combines the

two approaches to visual information of scientist and designers, to develop data-visualization-driven open-source software resources for crowd-sourced experimentation. The resulting halfway encounter is the starting point for the development of a model in which visual information becomes a facilitator for producing new knowledge.



James Quail, Dorothy, Liverpool, 2COeveryday Liverpool, May 2018.

Started as a personal project, James Quail's Love Maps chart, with painstaking care, the evolutions, influences and interconnections between bands and contemporary counter-culture. Composed as conceptual maps, the series – which includes variety of musical domains such as Dance, Hip-Hop, Elec-

tric, Alternative – are not intended to offer a neutral point of view, being rather filtered through the author's personal sensitivity and experience as a music enthusiast, often a direct witness of the events. Almost a series of style exercises, the masterly composed maps demonstrate the power of visual design to incorporate into a chart something fluid as musical atmosphere.

Going Slow...

Finally, allow me to mention another distinctive trait of the project, which I like to think as as our *slow food* model: the convivial atmosphere on which we try to shape any 2CO event.

Widely well known today as an international brand *Slow Food* was started in Northern Italy in the mid'Eighties as a non-profit organization aimed at promoting an easy approach to life. As stated in its original manifesto, the slow food idea was *against those who mistake a frantic life for efficiency*, promoting good food (...see, almost like 'good' design...), either as a very 'gourmet-like' tangible factor, and as a metaphor for an attitude to a relaxed and convivial life. In this perspective food becomes the centerpiece of a cultural approach that positively associates time, quality of traditional local ingredients, genius-loci, and socialization. The *slow* adjective hence becomes a synonymous of caring, in terms of human connections.

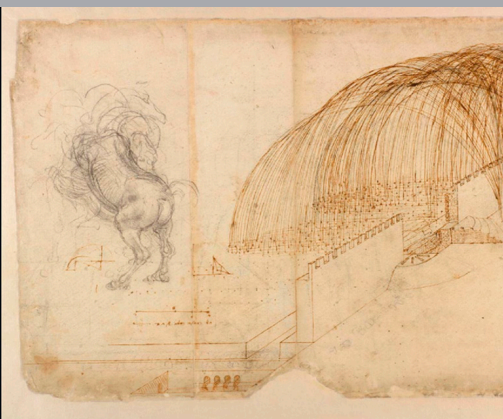
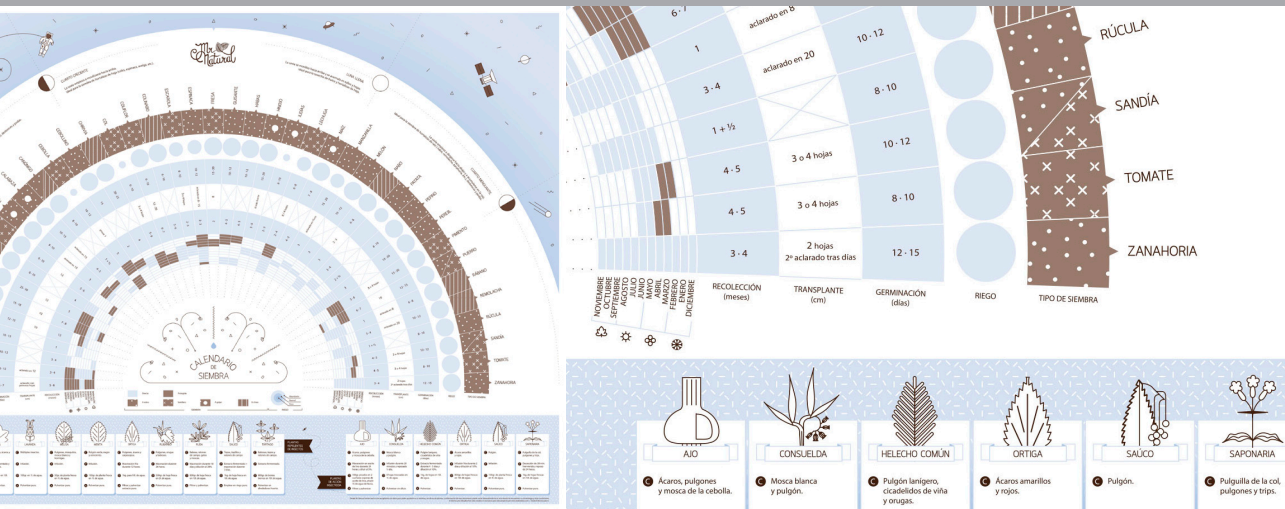
In this frame, and possibly in association with the 'Mediterranean' roots of our project, in any of our events special care is given to ensuring the right space and time for people to share, interact, get in touch with each other. The relatively small size of our events helps in leaving those meaningful pockets, for taking the time it takes, making space for a conference to reconnect with its proper etymological meaning of *cum-ferire*, coming together. Call it human factors: in our *slow* vision the informal, interpersonal moments between presentation sessions, are as relevant as the actual presentations. So we put some effort in making these opportunities take place, and we are absolutely delighted whenever we see a student and a design guru chatting informally around a pasta plate.

So, I really cannot say which of the two distinctively Italian factors, the slow food-like approach or the idea of conducting research work through the design practice – in fact possibly both – have played a major role in granting our project one the acknowledgments that has

Katia Prada, el abrelatas, Spain.
2COeveryday Cereales de Condado,
September 2019.

With her Calendario de Siembra, Katia revisited an evergreen commodity, the planting calendar/almanac. With her elegant adaptation of this ancient tool providing information on planting, sowing and harvesting

of horticultural crops, Katia has turned the basic illustrated model into an ingenious time-based visual artifact. The result works both as a practical tool providing information on a variety of interconnected factors ranging from water and soil conditions to the moon phases, and a promotional poster for MrNatural, the project's commissioner.



Matteo Bonera, The Visual Agency,
2COeveryday Cereales de Condado,
September 2019.

Codex-Atlanticus.it, a classic and very elegant example of digital enabler, developed by The Visual Agency and the Ambrosiana Library in Milano, opens up new ways of exploring a unique historical artifact: the Codex Atlanticus, Leonardo da

Vinci's largest repository of texts, sketches, design ideas and notes. The opening panoramic overview of the interactive system offers to users access to the document's contents according to subject matters and themes. An interesting feature is the possibility to reorganize the Codex's pages according to their chronological order of creation.



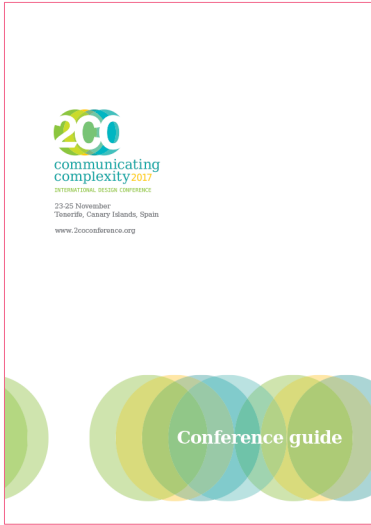
made us most proud over the last years. The inclusion of 2CO in the 'Studies and cultural initiatives based on design' category of the 2018 ADI Design INDEX**.

Although we clearly don't think our project to be necessarily better than others, we certainly treasure some of the traits that make it special, if not unique. It is a small legacy deserving of being nurtured, and worthy of the huge efforts and small sacrifices it takes to make it run.

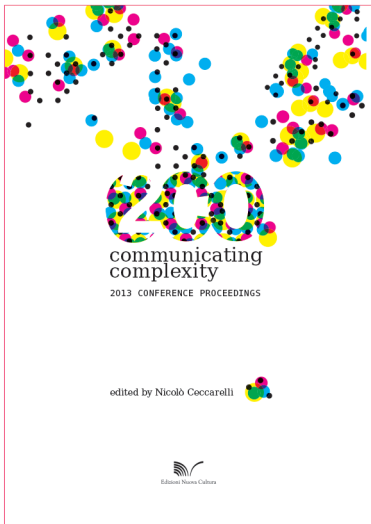
* "The Visual Display of Quantitative Information" (1983); "Visual explanations" (1990); "Envisioning Information" (1997) Graphic Press, Cheshire Connecticut.

** Founded in 1957 ADI, the Italian Association for Industrial Design is Italy's main Design. Every year ADI selects a group of designs in various categories to be included in the ADI Design Index, from which... every two years the winners of the Compasso d'Oro.

2CO : ADI DESIGN INDEX 2018



Calendar 2CO2 Week 21-25 November Campus Guajara				
tue_21	wed_22	thu_23	fri_24	sat_25
8.00		Registration	Registration	
9.00	Workshops	Opening_2CO2 Keynote_Paolo Ciccarelli	Infographics: Session_02	
10.00		Coffee break	Coffee break	Keynote_Jaime Serra
11.00	Workshops	Info-employment: Session_01	Keynote_Kelli Anderson	Kelli Anderson Workshop
12.00		Junior Track/Posters Session	Interactive data viz: Session	
13.00		Lunch	Lunch	
14.00	Lunch	Lunch	Lunch	Firewall lunch & closing remarks
15.00			Informative animation: Session	
16.00	Workshops	Info-employment: Session_02	Infographics: Session_03	Optional visit: Parque Botánico del Teide Parque Rural de Anaga
17.00		Infographics: Session_01		
18.00				
19.00	Still opening History of Infographics	Guided tour to UNESCO world Heritage site La Laguna Historic Center		
20.00	Exhibition visit & 2CO2 welcome cocktail	Social dinner Cafeteria de La Laguna	Social and cultural events	
21.00			La Laguna and Santa Cruz de Tenerife	
22.00				



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ROD Communicating Complexity

5 New icons to explain complexity

An anticipated at the end of Section 3, however, the "typification" (i.e. the design of pictograms that are useful for education purposes and for the dissemination of ideas and of scientific, economic, sociological concepts etc.), has come to a halt or it is slowly carrying on. Many pictograms are needed. In this section we offer some of them, specifically related to a few key words of complexity.

Linear interaction (sequential)
A component affects another component. Example: a star and a planet.
 $A \rightarrow B$

Item
A component affects another component, which affects a third component (and so on). Example: a star, a planet and a satellite.
 $A \rightarrow B \rightarrow C$

Linear interaction (hub)
A component affects a second and a third component. Example: a transmitter and two receivers.
 $A \rightarrow B$
 $A \rightarrow C$

Feedback
A component affects another component. In turn, the second component affects the first.
 $A \rightarrow B$
 $B \rightarrow A$

Negative Feedback
A component affects /stimulates a second component, which inhibits/steers the first. The system levels off and finds a balance. Example: a heat control system.

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Adolfo Delgado
Index of Complexity

Homonostasis
A component affects another component. In turn, the second component affects the first. The system levels off and finds a balance. Example: Lotka-Volterra predator-prey equations.
 $\frac{dx}{dt} = x(\alpha - \beta y)$
 $\frac{dy}{dt} = -y(\gamma - \delta x)$

Positive Feedback
A component affects /stimulates another component. The second component further affects the first one. Example: the vicious circle of drug addiction.
Drug consumption → Increased addiction → Increased consumption → Drug consumption

Escalation
A component affects /stimulates another component. The second component further affects the first one. The system grows rapidly. Example: nuclear proliferation.
Nuclear proliferation in USA → Nuclear proliferation in USSR → Nuclear proliferation in USA

Domino effect
A component affects another component, which affects a third component (and so on). The system grows rapidly. Example: German reunification.
19 August 1989: Hungary dismantles border barrier between East and West Germany
18 October 1989: East German protesters gather in Leipzig
18 March 1990: East Germany declares its independence
1 July 1990: East Germany adopts West German currency
3 October 1990: German reunification

The History of Infographics Exhibit

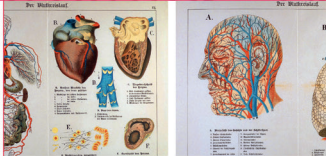
Michael Stoll opening address
wednesday 22 november

Over the years Professor Stoll has combined his scholarly and teaching work in the area of infographics with a passion for collecting infographic historical artifacts. As a result Michael is the proud owner of one of the largest collections on the topic, the highlights of which have become the traveling exhibition "History of Infographics", which we are happy to present during our conference.

Michael Stoll will present his exhibit, with an introductory speech, as the opening act of our Conference at Campus Cagliari, on wednesday 22 november starting from 11.30. After that we will visit the exhibit and celebrate the Conference's start with a Welcome Cocktail.

Prof. Michael Stoll has a wealth of experience and knowledge regarding information graphics. Since

2005, he has been teaching infography at the Augustap University of Applied Sciences, where he is head of the study track Information Design in the Department of Design. He also teaches courses about visual storytelling at Darmstadt University of Applied Sciences (Germany) and visual culture at the University of Newcastle (Australia). Outside of teaching, he serves as the Educational Director (ital. AiFab) for the Society for News Design (SND) and coordinates the academic exchange between participating universities. He is also a member of the International Institute for Information Design (I3D) (Korea) and serves on the editorial board of the Information Design Journal. Prof. Stoll is actively involved in several conferences related to information graphics, among them Making, the renowned infographics world summit in Pamplona, Spain.



Keynote speakers

Kelli Anderson
artist / designer and thinker

Kelli Anderson is a designer interested in elegantly exposing the world's complexity—especially as it pertains to scientific concepts—through interactive, democratic means. Obsessed, in particular, with "to be magic", she believes that an audience can be best engaged through firsthand experiences. Prior projects include a pop-up book that became a glassblower's camera (This Book is a Camera), her design and animation for Timbop's acclaimed Human Body app, her paper record player wedding invitations, and her infographic work.

This Fall, she will publish This Book is a Planetarium—a collection of functional pop-up constellations which educate scientific principles in tactile terms (and... yeah, it includes a tiny paper planetarium.)

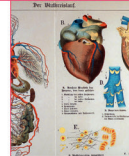


Paolo Chircaru
Scientific Director, Design/Design Research Lab - Politecnico di Milano

Associate Professor at Politecnico di Milano. Head of the Itac and Mic in Communication Design. Paolo is member of the Design PhD board at Politecnico and co-editor of the journal "Big Data and Society" (SAGE publications).

Founder and scientific director of Design/Design Research Lab, he is member of the Steering Committee of the «Reassembling the Republic of Letters» CDTI Action where he leads the Working Group on Communication and Data Visualization.

He participated to several applied research projects funded by private and public organizations where Communication Design and Data Visualization competences have been used to face a vast range



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Alghero, 25-26 October 2013

communicating complexity

INTERNATIONAL DESIGN CONFERENCE

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