



KREYONDAY | TEST YOUR CREATIVITY

AN EVENT OF INTERACTIVE POPULAR SCIENCE

The **KREYONDAY** is a unique event of popular science, fully focused on creativity and innovation processes. The event is the outcome of a collaboration between the **Kreyon project** (www.kreyon.net) and the **Palazzo delle Esposizioni and Scuderie del Quirinale Education Service - Art Workshop**. Open conferences, held by world renowned scientists and experts (physicists, mathematicians, anthropologists, artists, puzzle experts, chess players, etc.), will set the stage while interactive installations and games will allow participants to test their own creativity. Finally ateliers and workshops will complete what is going to be an immersive experience. All games, installations and ateliers are thought to be fun and will be paralleled by explanations on the scientific aims and contexts. Based on age and personal interests each and every one will have the opportunity to carve his/her learning-by-doing path.

WHAT HAPPENS AT THE KEYON DAY?

The **Kreyon Day** will take place on **Sunday September the 13th 2015 from 10am to 7pm at the Palazzo delle Esposizioni in Rome** (entrance from Via Milano). **The participation is fully free.** A registration will be required to download a QR code that will grant access to all games and installations. Due to limited number of available seats, a free registration will be also required to participate to the workshops. From 2 to 7 pm the Forum will host a series of open short talks (both in English and in Italian) held by an international panel of experts in creativity. Not only scientists, thus, but also artists, copywriters as **Annamaria Testa**, who since 2008 has been editing the website about innovation and creativity *Nuovo e Utile*, or the Olympic chess player champion **Judit Polgar**. The conferences will be either in English or in Italian. Some of the speakers will also conduct focused and interactive ateliers, suitable for all ages. You will be able to understand the “magic” of numbers with the mathematician **Ennio Peres**, take part to an experiment about the impact of constraints on creative task with Annamaria Testa, learn scientific concepts through frozen bubbles with the physicist **Ilan Chabay**. For the little ones a workshop inspired by the books of the artist **Katsumi Komagata** will be organized and conducted by the Palazzo delle Esposizioni and Scuderie del Quirinale Education Service - Art Workshop. Throughout the day you will be able to contribute to experiments of collective creativity such as Lego sculptures and murals or giant anagrams to carry out together. These installations will allow you to experience firsthand how we face a challenge, what drives us to find new solutions, what hinders us, what attract us, how we interact with others in order to achieve a goal. Web-games designed and created by the research team of the project Kreyon will be also available in Fontana area. Creastoria, Record, LegoPixelArt and LegoMusic challenge our ability to create something new from a constrained set of items. It will be possible to play as single players, but also measure our similarity or divergence by comparison with other players while finding solutions.

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THE KREYON PROJECT

The **Kreyon project**, born from the interest of a team of Italian physicists in themes related to creativity and innovation, features a strong international and interdisciplinary character. Funded by the John Templeton Foundation, it involves a community of scientists, and world-renowned experts of creativity from very different areas - physics, mathematics, anthropology, art, photography, games, puzzles, chess - along as several research Institutions and Foundations. Kreyon is coordinated by Vittorio Loreto, professor of Physics of Complex Systems at Sapienza University of Rome and research leader at ISI Foundation in Turin.

WHY ARE WE SO INTERESTED IN CREATIVITY AND INNOVATION?

Because they are key elements in the evolution of human societies, biological systems and technology, since they represent the first motor to explore new solutions in ever-changing and unpredictable environments. From this perspective they are becoming progressively more and more crucial to help us, as individuals and societies, to face the challenges of our complex world.

BUT IS IT REALLY POSSIBLE TO MEASURE CREATIVITY?

Not really, actually. But creative solutions, novelties and innovation share an important feature: often innovative events do not happen by chance, rather they seem to be triggered by some previous novelty or innovation. By opening new possibilities, one novelty can pave the way for others in a process that Kauffman has called “**expanding the adjacent possible**”. The object of our scientific investigation are the dynamics of correlated novelties. Our aim is to unfold and quantify the underlying mechanisms through which creativity emerges and innovations diffuse, compete and stabilize, or eventually die.

NOT QUITE SATISFIED? NEED MORE DETAILS?

Here are some of our big questions. To which extent creativity is an individual or a social process? How to quantify the value of a new idea? Does creativity require (or is enhanced by) specific constraints? Do creativity and innovation proceed gradually or through large leaps? How several innovations compete, fail and get successful? Why sometimes innovations can fail because too far ahead of their times? Can one find signatures of the complex triggering processes among innovations, as predicted by the notion of adjacent possible? Is it possible to identify the best environments and the best strategies to foster creativity and innovation?

ARE WE USING SPECIFIC TOOLS ?

Yes, we definitively are. We have an unique opportunity to exploit the alignment of three circumstances. First of all the ability to monitor, quantify and model human behaviors at unprecedented levels of resolution and scale, unleashed by the planetary-scale adoption of the World Wide Web, mobile communication technologies, e-commerce systems, and on-line social networks. The opportunities web-gaming and social computation are offering to the emergence of new forms of participation arising from the interplay of ICT services and communities of citizens. Last but not the least the theoretical and modeling tools recently developed by physicists, mathematicians, computer and social scientists to analyse, interpret and visualize complex data sets have reached the maturity to effectively address the challenges of our era.

WHY PLAY IS SO IMPORTANT?

Play is the fundamental context for most human learning across ages: activities like exploration, experimentation, innovation, testing the limits, etc. all happens best when playing. The use of games and more specifically web-based games for research purposes is a fast spreading phenomenon, changing the way research activities are conducted and how data are generated in many scientific fields.