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The science-policy interface – in need for "society" as a third component

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The European Union is funding research through so-called framework programmes (FPs), the financial and strategic tools to stimulate excellence, innovation, economic growth and creation of jobs across Europe. The allocated research budgets increased considerably from less than 4 billion Euro for FP1 (4 years) to 100 billion for Horizon Europe (FP9, 7 years), demonstrating the strategic importance that is being attributed to research and development for a strong and competitive Europe. The upcoming framework programme Horizon Europe will add a new level of ambition for the scientific, economic as well as societal impact of EU funding and address global challenges that affect the quality of our daily lives.

However, if societal issues that affect our everyday lives are to be addressed effectively in research and to drive the necessary innovation process in view of a better future, then the third component at the science-policy interface must be "society". Robust data, facts and evidences represent an important input to policy making in addition to other inputs and considerations. Scientists and policy makers must therefore not only network amongst their communities and experts but also interact with the public and engage in dialogue with citizens in order to first understand what the concerns and issues are and later to explain the solutions.

The Joint Research Centre has engaged in an Art, Science and Society programme to fill this gap. Artists are invited to the JRC to co-develop projects with the scientists under a specific theme – in 2015 the topic was "Food", in 2017 "Fairness" and in 2019 "Big Data, Digital Transformation and Artificial Intelligence". The final works are exhibited during the so-called Resonances Festival.

This presentation illustrates at the example of the Resonances III installation "Weather Prediction by Numerical Process - a forecast for Europe" by artists Lise Autogena and Joshua Portway in collaboration with the co-authors, the added value of this approach. The installation is a performance inspired by the work of L.F. Richardson (1881–1953), a truly multi-disciplinary scientist, who contributed to finite difference solutions of partial differential equations, turbulent flow and diffusion, also fractals, and the cause and evolution of conflicts. He was particularly visionary in his work on designing a numerical scheme for weather forecasting. While serving as ambulance driver during WWI, he performed the calculation for a weather forecast for Europe "by hand". Even if the result of his years of calculations resulted in a wrong forecast because the numerical solution was not stable, the methodology for numerical weather forecast was born and

today's weather forecasts follow largely the same method – just with infinite more computing power. Richardson estimated that 64000 scientists, working together in a big orchestrated calculation, would be needed to calculate the weather in real-time.

The chosen format for the art installation is a performance, ritualistically re-enacting a small part of this epic calculation, drawing the audience into a multi-faceted discussion on the relevance of Richardson's legacy today in the times of super computing and climate change.

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