

Visual network storytelling

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▶ **To cite this version:**

Paul Girard. Visual network storytelling. ARS'15 International Workshop, Università degli Studi di Salerno, Apr 2015, Anacapri, Italy. hal-03459913

HAL Id: hal-03459913
https://sciencespo.hal.science/hal-03459913

Submitted on 1 Dec 2021

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ARS '15

FIFTH INTERNATIONAL WORKSHOP ON SOCIAL NETWORK ANALYSIS

APRIL 29 - 30, 2015

ANACAPRI - CAPRI ISLAND - ITALY

BOOK OF ABSTRACTS

Visual network storytelling

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Abstract

We love networks! Networks are powerful conceptual tools, encapsulating in a single item multiple affordances for computation (networks as graphs), visualization (networks as maps) and manipulation of data (networks as interfaces). In the field of mathematics, graph theory has been around since Euler's walk on Königsberg's bridges (Euler 1736). But it is not until the end of the last century that networks acquired a multidisciplinary popularity. Graph computation is certainly powerful, but it is also very demanding and for many years its advantages remained the privilege of scholars with solid mathematical fundamentals.

In the last few decades, however, networks acquired a new set of affordances and reached a larger audience, thanks to the growing availability of tools to design them. Drawn on paper or screen, networks became easier to handle and obtained properties that calculation could not express. Far from being merely aesthetic, the graphical representation of networks has an intrinsic hermeneutic value. Networks can become maps and be read as such.

Combining the computation power of graphs with the visual expressivity of maps and the interactivity of computer interface, networks can be used in Exploratory Data Analysis (Tukey, 1977). Navigating through data becomes so fluid that zooming in on a single data-point and out to a landscape of a million traces is just a click away.

Increasingly specialized software has been designed to support the exploration of network data. Tools like Pajek (vlado.fmf.uni-lj.si/pub/networks/pajek), NetDraw (sites.google.com/site/netdrawsoftware), Ucinet (www.analytictech.com/ucinet), Guess (graphexploration.cond.org) and more recently Gephi (gephi.org) have progressively smoothed out the difficulties of graph mathematics, turning a complex mathematical formalism into a more user-friendly point-and-click interface[1].

If visual exploration of networks can output to confirmatory statistics, what about sharing one network exploration with others?

We developed Manylines (https://github.com/medialab/manylines), a tool allowing you to share the visual analysis of a network with a wide audience by publishing it on the web. With Manylines, you can not only easily publish a network on the web but also share its exploration by describing the network's visual key findings. Through a set of examples, we will illustrate how the narrative opportunities of Manylines can contribute to the enunciation of a visual grammar of networks.

1 A simple look at the URLs of the subsequent tools reveals the efforts deployed to make network-manipulation tools user-friendly and thereby available to a larger public.