

Science and *South Park*, *Reddit* and *Facebook*, Leonardo da Vinci and the Vitruvian Man, and modern fairy tales about emerging technologies: science communication and popular culture

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Abstract

The prevalent lack of research on the interrelations between science, research and popular culture led to the organization of the first International Conference on Science and Research in Popular Culture #POPSCI2015, which took place at Alpen-Adria-Universität in Klagenfurt, Austria, from 17–18 September 2015. The aim of the conference was to bring together not only science communication researchers with an interest in popular culture, but also other scholars, scientists and researchers, artists, media professionals and members from the general public. In this issue of JCOM we present four invited commentaries which are all based on presentations at the conference.

Keywords

Popularization of science and technology; Public perception of science and technology; Representations of science and technology

Popular culture is a somewhat dubious category. There have been many different attempts to define it but often these definitions seem to be somewhat ethereal and sometimes even contradictory. Many of these definitions point to the everyday culture that surrounds us in our daily lives and influences us in one way or another, concerning how we see and make sense of the world. There is an intuitive feeling that popular culture also influences public perceptions and images of issues and topics coming from and concerning the world of science, research, technology and medicine, but so far we seem to know rather little about it. Roger Cooter and Stephen Pumfrey, for instance, wrote in 1994: “[S]urprisingly little has been written on science generally in popular culture, past or present. [...] From coffee houses to comic books and chemistry sets, from pulpits to pubs and picture palaces, from amateur clubs to advertising companies, from Science Parks to Jurassic Park, our ignorance both of the low drama and the high art of science’s diffusion and modes of popular production and reproduction is staggering.” [Cooter and Pumfrey, 1994, p. 237].

In the meantime and also previously some aspects of popular culture, such as particular journalistic mass media (e.g. elite newspapers such as *The New York Times*) or various museum exhibitions have received a lot of attention and have been researched rather intensively, also within the area of science communication research. However, science communication and other researchers have just begun

to investigate how science, research, technology and medicine are addressed and represented in popular entertainment media, such as popular TV series (e.g. crime and drama TV series such *CSI* or *Breaking Bad*, or TV sitcoms such as *The Big Bang Theory*) and comic books, popular music and music videos, or digital and even board and card games. However, today we also find jewellery, tattoos and T-Shirts with scientific imagery or jokes related to science, as means of presenting the wearers' attitude and identity. Many of these images, formats and channels surround us each day and they keep influencing us also during and after formal and informal science education and science communication initiatives are at work. Entertainment formats are also consumed happily and willingly by large audiences for recreational and other purposes, and the images and ideas they transport are often very powerful and persistent. In the words of Van Riper: "Popular culture probably does more than formal science education to shape most people's understanding of science and scientists. It is more pervasive, more eye-catching, and (with rare exceptions) more memorable." [Van Riper, 2003, p. 1104].

Research on the representation of science, research, technology and medicine on the Internet is also a rather new topic in science communication research, and many of the different social media and other communication channels on the web do also mix and blend and mash up genres and styles, formats, issues and topics, so that it is particularly difficult to distinguish informative science education, science communication, memes, humour and jokes, and entertainment and popular culture in general and to tell them apart (if this is possible at all).

The public and fictive image of scientists and researchers also seems to be changing in the recent years and decades. For instance, some researchers found that scientists are no longer seen and treated as mad, evil or dangerous, but that they are portrayed more emphatically these days. In the wake of the industrialization of bioscience and -technology researchers are no longer only portrayed as descendants of Victor Frankenstein, but also as people with entrepreneurial spirit, now cementing ties between science and industry [Meyer, Cserer and Schmidt, 2013].

In this context, however, it should also not be forgotten that several of the people creating popular entertainment stories have scientific credentials and research experience themselves, just think of *Michael Crichton*, who was postdoc at the Salk Institute for Biological Studies, or the professor of biochemistry *Isaac Asimov*, just to name two very well-known ones. In general we also know rather little about how popular culture is referred to and used in scientific work and science communication [Levin and De Filippo, 2014].

Distinguished scientific institutions in the United States and elsewhere, such as the *National Science Foundation* and the *National Academy of Sciences*, have recognized the need to initiate contact, exchange views, consult and influence the entertainment industry and how they tackle stories, issues and topics concerning science, research, medicine and technology. For the public legitimization of research, the public image of science and technology, as well as for the ongoing recruitment of young people for science and research careers, it is crucial to have an eye on how science, technology and research are portrayed in popular culture and entertainment media, and whether they are perceived as being "cool" or not [Kohlenberger, 2015].

The conspicuous lack of research on the interrelations between science, research and popular culture in general and the issues mentioned above motivated my colleague Hauke Riesch and me to organize the first *International Conference on Science and Research in Popular Culture #POPSCI20150*, which took place at Alpen-Adria-Universität in Klagenfurt, Austria, from September 17–18, 2015.¹ In the conference we sought to bring together not only science communication researchers with an interest in popular culture, but also other scholars, scientists and researchers, artists, media professionals and members from the general public. The aim of the conference was to collect various disciplinary and international perspectives on this so far relatively under-researched issue how interactions between science, research and popular culture take place and what effects they have. The conference in Klagenfurt included almost thirty presentations and contributions from speakers from thirteen different countries and perspectives on science and popular culture from various cultural traditions. During the organization of the conference it was of special interest that the presentations encompassed different approaches and addressed various formats, genres and issues of popular culture, science and research.

In this issue of JCOM we present four invited commentaries which are all based on presentations at the conference. The first one by Edward Bankes investigates the role of science and comedy in the American animated comedy *South Park*. Bankes thinks that examining the accuracy of science alone in products of popular culture is an inadequate strategy to better understand the purposes of science in entertainment formats. Instead he forces the question of why the science is there at all. *South Park* for instance, has no aim of communicating science; its presence offers a way to explore the values attributed to science within popular culture.

The second contribution by Oliver Marsh investigates the topic of humour and science in particular online settings. Both have received increasing attention amongst researchers and practitioners of science communication, and both raise numerous questions around the role of informality and enjoyment in the spread of information. In this contribution Marsh is particularly interested in the role that the technical infrastructure plays in popular participatory websites; his case study focusses on *reddit* and *Facebook* in particular, which display contrasting attitudes towards the use of humour.

The third contribution by Dirk Hommrich and Guido Isekenmeier focuses on visual communication and the rhetoric of evidence in popular science journals. In their contribution Hommrich and Isekenmeier center their attention on popular science stories about neuroscience and investigate how these stories are visually illustrated, apart from the usual neuroscientific brain scan images. Here they are particularly interested in the question which pictures might be especially appealing to the common sense in this context and ponder why the famous picture of the *Vitruvian Man* by *Leonardo da Vinci* appears so frequently in popular representations of neuroscientific research.

¹The conference programme, abstracts, call for papers and a selection of conference videos can all be found at: <https://sciencetechnologysociety.wordpress.com/>. See also the Twitter hashtag #POPSCI2015.

The final contribution by Anna Lydia Svalastog and Joachim Allgaier examines the role of science, research and emerging technologies in modern action movies. Their suggestion is to use genre analysis of folk narratives as a tool for understanding science and technology in action movies and outline how understanding action movies as modern fairy tales can benefit the study of science, research and technology in popular culture.

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