The grey area: blurring the frontiers between scientific research and science communication

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Abstract

We believe that one of the great challenges of science communication today is to be able to fully integrate the post-academic system of production of scientific knowledge. As a consequence, the academic and professional public science communication communities should move on from a position of defining its independence from the scientific community in order to exercise a necessary role of constructive criticism, to a situation where this independence is defined *de facto* by the recognition of a structural role of science communication within the system of organised knowledge production. In fact, post-academic science and the now mature culture of participatory governance (including citizen science approaches) allow to conceive experiences where the moment of knowledge production and the moment in which this knowledge is shared in a wider context coincide. That is, activities in which the interests and the needs of the researchers and the interests and the needs of the public, although they are not necessarily the same, can be satisfied *at the same time*. Starting form a series of case studies, including the French Researchers' Night "great participatory experiment" and the "Living lab of scientific culture" under development at Espace des Sciences Pierre-Gilles de Gennes of ESPCI Paristech - PSL, in Paris, and using a world-café like activity, a workshop explored the issue during the PCST 2016 conference. Many valuable examples where introduced, and an intense discussion was sparked on how to renovate a mature integration of public science communication within scientific research itself, without falling back in an old fashioned, service-oriented role of science communication.

Scientists are interested by what they don't know, but we invite them to meet the public for what they know.

Here is the typical situation: when we organise events to connect science with society, we invite scientists for what they know, and the publics for what they don't know.

This is intrinsically contradictory. In fact, scientists are mainly interested by what they don't know: the very nature of their profession is focused on the unknown or not understood. Why do we all forget this when the public enter the scene? Why do we privilege scientists as expert rather than as researchers? Despite the fact that the role of expert and the role of researcher are often (not always) assumed by the same professionals, they are two clearly different professions with very

different social roles. In public science engagement events, we tend to privilege the role of expert for the scientists invited to participate.

On the public side, it is clear even from a very superficial analysis of web 2.0 practices and of participatory governance practices that the publics express a true desire to share their view and knowledge, if given the opportunity and within contexts in which specific segments of the public involved can autonomously define the relevance of their participation.

One of the main, wonderful features of the scientific method is the fact that sharing of knowledge and knowledge production are deeply entangled. Public science communication activities often seem to neglect the opportunity of mimicking this aspect. A scientific conference is at the same time a moment of knowledge sharing and knowledge production for all the parties involved. A science engagement event is on the contrary in most cases characterized by a clear distinction of the different roles.

The issue here is not weather we build a one-way, two way, or multi-way communication. Neither to ensure that a (often ill-defined) "dialogue" occurs, nor to ensure that the (often ill-defined) scientific method or the history of science are present. These are of course interesting elements, but not sufficient. The issue concern the very reasons why scientists and the public participate in common events. Too often, we do not offer a setting in which scientists are able to find a real professional interest (that is, useful for scientific research). Neither we create settings in which we facilitate the publics in their process of hacking scientific knowledge (in Yurij Castelfranchi's terminology) to serve autonomously defined and often unpredictable functions.

The deficit model: a sterile concept?

Past literature in science communication or science in society tended to frame this issue in terms of the "deficit model". I am very sceptical about the usefulness of such a concept. The main reason for scepticism is the intrinsically derogatory nature of the term: if one would like to defend the deficit model, s•he would never use the term "deficit". The use of such self-fulfilling terminology is clearly a way to satisfy academic or professional needs for defining a standpoint, while preventing deeper understanding of the real issues. In fact, in many science communication activities what we (and only we, the PCST community - another great weakness of the concept) define as deficit model describe in fact a very clear and non-ambiguous contract fully understood, chosen and assumed by all the parties involved, and in particular by the public.

The deficit model rhetoric also hides a sort of arrogance of our PCST community toward the publics, which are often described as passive, unable to fully choose which type of interactions is more relevant for them. On the contrary, the publics are often fully aware, although implicitly, of the most relevant type of interaction. And they often have a strong desire for deficit-oriented forms of communication, not because of their ignorance of the issue, but on the contrary because they understand very well the interest of it. The "deficit contract" is often much less ambiguous than the "dialogue contract", that appear often dominated by interests of the "third party" (the PCST academic community), and ill-defined for the actual main actors, the scientists and the publics.

The reasons of this is mostly related to a need, mainly emerged in the 1990s and 2000s, and anticipated by some pioneers of the PCST network, to define science communication as a fully independent field of studies and practices rather than a conveyor belt at the service of the scientific community. This has been an essential step, but we now need to move forward, and be careful to

use content rich concepts rather than repeating empty slogans just to protect the frontiers of a field (the so called academic or professional territorial pissing).

While allowing the publics to chose one-way communication whenever they wish, we therefore need to understand how to move forward, and define when and why other forms of communication are indeed useful. And more precisely, when communication truly satisfies the autonomous needs of the players.

It is important to note here that in this reasoning the public is best described (as current communication and economic thinking tend to do) as a collection of micro-communities rather than as a category in itself, each one vested with their own articulated agendas in which professional, cultural, value, selfish and social elements overlap. In this sense, it is much more appropriate to talk about segments of the public as “stakeholders” rather than as “target groups”.

The grey area

The last decade has seen the emergence of new practices and experiences in which knowledge production and knowledge sharing (in simpler terms, research and communication) are not easy to distinguish, and occur *at the same time* and not as separate step of a process. We can call these experiences the “grey area”: an area in which we can satisfy at the same time and within the same activity the autonomous interests of researchers and the interests of other stakeholders, among which the publics; an area in which productive collisions between the scientists and the publics are generated; an area in which scientists are invited also for what they don’t know, thus as researchers and not only as experts, interested in meeting other segments of the public in order to improve the research thinking; and segments of the public are invited also for what they know and they whish to offer to the knowledge society.

A series of initial examples were proposed in a PCST2016 conference workshop. The participants sparked a very deep and insightful reflection, adding many other examples and expanding the concept. As these initial discussions are difficult to harvest, I will report here the starting point and quote some of the main feedbacks, hoping that, as expressed by many participants, the issue will be further explored in future workshops.

PJ Harvey, Starbuck, the Brazilian barbershops and the Tesla Model 3

Before getting in the science engagement world, I would like to point out a tendency observed in many very different domains, in which it is possible to observe blurred frontiers similar to the ones described above for the “grey area”.

The last album of the rock author PJ Harvey was entirely recorded in the presence of the public. It was not a live album, but a studio work in which the public was invited *before* the completion of the recording, and not only to buy the album when finished. Was it a series of concerts? An art performance? A recording session? A marketing idea? A co-production experience? Most probably, she was blurring the frontiers between all of the above.

Starbuck can be used as the commercial – someone could say degenerate - exemplar of the global tendency of “third places”, or tiers lieu, blurring the frontiers between working spaces, leisure spaces and private spaces. While they present themselves as selling coffee and biscuits, they

actually mainly sell meeting spaces, wi-fi connections, a working table and chair, etc. This is of course not new. Another historical example of third places are the barber shops in Brazil and many other countries, where man meet to administer the *polis*, blurring the frontier between haircutting and city governance.

L'économie de la functionalité, a most probably long lasting global trend, shows that the frontiers between products and services are also blurred (a simple visit to any European railway company easily demonstrate it). And coupled with the many forms of crowd funding or early booking practices increase the complex overlapping even further. An example are the Elon Musk's Tesla Model 3 electric cars: pre-booked in nearly half-million exemplars even before anyone has seen the prototype, these cars are at the same time a transport system, a consumer oriented climate-preserving opportunity, an energy storage system for intermittent renewable energy sources, and of course a status symbol. Its success should thus be ascribed more to these overlaps than to its technical or marketing features.

Obviously, the contribution of the open software and open science movements, the maker movements, and of design thinking should not be forgotten, as they allowed, and the still are allowing, a cultural opening of our community's minds.

Some "grey area" examples

When moving to the science in society field, the "citizen science" wave is of course the first example of "grey area" that can come to mind. I do not enter here in the details of the very complex citizen science wave. Its great opportunities and many contradictions can be easily explored for example through the two special issues recently published in Jcom (http://jcom.sissa.it/archive/15/01 and http://jcom.sissa.it/archive/15/03), through the European Citizen Science Association (http://ecsa.citizen-science.net/), through the International Science Shop Network (http://www.livingknowledge.org/) or through the many projects and website sparking all over the globe. However, citizen science should be considered as a research oriented initiative, in which the interests and the knowledge of citizens are a driving force for research in terms of agenda setting and knowledge inputs. The blurring of the frontiers between communication and research that we are analysing here is not a core element and, in some case, could even be negative for citizen science (producing a sort of a participatory variation of greenwashing).

It is preferable here to point to examples in which the convergence between communication and research interests is more clear and unambiguous. What we discussed during the workshop are in fact examples characterized by the fact that research and communication occur *at the same time* in the *same event*, rather than being two separate phases of a process.

The Science Gallery Dublin's "lab in the Gallery" concept is an excellent example (https://dublin.sciencegallery.com/archive). Exhibitions such as "Memory lab", "Happy" or "Fat lab", were fully conceived as public oriented exhibition that become useful to researchers, or conversely research setting fully accessible by the public.

A similar experience is the "Great participatory experiment" launched in 2015 within the French European Researchers Night consortium, and soon to be renewed in 2017. The GEP (*Grande Experience Participative*) consist in a call for proposal funding a scientific experiment that benefit

form the participation of 5000+ persons during one single night (European Researchers' night) simultaneously in 11 French cities. The GEP stands on 2 underlining ideas. First of all, create a single event that is at the same time a research and a communication activity, in which the interests of researchers and of the public converge. In fact, the experiment was selected by an independent jury according to both its scientific solidity and its communication appeal (the 2015 experiment was designed and performed by a team of researchers in experimental economy led by Angela Sutan, LESSAC, Groupe ESC Dijon-Bourgogne). As a side, virtuous effect, the GEP is an example of a research activity funded by communication money, rather than the opposite! The second idea is the fact of staging the whole parabola of research in public view: rather than focusing on the end-results, the GEP follows and report to the public through a blog the whole history of a research activity from the call for funding, to the protocol design, the execution of the experiment, the analysis of data down to the presentation to conferences and publications. The 5000 persons that participated in the 2015 experiment could thus follow step by step where their participation comes from and where it leads.

Another very interesting grey zone approach is the application of the "Living lab" concept to cultural and science engagement venues such as science centres. Too complex to be reported here in full details, the issue has been analysed in details within the French project "Inmediats" (http://inmediats.fr/) and valuable references can be found in the resources collected by this project. Living labs are wikidefined as "an open innovation ecosystem, often operating in a territorial context, integrating research and innovation processes within a public-private-people partnership ». They are entering science engagement activities as opportunities for researchers, innovators, and segments of the public to explore the aspects of research and innovation that most benefit from perturbations arising from the involvement of different stakeholders and knowledge. Although still in its experimental phases, the application of living lab approach to scientific culture is gaining momentum, as it is shown in several French examples in Caen, Grenoble, Bordeaux, Toulouse, Paris and most recently at Espace des Sciences Pierre-Gilles de Gennes – ESPCI PSL in Paris. For the purpose of this paper, living lab approaches appear as the most advanced example of contextual, balanced and contemporary satisfaction of the needs of knowledge production and knowledge sharing in a public context.

Reflections from the « grey area » workshop

Far from being exhaustive, the type of activities presented above, describing grey area approaches in exhibitions, science communication events and open innovation processes, appear to gain a lot of interests among innovators in science communication, as pointed out in the discussions during the PCST 2016 workshop.

A controlled role of communication in citizen science approaches (as described above) has been pointed out as a very valuable opportunity. In fact, citizen science often embed a shift from observation to participation in the eye of the public, a value of citizen contribution in the eye of researchers, and an upstreaming of citizen and scientists participation in issues of wider social interest, that clearly point to the grey area.

Hackatons focusing on specific research and innovation questions, that are becoming increasingly popular in the USA and are entering the European landscape, are also to be observed closely. They can be thought as large scale, one-shot version of living labs, or conversely, as open innovation oriented version of science festivals.

A discussion around these practices pointed to the need to develop a purposely-designed evaluation scheme to understand if and how much outcomes in public engagement (such as

learning, shifts in attitudes, desire of engagement, etc) and in research and innovation (such as better framed questions, market success or RRI issues) reinforce each other.

Also, a new form of documentation appear to be needed, different from the research reports or the classical institutional science engagement reports, a documentation probably inspired by the open software, living labs, and makers spaces practices.

Several remarks from the participants pointed to the importance of what we learned in recent years from the studies on indigenous knowledge. In particular, the capacity not to bend the knowledge brought in by the public to the pre-defined need of research, but to accept the fact that the public "knows what it knows".

Conclusions

Public engagement activities in which knowledge production and sharing of knowledge occur at the same time can be an interesting way to overcome the nowadays sterile debate around the so called deficit model and the ambiguities of the so called dialogue model. Several examples are now available, and an academic analysis of this trend would be very useful. In political terms, it is important to monitor these activities so that they do not become just fashionable trends, but occasions to respect the autonomous definition of the relevance of each piece of knowledge by all involved actors – and in particular disempowered groups. The final objective remains the construction of a chosen, and not suffered, knowledge society.

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