WG Nr. 3 Workshop

– Citizen Science and Open Science – Synergies and Instruments

Date and Place: 1.3.2018, at the COST Association Office, Brussels

Organisers: The workshop was organised jointly by the COST Action CA 15212 and the project DITOs, Doing it together science

Introduction:

Citizen Science and Open Science share some targets with regard to openness and transparency, but employ different communities, have different histories and divergent priorities. In this workshop we would like to explore where the key synergies between Citizen Science and Open Science are, and what potential barriers have to be overcome. In addition we would like to reflect which instruments of H2020 have been most helpful to support the idea to use citizen science for a closer link between science and society and support the „Three O“ strategy (Open Innovation, Open Science, Open to the World) of the EU.
In this workshop, different communities are invited, especially members of the Open Science Working Groups of the European Citizen Science Association (ECSA) and the advisory board of the EC, OSPP (Open Science Policy Platform). The workshop will take place the day before the 5th meeting of the OSPP, to foster the dialogue about citizen science as a part of the European Open Science Agenda.

Talks
In order to set the scene, impulses were given from several persons:

- Welcome Messages and setting the scene: Dr. Katrin Vohland, Museum für Naturkunde Berlin & COST Action Chair
- Opening of scientific process: Jun.-Prof. Dr. Sascha Dickel, Johannes Gutenberg-Universität Mainz
- Options of Citizen Science internationally: Dr. Anne Bowser, Wilson Center
- The ECSA Open Science Policy Brief: Claudia Göbel, DITOs & Kyle Copas, ECSA
- Recommendations from the ECSA Advisory Board, Sven Schade
- Reflections on Open Maps: Maurizio Napolitano, OpenStreetMap FBK, Trento)

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The round table was the key part of the workshop:

Summary

The aim of this workshop session at the event was to unpack and employ the DITOs Policy brief “Citizen Science and Open Science: Synergies and Future Areas of Work”. Claudia Göbel started with a presentation of the process of in which the policy brief was created within the framework of the H2020-Project Doing-it-Together science (DITOs). The ECSA Working Group on Citizen Science and Open Science was involved and made the policy brief their first joint task. Between January 2017 and February 2018 regular online meetings and a series of workshops were organized to coordinate the writing of the brief and collect case studies – including a writing workshop at GBIF in Copenhagen and the presentation of a first draft to members of the European Commission at the Policy Round Table in Brussels. Kyle Copas highlighted future challenges for better linking Citizen Science and Open Science identified within the policy brief. As an example for how to make the recommendations from the policy brief more concrete, a short case study on the GBIF data re-licensing exercise was given.

World Café: Unpacking & employing the policy brief

The central part of the workshop session was a world café offering an interactive way for participants to engage with the content of the policy brief and contributing from their areas of expertise. The aim was to continue working on the future challenges at the intersection of Citizen Science and Open Science that were identified in the policy brief and make them more concrete by identifying barriers in each areas as well as potential solutions. Discussions were held in two rounds at five tables with two hosts each:

1) Openness – Anne Bowser & Kyle Copas
2) Inclusion and empowerment – Michael Sogaard & Maurizio Napolitano
3) Education and training – Aleksandra Berditchevskaia & Dick Kasperowski
4) Infrastructures and reward systems – Sven Schade
5) Further research – Sascha Dickel

Summary of results

At the end of the workshop, Sven Schade, member of the ECSA Advisory Board, moderated the summary exercise. As a follow-up activity on the policy brief, the objective is to include the most pertinent points from the world café discussions into a set of recommendations for the advancement of Citizen Science that the ECSA Advisory Board is preparing. The results from the world café discussions per table:

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(1) Openness

Key challenges identified in the Policy Brief

- Data management and stewardship for CS
- FAIR CS data and examples
- Different types of contributions and outputs
- Legal uncertainties, IP, licensing

Barriers

- Culture of „my data“ related to current reward structures (linked to “my tenure”)
- Privacy and protection of personal data can be a local hurdle, e.g. for individual health data
- Interoperability is hard to generate between different scientific disciplines
- Financial and technical limitations, e.g. if there is a lack of expertise or money for doing good data management and when it is not known where to put the data

Potential solutions

- Encourage re-use as metric for RRI
- Collect case studies showing CS data as open, interoperable, FAIR data
- Create templates for data management / data management plan
- Create guidelines/models for how to tackle licensing/IP without needing to consult a lawyer
- Open data pilot must include possibilities to opt out

(2) Inclusion and empowerment

Key challenges identified in the Policy Brief

- Involvement in all stages of research
- More co-creation
- Equitable and sustainable science
- North-south and east-west dialogues
- Stakeholder involvement

Barriers

- Who raises the research questions – scientists or citizens and civil society organisations?
- CS data can get biased because weak / vulnerable communities do not participate.
- If science is co-created, who is then acknowledged - scientists or citizen scientists?
- There are divides regarding resources available, political will, freedom in civil society, etc. that are also relevant for the spread of CS: east-west, south-north, rural-urban
- Open science needs infrastructures that are not available/accessible for everybody.
- Can scientists and citizens understand each other, do they speak the same “languages”?
- Can scientists see the value of working with citizens, including time, value and benefits?
- In some scientific fields scientists will hesitate more to have citizens participate/co-create.

Potential solutions

- Work with communities that contribute to Commons, e.g. Wikipedia & Open Street Map
- Open universities to civil society, in demand-oriented ways (members of civil society approach) as well as supply-oriented ways (actively approaching the most vulnerable)
- Work with existing civil society structures in communities, not least when working with vulnerable/weak communities

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(3) Education and training

Key challenges identified in the Policy Brief

- Include both CS and OS in research education & training
- Education and communication along CS initiatives
- Build CS and OS into teacher training

Key challenges highlighted by workshop participants

- Skepticism from academics due to perception that while scientists are educated to do "good" and high quality science, lay people do not have the same qualifications.
- CS is seen as "bad for business", particularly OS, because closed data and other assets are important for researchers that work in partnership with business. This is especially true for commissioned research.
- Lack of resources for CS training for academics as CS is not a priority focus.
- CS is seen as an innovative and unconventional approach. Many academic institutions adhere to traditional models and teaching curricula that emphasise theory. There are few opportunities to update curricula or to think about real world applications and transferable skills. Also, students do not understand the added value of "volunteering" to do CS.
- There was concern about **who** could deliver CS education. Would there bes a certain level of knowledge required for entry?
- Culture-specific challenges – the Idea of "volunteering" is not well developed in Eastern Europe and so time must be invested in creating the right environment for becoming open to the idea of CS.

Potential solutions and opportunities

- Introducing CS and learning on it in university curricula
- Very important focus group: new research methods in PhD level training
- What do you need to know to get involved in a CS project?
- Having certain skills of knowledge should not be a barrier to participate in CS projects in general (it was written " teaching and learning should not be a barrier to entry")
- Need for schemes/certificates to foster transferability of skills
- Producing open educational resources
- Democratizing the tools used: think about mobile phones rather than web.

Citizen Science & Open Science: Synergies & Future Areas of Work

Executive Summary

Transformations of Research

OPPORTUNITIES

(4) Infrastructures and reward systems

Key challenges identified in the Policy Brief

- Integration of CS and OS within research infrastructures & providing new ones
- Open up research infrastructures for CStists
- Mediation between institutions and individuals
- Adapt evaluation and incentive structures

As the discussions on infrastructures are already well advanced within the community, the participants to this table decided to focus on incentives as a topic. In essence those can be created by law, through monitory gain as well as ranking systems. Especially the latter was identified as an area that requires dedicated action. This is because - although already heavily criticized - it would be illusionary to assume that ranking systems will ever disappear. It appears more realistic to push for changes in the values and the criteria assigned to them. The discussion furthermore focused on the kind of rewards/incentives that support contributions to science (by professional scientists or anybody else). The participants would like to see a dedicated follow-up workshop on this topic.

Barriers

- Traditional reward systems are in strong institutional hands, but they don't work. The criteria that can currently be automatically captured follow an outdated scientific model and miss many important elements (especially in the area of Responsible Research and Innovation and Citizen Science).
- Although local initiatives provide innovations and alternative to these systems - in form of different 'valorization' of grants, start-up companies, public presentations, etc. - they do not reach any recognition at higher (national, European or international) levels. Due to the missing transferability or credits/rewards from one local system to any other, career paths can currently not be developed on the basis of modernized ranking systems.
- Data on CS contributions and OS activities is lacking so far. Thereby we are currently not able to trace and quantify how much individuals and institutions follow related practices.
- Overall perception/resignation that this is a very bad idea that will never work.
- The focus on rewards (as compared to incentives) might just be the wrong starting point.

Potential solutions

- Just several years ago it was hard to imagine that citations of scientific articles could be traced all over the globe, i.e. this is more than only an idealistic dream.
- Without any money, we can start implementing such changes in our own institutions.
- Championing alternatives to traditional reward systems – along with new rules for project participation, criteria for project selection, and giving visibility to specific projects.
- Making the required data available as Open Access - starting by opening up that data that is already available (e.g. about participation in public/social events).
- Developing CS indicators on top of this data, and pushing them bottom-up into future ranking systems (thereby also creating a market for those who do the rankings).
- Exchanging experiences, and designing an interoperable and shared approach within existing communities and networks.
- Leading the way to a new European ranking system that acknowledges CS and OS contributions.
- Sharing and promoting this new European approach globally.

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(5) Further research

Key challenges identified in the Policy Brief

- Openness & participation across different disciplines
- Exchange between researchers & practitioners
- Adverse effects
- Contributions to commons, SDGs & societal challenges
- Empowerment

Research is needed to refine and develop analytical frameworks to better understand CS, OS and the overlaps. The following questions are particularly interesting:

- What are motivations of researchers for doing CS & OS?
- What are conditions and implications of a normalisation of CS, i.e. turning CS into a common way of doing science? Is there a trade-off between inclusion (creating possibilities for involvement of potentially everybody) and extension (creating robust science)?
- What are costs of openness and collaboration?
- Does CS have an artificial intelligence problem, i.e. will the practice become obsolete as soon as algorithms are trained to do pattern recognition better than humans, and what to do about it?

Drafting: Claudia Göbel, Aleks Berditchevskaia,Sven Schade, Maike Weißpflug, Katrin Vohland; September 2018

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