Brocher Workshop 1 & 2 October 2015: Ethical Aspects of Participant-centred research initiatives

Organized by Heidi Howard, Effy Vayena, Pascal Borry

Start on 1 October 2015 at 9h

End on 2 October 2015 at 16h

Location of workshop: Brocher Foundation, (http://www.brocher.ch/en/contact/)

Background

While medical research has been characterized by a top-down approach where researchers attempt to recruit the public, including patients, to participate in studies that are designed and implemented with very little input from this very public, biomedical research is now being confronted with a new development regarding public involvement and initiative in research. Increasingly, a type of "bottom-up" or 'user-centric' approach is being developed. (Terry and Terry 2011) This approach, which we will refer to as "participant-centred" has been defined as 'tools, programs and projects that empower participants to engage in the research process' using interactive information technology.(Kaye et al. 2012) Key features of participant-centric initiatives include: a) enabling the recruitment of research participants; b) promoting interactions or communications between researchers and participants; c) providing participants with social networking possibilities; d) providing participants with certain services (e.g. return of research results); e) enabling participants to manage their preferences for personal datasharing; f) allowing participants to help drive the research agenda; g) allowing participants to provide and to have some control over their samples and data.

There are various examples of such initiatives. Private Access is a private company that has developed a consumer-centric technology platform that enables patients to share their personal medical information so that they can be approached to become involved in research projects. PatientsLikeMe is a private company that enables individuals to share health information on their conditions and enables participation in research projects.

Genomic information is also an integral part of several of these initiatives. Genomera connects people with similar health problems and allows individuals to share both genomic and phenotypic information and opt into clinical trials. 23andMe is a direct-to-consumer genetic testing company that provides consumers the opportunity to consent "to the use of their data for research." (Do et al. 2011) Consumers are "given the option of contributing phenotype data via a series of web-based surveys. 23andMe states on its website that letting consumers participate in research in this way "can produce revolutionary findings that will benefit us all."(23andme 2012) An important sign of how there may be a conceptual and practical shift here is that publications resulting from these research activities emphasize that they are a "viable alternative to traditional methods."(Eriksson et al. 2010)

This growing trend of "crowdsourcing" (ie: the outsourcing of tasks) in the field of genetic research may lead to various advantages. (Harris et al. 2012;Janssens and Kraft 2012;Kaye et al. 2012;Prainsack 2011;Tutton and Prainsack 2011) 1) It could facilitate participant recruitment in research projects. 2) By continuously informing and making participants to feel part of a research project it could increase the willingness of participants to continue to be involved in a research project. 3) It could make it easier to collect consent and ensure respect for data privacy legislation. 4) It could facilitate recontacting participants with new questions for participation in research projects and by consequence removing the need for broad consent and/or anonymizing data. 5) It could contribute to a faster pace of research and lowering the cost of doing research.

Along with the potential benefits, there are also important ethical challenges linked to the development of patient-centred genomic research initiatives: 1) Although not specific to patient-centred inititiaves, privacy and confidentiality of genomic data, especially with the advent of whole genome and whole exome sequencing is an important concern for all genomic research. (Anon 2013) 2) Specifically for patient-centred research, critiques have pointed to the fact that companies may not have been clear and/or completely transparent with participants. For instance, patenting a discovery without having made it clear to participants that this would occur. (Sterckx et al. 2012) 3) Ethical debates also include the

type of research results that are being returned. While research participants might often receive genomic information about themselves in return for participation, in reality the predictive ability of these genetic risk factors is usually limited. As a consequence, questions have been raised about the potential negative consequences of disclosing this type of information and the potential downstream impact on the healthcare system. 4) It is ethically important to know what type of information participants received before participation, and to what they agreed to in their informed consent. Previous research showed that transparency in patient-centred genomic research might often be a problematic issue.(Howard et al. 2010)

Specific goals

The **research basis for this symposium** is that tensions and possible discrepancies exist between participant-centred research initiatives and ethical principles outlined for traditional research on human genomic data.

The **general objective** of the proposed meeting is to explore different types of participant-centred research models and their potential benefits and drawbacks, including ethical aspects, as compared to the more traditional research paradigm. Through the study and discussion of the ethical problems related to participant-centred research models, we aim to begin to map out the novel aspects of this research model and begin to elucidate the salient issues with respect to consent and return of results. Ultimately we aim to write an academic research article covering these themes which will be published in an international peer-reviewed journal.

During this symposium we will address **specific objectives:**

1) To identify various participant-centred research initiatives in genomics (PCRI) and to map and analyze their different features

2) To explore the traditional research ethics principle of consent and compare this in the context of patient-centred initiatives in genomics.

3) To explore traditional research ethics principle as relating to the return of results and compare this in the context of patient-centred initiatives in genomics.

The symposium will be divided into 4 parts

Session 1: Identification and mapping of participant-centred genomic research initiatives

In order to inform the academic and policy debates surrounding PCRI, it is crucial to continuously study and monitor existing initiatives in which participants are recruited. This session aims to answer, among others, the following questions: Which groups, companies, institutes or organizations are setting up PCRI ? How exactly are "participants" or the public involved in driving the research? What kind of data collection is being done? What kind of research is being done? What type of genomic information is being processed and returned to the participants? What kind of counseling or professional embedding is being provided?

With participation of **Greg Biggers** (Genomera), **Sharon Terry** (Genetic Alliance), **Sohini Chowdhury** (Michael J. Fox Foundation), **Caroline Kant** (EspeRare Foundation)

Session 2: Research ethics in participant-centred genomic research initiatives: recruitment strategied, informed consent , oversight mechanisms

The ***second and third sessions*** aim to analyze to what extent patient driven genomic research initiatives comply with traditional research ethics principles. Public institutes, organizations or private companies using consumer samples/data to conduct research are, in essence, creating databases of information that can be mined and studied like those created by biobanks. Some authors have underlined that this type of activity is creating a "participatory turn" in biomedical research and that the increased participation by the general public in shaping research and identifying research priorities should be applauded. However, this research model also poses various problems. Some participant-centered initiatives may take place beyond institutional boundaries and are likely to fall through the cracks of standard research oversight schemes. (Vayena 2013) Questions have been raised regarding what constitutes appropriate oversight in such cases. Guidelines and position papers on ethically appropriate research in population-biobank studies will be compared to

the practices of population-based genomic research initiatives. Particular attention will be provided to two major issues in population-based biobank research, namely recruitment and informed consent and return of results.

Session 2: The success of population-based biobank studies, as well as participant-centred genomic research initiatives, is intrinsically dependent on the effective recruitment of research participants who are willing to donate biological materials, as well as phenotypic information. A recruitment process has been described as a "dialogue between the investigator and the potential participant" in which each party is expected to inform the other about their own goals and expectations. (Patel et al. 2003) The informed consent (IC) is traditionally considered as the central tool to protect personal rights in the course of the study. In line with ethical requirements on informed consent, informed consent refers to a process in which individuals are informed about the purposes of the research, procedures to be followed, potential risks or discomforts, potential benefits, confidentiality and privacy issues, … It also includes an understanding that participation is voluntary and that it may be discontinued at any time. Considering the experienced difficulties of recruiting research participants in an ethically appropriate way for population-based biobanks (Nobile et al. 2012), it is of utmost importance to study how recruitment and informed consent procedures are being realized in participant-centred genomic research initiatives. Based on the results of first session, we will analyze and compare recruitment materials and informed consent procedures of PCRI to guidelines with regard to recruitment and informed consent for population biobanks.

With participation of **Deborah Macalzoni** (University of Uppsala, Sweden), **Misha Angrist*** (Duke University, USA), **Sigrid Sterckx** (Ghent University, Belgium), **Gaia Barazzetti** (University of Lausanne, Switserland)

Session 3: Research ethics in participant-centred genomic research initiatives: return of results

The increasing amount of information that will be generated through the use of genomic technologies leads to the question: what kind of information should be returned to the individuals that undergo this type of testing? Current opinions range from returning no incidental medical information to returning large amounts of information (including personal and familial genetic risk factors for disease), to returning all genetic data so that the sequencing data remains available in the future. This raises issues with regard to the concepts of medical responsibilities, best interests, right to privacy, and autonomous decision-making. It also leads to debates on informed consent and counseling. Having all these ethical controversies in mind, it is necessary to investigate the responsible return of results to individuals and strike a balance between rights of individuals on the one hand and interests of research and society on the other hand. While traditional genomic research settings are usually very resistant to return genomic results if they are not of immediate health benefit to the individual participants of a research project, PCRI usually take a much more open position and emphasize the "feeding" of results back to participants. This is a fundamental departure from genomic research guidelines and as such requires further attention. Based on the work performed in session 1, we will analyze and compare the type of results participant-centred genomic research initiatives feed back to research participants and compare those practices to return of results guidelines for population biobanks.

With participation of **Anna Middleton** (Welcome Trust Sanger Institute), **Leigh Jackson** (Plymouth University, U.K.), **Regine Kollek** (University of Hamburg, Germany), **Martina Cornel** (VU University Medical Center Amsterdam, The Netherlands),

Session 4: Next steps discussion and debate

In this session the focus will be on an interactive group discussion regarding: 1) the article to be published, and 2) the important ethical questions that still necessitate answers and the steps to find these answers.

Bibliographical references

2013. Genetic privacy. *Nature*, 493, (7433) 451.

23andme 2012. *23andWe Research* https://www.23andme.com/research Accessed 31 January 2013.

Borry, P., Howard, H.C., Sénécal, K., & Avard, D. 2010. Health-related direct-to-consumer genetic testing: a review of companies' policies with regard to genetic testing in minors. *Fam.Cancer*, 9, (1) 51-59.

Do, C.B., Tung, J.Y., Dorfman, E., Kiefer, A.K., Drabant, E.M., Francke, U., Mountain, J.L., Goldman, S.M., Tanner, C.M., Langston, J.W., Wojcicki, A., & Eriksson, N. 2011. Web-based genome-wide association study identifies two novel loci and a substantial genetic component for Parkinson's disease. *PLoS Genet*, 7, (6) e1002141.

Eriksson, N., Macpherson, J.M., Tung, J.Y., Hon, L.S., Naughton, B., Saxonov, S., Avey, L., Wojcicki, A., Pe'er, I., & Mountain, J. 2010. Web-based, participant-driven studies yield novel genetic associations for common traits. *PLoS Genet.*, 6, (6) e1000993.

Goddard, K.A., Robitaille, J., Dowling, N.F., Parrado, A.R., Fishman, J., Bradley, L.A., Moore, C.A., & Khoury, M.J. 2009. Health-related direct-to-consumer genetic tests: a public health assessment and analysis of practices related to Internet-based tests for risk of thrombosis. *Public Health Genomics*, 12, (2) 92-104.

Harris, A., Wyatt, S., & Kelly, S.E. 2012. The gift of spit (and the obligation to return it). *Information, Communication & Society*.

Howard, H.C., Knoppers, B.M., & Borry, P. 2010. Blurring lines. The research activities of direct-to-consumer genetic testing companies raise questions about consumers as research subjects. *EMBO Rep.*, 11, (8) 579-582.

Janssens, A.C.J.W. & Kraft, P. 2012. Research Conducted Using Data Obtained through Online Communities: Ethical Implications of Methodological Limitations. *PLoS medicine*, 9, (10) e1001328.

Kaye, J., Curren, L., Anderson, N., Edwards, K., Fullerton, S.M., Kanellopoulou, N., Lund, D., MacArthur, D.G., Mascalzoni, D., Shepherd, J., Taylor, P.L., Terry, S.F., & Winter, S.F. 2012. From patients to partners: participant-centric initiatives in biomedical research. *Nat Rev.Genet*, 13, (5) 371-376.

Manson, N.C. & O'Neill, O. 2007. *Rethinking informed consent in bioethics* Cambridge University Press.

Nobile, H., Vermeulen, E., Thys, K., Bergmann, M.M., & Borry, P. 2012. Why do participants enroll in population biobank studies? A systematic literature review. *Expert Rev Molecular Diagnostics*, 13, (1) 35-47.

Patel, M.X., Doku, V., & Tennakoon, L. 2003. Challenges in recruitment of research participants. *Advances in Psychiatric Treatment*, 9, (3) 229-238.

Prainsack, B. 2011. Voting with their mice: personal genome testing and the "participatory turn" in disease research. *Account.Res.*, 18, (3) 132-147.

Sterckx, S., Cockbain, J., Howard, H., Huys, I., & Borry, P. 2012. "Trust is not something you can reclaim easily": patenting in the field of direct-to-consumer genetic testing. *Genet.Med.*, Epub ahead of print.

Terry, S.F. & Terry, P.F. 2011. Power to the people: participant ownership of clinical trial data. *Sci.Transl.Med.*, 3, (69) 69cm3.

Tutton, R. & Prainsack, B. 2011. Enterprising or altruistic selves? Making up research subjects in genetics research. *Sociology of health & illness*, 33, (7) 1081-1095.

Vayena E, Tasioulas J. Adapting standards: ethical oversight of participant-led health research.PLoS Med. 2013;10(3):e1001402. doi: 10.1371/journal.pmed.1001402

Vayena E, Tasioulas J. The ethics of participant-led biomedical research. Nat Biotechnol. 2013 Sep;31(9):786-7. doi: 10.1038/nbt.2692.