Progress report of SP12 for M12 SGA2 (D12.5.1 – SGA2)

Ethics & Society in the Human Brain Project: Key results from April 2018 to March 2019

Figure 1: Ethics and Society in the Human Brain Project (HBP)

We pursue a responsible research and innovation agenda and practice in the HBP along four main lines of enquiry and action.

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Description in GA:	Progress report of SP12 for M12 SGA2
Abstract:	The Ethics and Society group of the Human Brain project (HBP) brings together internationally recognised scholars and practitioners from the humanities and social science. Of all the Worlds Brain Projects, the Human Brain Project stands out for its dedication to Responsible Research and Innovation (RRI). The present report details the progress booked between April 2018 and March 2019.
Keywords:	Human Brain project, Ethics, Neuroethics, philosophy, Foresight, Engagement, compliance, data management
Target Users/Readers:	Scientists, Companies and other potential users of HBP results.

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History of Changes made to this Deliverable (post Submission)

Date	Change Requested / Change Made / Other Action
3 May 2019	Deliverable submitted to EC
22 Jul 2019	Resubmission with specified changes requested in Review Report Main changes requested: • Change 1 (KR12.1 - a revision of documented output 1 and output 2 is needed (see comments). The related report is confidential and needs to become open so that others may benefit from its content. • Change 2 (KR12.3 is unclear, since the related MS12.3.1 contains only the description of the preparation of the event with no analysis of its result. No conclusion on the results, either of the AI 360 Copenhagen event or the webinar on Open Research Agenda Setting, but only outlines the assumptions and objectives of those events. A revision of output 1 and output 2 is needed.) • Change 3 (KR12.4 the blog actual (preliminary) impact should already be described and discussed.)
1 October 2019	Revised draft sent by SP/CDP to PCO. Main changes made, with indication where each change was made: • Change 1: Output 1 and 2 have been revised and a clarification has been added (Section 3.1.2) • Change 2: Clarification has been added to the description of Output 1, in Section 5.1.2 Output 1 and Section 5.1.3 Output 2 • Change 3: Clarification on blog impact has been added in Section 6.2.1 Actual Use of Output(s)
2 October 2019	Revised version resubmitted to EC by PCO via SyGMa

1. Overview

The Ethics and Society group of the Human Brain project (HBP) brings together internationally recognised scholars and practitioners from the humanities and social science. Of all the Brain Projects in the world, the Human Brain Project stands out for its dedication to Responsible Research and Innovation (RRI)[1]. The present Deliverable details the progress made between April 2018 and March 2019. Ethics and Society is breaking new ground in exploring questions and developing new approaches, e.g.: the Foresight Lab's study on the role of brain signatures and their clinical, personal, social and ethical implications; the Neuroethics and Philosophy group's theory of consciousness and collaboration with the International Brain Initiative on central neuroethics questions to ask; the Engagement group's test of digitally facilitated citizen dialogues in people's own homes; and the Ethics Support group's structure for data governance and educational, dissemination and outreach activities.

[1] The International Brain Initiative (IBI) is an alliance of some of the major brain research projects from Europe, Japan, Korea, the United States, China and Australia. IBI was established in recognition of the fact that no single project will be able to tackle the challenge to better understand the brain by itself. IBI recognises that neuroethics is a key concern and is also doing work in the field of neuroethics. However, the Ethics and Society group of the Human Brain project is dealing with neuroethical issues in a broader sense, e.g. by facilitating stakeholder engagement and citizen dialogues which is unique among the brain projects.

2. Introduction

What would happen if we would better understand how the human brain functions? The Human Brain Project aims to put in place a cutting-edge research infrastructure that will allow scientific and industrial researchers to advance our knowledge in the fields of neuroscience, computing and brain-related medicine.

Ethics and Society is part of the Human Brain Project's (HBP) research core. The group undertakes research into neuroethics and philosophy, foresight, public engagement and researcher awareness, and it runs ethics support and compliance programs for the whole of the HBP. In addition, the group collaborates with an external and independent Ethics Advisory Board (EAB).

The Ethics and Society group is an inspiration to other Brain Projects worldwide. Its academic articles are well received, with e.g. the paper "Neuroethics Questions to Guide Ethical Research in the International Brain Initiatives", co-written with delegates at the International Brain Initiative Summit 2018, receiving >2000 downloads in less than four months. The book of Nikolas ROSE on "Our psychiatric future" has been praised as a "[…] landmark volume […]"[2]. Its public engagement work, the dialogue effort with citizens coordinated across different countries, brought the public voice to the future of brain research. Its ethics support is a role model for other brain projects and research efforts wanting to harvest the power of big data and machine learning[3].

The present Deliverable details the progress made between April 2018 and March 2019 (internally known as M1-M12 in SGA2). Among other achievements, the report details how Ethics and Society is breaking new ground in exploring questions and developing new approaches, e.g.: The Foresight Lab's study on the on the role of brain signatures and their clinical, personal, social and ethical implications; The Neuroethics and Philosophy group's theory of consciousness and their collaboration with the International Brain Initiative on central neuroethics questions to ask; The Engagement group's test of ICT facilitated citizen dialogues in people's own homes; and the Ethics Support group's structure for data governance and educational, dissemination and outreach activities.

[2] http://politybooks.com/bookdetail/?isbn=9780745689111
[3] Stahl, B.C. and Wright, D. (2018) Ethics and Privacy in AI and Big Data: Implementing Responsible Research and Innovation. IEEE Security and Privacy, 16 (3), pp.26-33.

3. Key Result KR12.1

In SGA2 the Foresight Lab will produce briefing reports stemming from foresight and empirical social science analysis of key conceptual, ethical, clinical, and social questions focussed on two main themes:

1) Issues in mental health and disorders, and
2) Communities and infrastructure building.

Achieved through:

- engaging with HBP researchers and cognate groups of researchers
- working on developments in neuroscience, psychiatry, ICT, and robotics, especially those linked to other major brain projects

3.1 Outputs

3.1.1 Overview of Outputs

1) 'Diagnosing Brain Disorders: A briefing report for the Human Brain Project' (C1933)
2) Dual Use Action Plan (T12.1.1, T12.1.2), (MS12.5.2)

3.1.2 Output 1

SP12 - SGA2 Foresight Lab & Researchers Awareness background report 1 (T12.1.1 & T12.1.2) C1933

Building up from the HBP Ramp Up Phase Foresight Report on Future Medicine, the Foresight lab has conducted research on the implications of the potential identification of brain-based markers for the diagnosis of psychiatric and neurological disorders in clinical contexts, and more broadly on the state of the art in relation to psychiatric and neurological diagnostics, with a focus on the role of brain signatures and their clinical, personal, social and ethical implications.

This HBP-specific research has used an approach based on a mix of qualitative methods:

- Two periods of fieldwork in HBP labs (Department of Knowledge Technologies at Jožef Stefan Institute, Ljubljana, Slovenia; Theoretical Neuroscience Group at the Institut de Neuroscience des Systèmes, Marseille, France)
- Individual interviews of several SP8 Work Package leaders
- Desk-based bibliographic analysis of contextual literature and of policy documents
- Individual interviews of experts in policy and regulation around medical devices

Result: 'Machine Learning for Neuro-Diagnostics: Opportunities and Challenges for Clinical Translation', a briefing report for the Human Brain Project' (MS12.1.1) (C1933). The briefing report can be obtained at this link (accessible for reviewers only). The report is currently for internal HBP use only, as a paper based on the report's findings is currently under review in a high impact journal, which will ensure maximum dissemination to the scientific community beyond the HBP. The internal report will be made public as soon as this paper has been accepted for publication. MS12.1.1 will inform the joint SP12 deliverable D79.4 (D12.5.4), SP12 Opinion 3, whose focus is on Ethical and Social dimensions of Artificial Intelligence.

The focus of MS12.1.1 is on mental health and brain disease. The specific focus of the report arose from initial surveys of opinion among key HBP researchers on the issues that were of most concern to them. A draft was reviewed by key researchers in relevant SPs and WPs in the HBP, who gave

feedback, and gave a very positive opinion of the report and its conclusions. All these comments were addressed in the final report as submitted.

The report on "Machine learning for Neuro-Diagnostics: Opportunities and Challenges for Clinical Translation" is based on sound qualitative social research methods, including interviews and group discussions with key researchers in the HBP (especially in SP8), textual analysis and integration with the findings of previous social science research on the challenges of diagnosis in brain disorders, and the challenges of clinical translation. These are key issues to address if the research of the Human Brain Project is to contribute to challenges of clinical practice in relation to brain disorders, which affect large numbers of citizens in Europe and beyond.

We have conducted broader research on the future of psychiatry and the potential role of neuroscience. The conclusion is that most forms of mental distress, including severe mental disorders (psychoses) should be understood as arising from social adversity across the course of life, acting on neurodevelopment increasing or decreasing susceptibility. Mental disorders should thus be understood as social adversity disorders with consequences for neural processes, not brain disorders with consequences for social functioning. Mental distress cannot be understood through studies of isolated brains in animal models or computer simulations but arises from the development and experience of whole organisms in their physical, interpersonal, social and cultural milieu across the life course. There is no evidence for the belief that mental distress comprises a number of distinct disease conditions each with a unique biological basis, and there are no clear distinctions between 'normality' and 'mental illness' or within the various modes of mental distress. Existing psychiatric drugs do not target the causal pathways of mental disorders or mental distress and should only be used for short term symptom reduction. Neuroscientific research should not proceed by investigating the isolated brain, searching for genetic or other biomarkers and brain signatures of disease, but should uncover the pathways, from birth onwards, by which the development of neural processes are shaped by the immersion of the organism in its environment, and in particular the ways in which various forms of adversity and exposures to environmental insults can shape the human brain, and the practices and experiences which can buffer and reverse the effects of adversity.

Result: Rose, N. (2018). Our Psychiatric Future. (London: Polity).

3.1.3 Output 2

Dual Use Action Plan (T12.1.1, T12.1.2)

The Foresight Lab has pursued further research and activities linked to the recommendations formulated in the SGA1 Dual Use Opinion (see corresponding Deliverable SGA1 D12.5.4), in line with the action plan:

Research in the area of European policy:

Result: Dual-use (DU) technologies are both a threat to human security and an opportunity to generate economic value. We have analysed tensions between state preferences for greater competitiveness in DU technologies and their implications for human security, through the lens of the Ethics Issues Checklists (EIC) used by the European Commission (EC) to implement upstream controls on European DU research. We show that the shift towards an economistic framing of DU in the EICs privileges competitiveness at the expense of security imperatives and thereby undermines Europe's commitments to human security as agreed in multilateral treaties. Furthermore, findings show a nuanced understanding of the EC's preference for economic considerations as it combines economic growth expectations from a more competitive DU industry with a strengthening of Europe's hard power capacities via a strengthened domestic security industry.

Research aimed at critically questioning the limitations of the dual use concept:

Result: Our empirical analysis of current developments and uses of neurotechnology shows why distinguishing between military and civilian applications of scientific research and technology development has become increasingly difficult. This has led us to argue that a more nuanced framework than that of dual use is needed to guide research, and to propose some concrete steps towards establishing such a framework.

Researcher Awareness activities around dual use:

Results: We have organised and participated in a number of workshops aimed at raising HBP researchers' awareness. These workshops were kept internal to the HBP, as a doing this kind of work often entails a level of privacy, required by the researchers who accept to work with us on potentially sensitive questions.

- Researcher Awareness Workshop 'Dual Use in Neuromorphic Computing' (18 June 2018), organised in collaboration with Ethics Support (De Monfort University) and SpiNNaker (University of Manchester), Manchester, UK.
- Collaboration in Ethics and Neurorobotics workshop, (Technical University of Munich, Germany, 14 September 2018). https://www.ethicsdialogues.eu/2018/11/02/ethics-and-neurorobotics-workshop/ The goal of the meeting was to establish what were the specific ethical and social issues that neurorobotics may raise. A resulting joint paper on "Ethical and Social Aspects of Neurorobotics" is under revision for a Special Issue of Science and Engineering Ethics on "Brain-Based and Artificial Intelligence"

Participation in the establishment of the HBP Dual Use Working Group: Nikolas ROSE (KCL) is nominated chair of the HBP Dual Use Working Group. The Dual Use working Group attends to issues of continuing relevance, and the work performed here will continue in SGA3. Here it will be addressed with a view to long term implications of the EBRAINS infrastructure.

3.2 Validation and Impact

3.2.1 Actual Use of Output(s) / Exploitation

Output 1: Psychiatrists, clinical researchers, pharma, health policy makers.

Output 2: Policy makers, researchers, regulators, educators of neuroscientists, other international bodies such as International Brain Initiative and OECD

3.2.2 Potential Use of Output(s)

3.2.3 Publications

Due to the nature of our work, our work consists for a large part in preparing opinion articles, books etc. These are therefore listed under the output sections above. Please note that Milestones are used for internal planning and may contain confidential information and are therefore not public. However, relevant information is included in later publications (incl. Deliverables).

1) P1450 Burton S.D., Aicardi C., Mahfoud T., Rose N. (2018). Understanding Interstate Competitiveness and International Security in European Dual-Use Research. In: Vouloutsi V. et al. (eds) *Biomimetic and Biohybrid Systems.* Living Machines 2018. Lecture Notes in Computer Science, vol 10928. *Springer, Cham.* https://doi.org/10.1007/978-3-319-95972-6_14.

   Significance: This paper is a significant first attempt at analysing the tensions between state preferences for greater competitiveness in DU technologies and the implications for human security in the EU

   Output: #2

2) P1851 Mahfoud, T., Aicardi, C., Datta, S., & Rose, N. (2018). The Limits of Dual Use. *Issues in Science and Technology* 34 (4, Summer 2018). http://issues.org/34-4/the-limits-of-dual-use/.

   Significance: This short paper aimed at a wide public uses examples of current developments and uses of neurotechnology to show that a more nuanced framework than that of dual use is

needed to guide research, and to propose some concrete steps towards establishing such a framework

Output: #2

3) P705 Aicardi, C., Fothergill, T., Rainey, S., Stahl, B., & Harris, E. (2018). Accompanying technology development in the Human Brain Project: From foresight to ethics management. In Special Issue "New Directions in Catastrophic and Existential Risks." *Futures* 102 (September 2018): 114-124. https://doi.org/10.1016/j.futures.2018.01.005.

   Significance: This paper addresses the management of catastrophic and existential risks potential of general and specialised AI, through the perspective of the HBP. Building on Foresight, Researcher Awareness and Ethics Management work in the HBP Ethics and Society subproject, it illustrates key aspects of the dynamic approach to ethics and society questions in the HBP. It aims at guiding policy makers and communities who engage with such questions.

   Output: #2

3.2.4 Measures to Increase Impact of Output(s): Dissemination

A selection of three dissemination activities, the complete list will be provided in the report:

1) Rose, N. (23 November 2018). Book Launch event 'Our Psychiatric Future': In Conversation with Nikolas Rose and Simon Wesse (London, UK).

   Significance: High profile opportunity to present research findings on the future of psychiatry and the role of neuroscience

   Output: # 1

2) Aicardi, C. (15-16 January 2019). Invited expert participant to Foresight Workshop on Social and Ethical Issues in AI and Robotics, organised by EU's H2020 SIENNA Project "Stakeholder-informed ethics for new technologies with high socio-economic and human rights impact" (London, UK) (http://www.sienna-project.eu)

   Significance: Opportunity to contribute HBP Ethics and Society expertise to the elaboration of practical ethical guidelines for research and innovation in AI and robotics

   Output: #1 and 2

3) Mahfoud, T. (14-18 November 2018) "Data Communities: the ethics of unification and integration in European neuroscience." 117th annual American Anthropological Association meeting, San Jose, California.

   Significance: Opportunity to compare the community-building in the HBP to other community-building initiatives amongst social science scholars. It will feed back into the Foresight lab report on community and infrastructure which will include best practices and recommendations for the HBP and broader neuroscience community.

   Output: #1

4. Key Result KR12.2

Conceptual clarification and analysis of two key notions within HBP research: consciousness and human identity, by using a neuroethical methodology developed and refined by our team.

4.1 Outputs

4.1.1 Overview of Outputs

1) A theoretical model of consciousness (T12.2.2) (C 1935)
2) Proposal for a dynamic understanding of human identity that accounts for context and culture. (T12.2.1) (C1935)
3) Fundamental Neuroethics as Methodology (T12.2.1, T12.2.2)

4.1.2 Output 1

Novel theoretical model of consciousness (T12.2.2) (C1935)

Compared to recent developments in the field of consciousness studies, currently characterised conceptually by a strong focus on awareness as opposed to unawareness and methodologically by an uncertain collaboration between philosophy and neuroscience, our approach stands out as focusing strongly on the unaware brain activity and as grounded on a strong multi- and interdisciplinary methodology. Present research builds on work developed during the Ramp Up Phase and SGA1 and focuses on:

1) Investigation of the plausibility of simulation technologies for emulation of consciousness and the potential clinical impact of largescale brain simulation on the assessment and care of disorders of consciousness (DOCs), e.g. Coma, Vegetative state/Unresponsive Wakefulness Syndrome, minimally conscious state.
2) Examination of the hypothesis that, in addition to identified Central Nervous System's neuronal/neurochemical factors contributing to addictive dynamics, the socio-economic status plays a causal role through epigenetic processes, originating from the need for additional reward in the brain. This provides a strong base for a socio-political form of responsibility for preventing and managing addiction crises.
3) Conceptual clarification of intelligence (natural and artificial) to undertake ethical reflection on the ethical issues raised by AI and to suggest a criterion for a comprehensive ethical analysis of AI, namely regardless of the presence of intelligence, the lack of morally relevant features disqualifies AI from performing certain human activities.

More information and discussion of the relevant topics can be found in the following blog posts:

- Farisco M. (2018) Drug addiction as a mental and social disorder. The Ethics Blog. https://ethicsblog.crb.uu.se/tag/neuroscience/ December 2018.
- Farisco M. The struggle for consciousness and the dawn of a new alliance between ethics and science. The Neuroethics Blog http://www.theneuroethicsblog.com/2019/03/the-struggle-for-consciousness-and-dawn.html

4.1.3 Output 2

Dynamic understanding of Human identity that accounts for context and culture. (T12.2.1) (C1935)

An explicit goal of the Human Brain Project is to advance our understanding of what makes us human. The Neuroethics and Philosophy group is employing a dynamic understanding of human identity according to which human identity is best understood as a three-dimensional interaction between a particular genetic make-up, a prolonged period of physical brain development, and the rich socio-cultural-symbolic environments where humans develop. The proposed understanding is then employed to address a number of issues, among them:

1) how neuroscience can enhance our knowledge of human identity, the development and applications of neuro-technology to alleviate symptoms or even enhance the human brain can impact what makes us human and whether such impact constitutes a threat to what we are.
2) how having a human identity plays a role in attributing moral considerability and rights and what this means when considering advances in robotics and AI.

Current discussions on neuroscience and human identity tend to take the notion of humanity and what it means for granted. In contrast, our research emphasises the need for a careful examination of the concept in order to address the relevant ethical issues. Since the last HBP review, the research has further analysed and identified diverse views on what makes us human and examined a neuroscientific answer to the question taking into account existing philosophical discussions.

4.1.4 Output 3

Novel neuroethical methodology: Fundamental Neuroethics (T12.2.1, T12.2.2)

Neuroethics is a key concern of the International Brain Initiative https://www.brainalliance.org.au/learn/media-releases/worlds-brain-initiatives-move-forward-together/ and the brain initiatives are trying to integrate neuroethics into their projects in different ways. What they have in common is their understanding of neuroethics as a type of applied ethics, very practically oriented. The HBP addresses applied issues as well, but is also focused on more conceptual concerns, addressed by the HBP neuroethics group: fundamental neuroethics. This is a neuroethical approach that uses conceptual analyses of foundational notions (concepts and methods) of neuroscience to provide the necessary background in examining the potential impact of neuroscience on topics such as the mind/brain relationship, and criteria for consciousness, among others. This entails going beyond ethical applications. The underlying idea is that in addition to its social and ethical dimensions, brain research has important ontological and epistemic dimensions that need to be addressed in themselves (and, of course in order to adequately identify and manage ethical issues as well).

Since the SGA1 M24 HBP review, we have continued to use the methodology in our research on consciousness and identity, we have published a paper in a high impact journal on the role of conceptual approaches in Responsible Research and Innovation (P1438), and actively disseminated the methodology in a number of forums. Its conceptual aspect has been very positively received by other neuroethics groups (for example, the US BRAIN Initiative and the Korean Brain Initiative) involved in the current brain initiatives.

Key ideas are also addressed in the following blogs and poster

- Salles A, Evers K, Farisco M Neuroethics and Philosophy in Responsible Research and Innovation. HBP Summit, Maastricht 15-18 October 2018. (poster)
- Salles A Farisco M. Evers K. Neuroethics: The Importance of a Conceptual Approach. The Neuroethics Blog. http://www.theneuroethicsblog.com/2018/07/neuroethics-importance-of-conceptual.html. July 2018.

- Segerdahl P. Philosophy in Responsible Research and Innovation. The Ethics BLOG https://ethicsblog.crb.uu.se/2018/08/22/philosophy-in-responsible-research-and-innovation/2018.

4.2 Validation and Impact

4.2.1 Actual Use of Output(s)

The following is a summary of key impacts of our work in neuroethics and philosophy in the HBP.

Academic impact: Altmetric indicators (used to determine the amount of attention received by an article) of our publications (from 15 to 70 in some cases), downloads and views from Open Access Repositories (more than 5000), and citations (more than 15) make evident that our research has received significant attention from researchers from different disciplines within and without the HBP. Of particular interest is our research on consciousness (topics that our team continues to examine jointly with HBP neuroscientists) and our conceptual methodology that has been widely discussed in a number of international venues. Our research articles on the importance of philosophical analysis in the examination of the issues raised by neuroscience are frequently referred to in articles and has become part of the background when addressing neuroethical issues in the different international brain initiatives. Finally, on the basis of such research members of our team have been invited to participate as experts in several panels.

Societal Impact: Our main work consists in the identification and conceptual examination of the relevant neuroscientific and concepts and such work is intended to further society's understanding of the social, ethical, philosophical issues raised by neuroscientific research. The impact of such work on society can be measured by media coverage, requests for media appearances (interviews) and engagement with different publics. The section on disseminations, below, provides a showcase of some of these.

4.2.2 Potential Use of Output(s)

Policy making impact: Our work is relevant to policy making, particularly regarding issues such as the ethics of disorders of consciousness, or how to develop a framework for ethically sound AI. The impact of our work on policy making could be measured in terms of the extent to which it is cited in governmental documents and reports, or results in reports that can be used by the appropriate bodies. Since our work in the past has been used as such (for example, *Opinion on Data Protection and Privacy* and *Opinion on Responsible Dual Use*) we expect our current research on consciousness and human identity to be similarly used.

4.2.3 Publications

The three main publications of this KR are:

1) P1665 Salles A. Bjaalie J. Evers K. Farisco M. Fothergill T. Guerrero M. Maslen H. Muller J. Prescott T. Stahl B C. Walter H. Zilles K. Amunts K. (2019) The Human Brain Project: Responsible Brain Research for the Benefit of Society. Neuron 101:3 DOI https://doi.org/10.1016/j.neuron.2019.01.005. Neuron Special Issue on Neuroethics,

   Significance: This paper describes our neuroethics work and ethics infrastructure, pointing to distinctive features and achievements.

   Output: #1, #2, #3

2) P1827 Farisco M, Evers K and Changeux J-P (2018) Drug Addiction: From Neuroscience to Ethics. Front. Psychiatry 9:595. doi: 10.3389/fpsyt.2018.00595.

Significance: This paper suggests a new ethical framework of drug addiction grounded on recent neuroscientific evidence with significant implications for the drug design research developed within the HBP.

Output: #1

3) P1438 Salles A, Evers K, Farisco M. (2018) Neuroethics and Philosophy in Responsible Research and Innovation: The Case of the Human Brain Project. Neuroethics. Online June 7 2018. https://link.springer.com/article/10.1007/s12152-018-9372-9

Significance: This article explains the HBP's neuroethics contribution to the RRI framework, with an emphasis on the key role played by philosophical and conceptual reflection in shaping the scientific agenda.

Output: #2, #3

Total amount of publications of this KR: 25

4.2.4 Measures to Increase Impact of Output(s): disseminations

Three dissemination activities as illustration:

1) Evers K: A Max Planck Symposium: Nature-Culture. Consciousness as an intrinsic feature of the brain. 13 December 2018, Berlin, Germany.

Significance: Unique opportunity to present our model of consciousness in an interdisciplinary context

Output: #1

2) Evers K: Consciousness as an intrinsic characteristic of the brain. HBP International Conference Understanding Consciousness: A scientific quest for the 21st century. 21 June 2018, Barcelona Event organised by HBP.

Significance: Highlights the need to understand consciousness as separate from awareness and the cognitive features of the unconscious that are clinically relevant.

Output: #1

3) Salles A. Neuroethics in the HBP. Global Neuroethics Summit, 13 October 2018, Seul, North Korea.

Significance: Unique opportunity to present our neuroethics work in an international forum

Output: #3

The total dissemination activities (lectures/ interviews/blog entries/panel participation) for this KR: 59 (the complete list will be added to the report).

Social Media:

- Ethics and Society Twitter: @/HBPEthics

5. Key Result KR12.3

In SGA2, the Key Results of the stakeholder and public engagement task of the HBP, will be a report collating results of public and stakeholder engagement on clinical, social and ethical implications of simulation. This report is the input for the third SP12 Opinion.

5.1 Outputs

5.1.1 Overview of Outputs

1) SP12 - SGA2 Engagement background report (C1940)
2) Webinar on Open Research Agenda Setting and the Human Brain Project

5.1.2 Output 1

SP12 - SGA2 Engagement background report (C1940)

The Engagement background report (MS12.3.1 SP12 "Engagement background report") is a collection of results and preparations for public and stakeholder engagement for the 'SP12 Opinion on bio-ai' (C1967) and was used as a check point for the preparation of the AI 360 Copenhagen workshop, described below.

The Danish Board of Technology Foundation (DBT) has been preparing for the citizen engagement on artificial intelligence which will take place in June 2019, where the European citizens will be given a chance to have their voices heard, about a technology that will have significant impact on their lives (C2343, C2335). To this end, the DBT is organising Europe Say on AI: miniature, self-facilitated citizen meetings across Europe, where citizens can discuss issues and dilemmas related to AI. There will be at least 10 meetings with 5-8 participants in 14 European countries. The methodology enables anyone to set up an event, invite their friends, family, colleagues etc. to join them for a morning, afternoon or night of deliberation, in their kitchen, cantina, garden, local assembly hall or wherever it is convenient.

Thus, the Europe Say engagement process consists of multiple individual events, each of which are:

- Self-organised: Anyone can set up an event and invite up whoever they would like to. No prior knowledge of AI is necessary to host or take part.
- Distributed: The events can be set up where it is convenient for the host. Only requirement is an internet connection.
- Digitally supported: To structure and facilitate the deliberation and the collection of input, Europe Say makes use of an online engagement platform, EngageSuite, which enables everyone to participate in their own language.

The contents of the citizen engagement will build on the results from AI 360 | COPENHAGEN.

AI 360 Copenhagen was a two-day stakeholder workshop in March 2019 (21-22 March), organised by the Danish Board of Technology Foundation. The outcome of the AI 360 workshop is the subject of a public report that will be finalised by mid-September 2019. The workshop fostered debate between stakeholders and experts on the topic of prospects of future developments in Artificial Intelligence (AI). The workshop participants dealt with the topic of AI in a multi-criteria and action-oriented manner. The workshop took the form of a versatile scenario-based assessment process structured by the '360 Tool', a participatory multi-criteria assessment tool for AI development. The purpose is to consider complex societal dimensions of future AI applications in industry, defence, civil society and administration as well as other spheres of political and social life. The 360 Tool enables the user to visualise, address and evaluate different technological futures in a structured yet creative manner.

The concrete exercise consists of scrutinising a number of core dimensions: impact on rights and ethics, legal frameworks, social implications, political significance, and economy. The outputs of Copenhagen AI 360 will be presented in a report, pinpointing potential challenges and opportunities raised by AI and providing suggestions for dealing with them (C1890). Furthermore, the outputs will play a key role in subsequent public engagement activities that will be undertaken by the Danish Board of Technology Foundation in June 2019.

As mentioned, the outcome of the AI 360 workshop is the subject of a public report that will be finalised by mid-September 2019, where after we will advertise the report. In addition, the content in the report serves as additional input for the Europe Say on AI public engagement activities that will kick off mid-September as well.

5.1.3 Output 2

Webinar on Open Research Agenda Setting and the Human Brain Project

In more and more countries, the practice of consulting and engaging the public in the beginning of the scientific process, the agenda setting, is being implemented. The benefits of engaging multiple actors in setting agendas and initiatives that strengthen the selection of research priorities is becoming widely recognised. The public engagement works alongside the traditional research agenda setting, made by funding agencies, stakeholders or independent scientists and research institutions e.g. to form more resilient, robust and publicly accepted research agendas.

In this context, the Human Brain Project (HBP) Stakeholder Forums, and the DBT were proud to host a webinar on Open Research Agenda Setting (ORAS) in December 2018.

MS12.3.1 and D12.5.1 presents the result of the webinar in the form of five key aspects to consider before you engage in an ORAS process. The linked webinars are included in the results and a link can be found in the end of this section. In addition, a short opinion on ORAS for SGA3 and EBRAINS is under development.

The following is a summary of the webinar and results:

The webinar provided an opportunity for HBP researchers and stakeholders outside the HBP to exchange experiences, ideas, considerations and concerns. The webinar included 4 guest presentations, which was followed by a facilitated plenary discussion.

The conclusions point to five key aspects to consider before you engage an ORAS process:

1) Questions and design

   It is important to keep questions and design of an engagement process as simple as possible. The presenters in the webinar pointed towards engaging the participants at a levelled footing. They particularly stressed the importance of making sure, that information was translated from the public to researchers, and that this was equally important the other way around.

2) The Methodology

   It is important to acknowledge the consequences of choosing the methodology. There is a big difference from wanting buy-in, to really wanting the public to set the agenda. Furthermore, not one engagement method fits all. However, with a large variety of existing engagement methods, it is certainly possible to find one that fits the specific situation you are working with. For inspiration and examples, a site which helps with a greater overview of engagement methods is the Engage2020 developed 'Action Catalogue'. Link: http://actioncatalogue.eu

3) Managing expectations

   The expectations should be managed on both sides (Citizens and experts). Basically, this means that experts need to learn to work with non-experts and 'vice versa'.

   The long timeframe of research implementation is a typical expectation that needs to be met by experts. Citizens might not know how long it will take to address some of the questions that they

put forward, and might want an immediate remedy or response. This means, that it is vital to clearly communicate that 'research takes time'.

4) Transparency and trust

   It is important to involve the citizens participating in all stages of the ORAS-process. By acting with transparency and trust, the process becomes a better experience for participants, who feel heard and taken seriously. It is recommended to induce trust in the process to ensure participants feel like putting their questions, visions etc. forward. Be clear and let your participants know how you handle their inputs, and what sort of feedback they can expect from participating.

5) Digital tools and personal interaction

   Digital tools and online consultations are great. They help us to reach larger communities and can be used to go through and mine large amounts of data. However, personal interaction is crucial to the ORAS process.

For further information on the outcome form this webinar please visit the website of the event:

http://hbp.tekno.dk/events/webinar-on-open-research-agenda-setting-and-the-human-brain-project/

5.2 Validation and Impact

5.2.1 Actual Use of Output(s)

Output 1: The citizen engagement 'Europe Say' will use the scenarios and other outputs from the AI 360 COPENHAGEN workshop which will be included in the Ethics & Society Opinion on bio-AI.

Output 2: The output from the Webinar on Open Research Agenda Setting and the Human Brain Project will be used in the ongoing work on open research agenda setting in the HBP.

5.2.2 Potential Use of Output(s)

Output 1: The concept of the AI 360 COPENHAGEN workshop has drawn a lot of attention and hopefully others will use this concept for similar workshops. E.g. the HBP Ethics Support team has shown interest in doing something similar. Further, the output will feed into the upcoming work with the International Brain Initiative on citizen engagement.

Output 2: The webinar provided an opportunity for HBP researchers and stakeholders outside the HBP to exchange experiences, ideas, considerations and concerns regarding open research agenda setting. The deliberations at the webinar can hopefully be a 'starting point' for drawing attention to the concept of open research agenda setting.

5.2.3 Measures to Increase Impact of Output(s): disseminations

1) Bitsch, L. Responsible Research and Innovation: The role of public engagement, 2nd HBP Curriculum Workshop on ethics, research and societal impact workshop - Dual use and Responsible Research: Ethical challenges, 15-17 November 2018, Karolinska Institute, Stockholm

   Significance: Speak and participation in roundtable on RRI at the 2nd HBP Curriculum Workshop on ethics, research and societal impact workshop

   Output: #1

2) Videos of the Webinar on Open Research Agenda Setting and the Human Brain Project:

- **Carthage SMITH,** Directorate for Science, Technology and Industry / Organisation for Economic Co-operation and Development (OECD)

  'Open Research Agenda Setting in a Global Setting'

  https://www.youtube.com/watch?v=_01kwe7SHpc

- **Toto GRONLUND**, Adviser at James Lind Alliance, National Institute for Health Research (NIHR)

  'The James Lind Alliance approach to research priority setting'

  https://www.youtube.com/watch?v=XsrGdU_Cu9k

- **Niklas GUDOWSKY**. Institute of Technology Assessment (ITA)

  'Does Open Research Agenda setting work, how could it be done and what do you gain from it?'

  https://www.youtube.com/watch?v=mMpnWhA4UDc

- **Philippe GALIAY**, EC, Head of Sector 'Mainstreaming Responsible Research and Innovation'

  'Open Research Agenda Setting in EC policy and funding'

  https://www.youtube.com/watch?v=nFJy2CjQRuI

  Significance: Dissemination of the presentations from the 4 guest speakers in the Webinar on Open Research Agenda Setting and the Human Brain Project.

  Output: #2

3) Workshop "AI 360 Copenhagen", 21-22 March 2019, Copenhagen

   Significance: The workshop fostered debate between stakeholders and experts on the topic of prospects of future developments in Artificial Intelligence.

   Output: #1

Social Media:

- Ethics and Society Twitter: @/HBPEthics

6. Key Result KR12.4

Creation and maintenance of a public-facing Ethics Support blog, hosted on the Orbit system (Observatory for Responsible Research and Innovation in ICT), which will feature regular, accessible commentary on current developments in neuroscience and computing from a Responsible Research and Innovation perspective. In addition, it will link to Ethics training materials and support the development of strategic links within and outside of the HBP.

6.1 Outputs

6.1.1 Overview of Outputs

1) Novel, dialogical approach to ethics (T12.4.1, T12.4.2; T.12.4.3; T12.4.4) C1822, C1825, C1826, C1827, C1828, C1829, C1885
2) Responsible AI and robotics, and dual use (T12.4.1 & T 12.4.5) C1830, C2172
3) Ethics-Related Data Governance and Data Protection (T12.4.6 & T12.4.7) C1821, C2790

6.1.2 Output 1

Novel, dialogical approach: ethics dialogues (T12.4.1, T12.4.2; T.12.4.3; T12.4.4) C1822, C1825, C1826, C1827, C1828, C1829, C1885

Building on its work during RUP and SGA1, the Ethics Support Work Package is conceptually and practically advancing a novel, dialogical approach to ethics governance. In March 2019, a collaborative paper outlining dialogical approach to ethics governance has been published (Stahl *et al.,* Frontiers in Human Neuroscience, 2019).

Dialogical approach provides an alternative to current research ethics practice, which is based on ethics reviews by institutional review boards (IRB) and underpinned by ethical principalism. Innovative approach developed in the Work Package is based on discourse ethics, which implements responsible research and innovation through dialogues. Ethics dialogues approach allows a broader view encompassing established ethics procedures but remaining open to additional influences. In the case of the HBP, dialogical approach provides a practical way of dealing appropriately with ethical issues in complex and multidisciplinary large-scale technology-enabled project. This approach can help to develop good practice for other projects.

Ethics dialogues approach underpins all activities of the Work Package. To demonstrate its central role, 'Ethics Dialogues' term has been chosen as the title for Ethics Support blog https://www.ethicsdialogues.eu/. In practice, ethics dialogues in the HBP involve scientists, Ethics Rapporteurs and the Ethics Advisory Board to support reflection, good practice and compliance. The EAB is an independent body that advises the HBP governing bodies on ethical, regulatory, social and philosophical issues encountered within the HBP. The Ethics Rapporteur Programme is an HBP crossover ethics governance structure, which deepens understanding of potential ethical and social implications of research and other work by the academics, scientists and engineers in all the HBP Subprojects.

More information and reflection about practice of dialogical approach to ethics in the HBP can be found in the following blog posts.

- Ethics Support in the Human Brain Project: Q&A with Bernd Stahl 10.10.2018 https://www.ethicsdialogues.eu/2018/10/10/ethics-support-in-the-human-brain-project-qa-with-bernd-stahl/

- Compliance Management in the Human Brain Project: Q&A with William Knight 8.11.2018 https://www.ethicsdialogues.eu/2018/11/08/compliance-management-in-the-human-brain-project-qa-with-william-knight/
- Animal Research Ethics in the Human Brain Project: Q&A with Abdul K.H. Mohammed 10.12.2018 https://www.ethicsdialogues.eu/2018/12/10/animal-research-ethics-in-the-human-brain-project-qa-with-abdul-k-h-mohammed/
- Ethics Rapporteur Programme: Q&A with Manuel Guerrero 11.2.2019 https://www.ethicsdialogues.eu/2019/02/11/ethics-rapporteur-programme-qa-with-manuel-guerrero/

6.1.3 Output 2

Responsible AI and robotics, and dual use (T12.4.1 & T 12.4.5) C1830, C2172

In its research, outreach and education activities, Ethics Support applies the Responsible Research and Innovation approach to address ethical issues in Artificial Intelligence, robotics and dual use.

Analysis of responsible AI aims to map risks and benefits as well as make recommendations for AI governance outlined in AI policy documents from national governments, international organisations, civil society organisations, think tanks and consultancies. Results of this analysis feed into education activities, and a forthcoming Ethics and Society Opinion on AI. Application of RRI to neurorobotics is addressed in joint activities of SP12 and SP10 that include the workshop on ethics of neurorobotics in September 2018 and a follow-up of collaborative research activities.

Research and practice on responsible dual use aims to broaden reflection, awareness and action on potential beneficial and harmful uses of neuroscience and neurotechnology. These ideas underlie work of co-chairing the HBP Dual Use Working Group and leading preparation of HBP Dual Use Action Plan to implement recommendations outlined in the second Ethics and Society Opinion on Responsible Dual Use.

Key ideas and activities in the area of Responsible AI, robotics and dual use are addressed in the following blog posts:

- Ulnicane, I. Ethics Support @ HBP Open Day and Summit 2018 22.10.2018 https://www.ethicsdialogues.eu/2018/10/22/ethics-support-hbp-open-day-and-summit-2018/
- Ulnicane, I. Ethics and Neurorobotics workshop 2.11.2018 https://www.ethicsdialogues.eu/2018/11/02/ethics-and-neurorobotics-workshop/
- Ulnicane, I. Making sense of changing relationships between technology, security and society in Europe 14.11.2018 https://www.ethicsdialogues.eu/2018/11/14/making-sense-of-changing-relationships-between-technology-security-and-society-in-europe/
- Leach, T. Beyond human rights: ethics in the age of AI and posthumanism 21.12.2018 https://www.ethicsdialogues.eu/2018/12/21/beyond-human-rights-ethics-in-the-age-of-ai-and-posthumanism/
- Wanjiku, W.-G. and I.Ulnicane Dual Use and Responsible Research: Learning about ethical challenges ahead 9.1.2019 https://www.ethicsdialogues.eu/2019/01/09/dual-use-and-responsible-research-learning-about-ethical-challenges-ahead/
- Ulnicane, I. Engaging with emerging technologies: representation, responsibility, and reflexivity 17.1.2019 https://www.ethicsdialogues.eu/2019/01/17/engaging-with-emerging-technologies-representation-responsibility-and-reflexivity/

6.1.4 Output 3

Ethics-Related Data Governance and Data Protection (T12.4.6 & T12.4.7) C1821 C2790

Building on the work done in SGA1, major research, practice and education activities are undertaken to support responsible data governance and data protection.

In practice, ethics-related data governance and data protection builds on the first Ethics and Society Opinion and Action Plan on Data Protection and Privacy. Ethics-Related Data Governance task contributes its expertise in ethics to ensure responsible data governance in the HBP and chairs the HBP Data Governance Working Group (DGWG). Data Protection Officer ensures that any potentially privacy-relevant data in the HBP are dealt with in accordance with data protection principles, in particular, the General Data Protection Regulation (GDPR). The DGWG has produced the Data Policy Manual (SGA2 D12.4.1) as a resource and reference to support Human Brain Project research and the development of research infrastructure for neuroscience. It therefore outlines a series of policies designed not only to ensure compliance with the GDPR and other regulatory guidelines relevant to research, but also to facilitate the publication of datasets, support transparency, and ensure the continuing, sustainable availability of data for the purposes of reproducibility, teaching, further research, and public access as appropriate.

Ethics-Related Data Governance and Data Protection topics are addressed in the following blog posts:

- Fothergill, T. Data Governance for Young Researchers 24.10.2018 https://www.ethicsdialogues.eu/2018/10/24/data-governance-for-young-researchers/
- Stahl, B. Healthcare in the Era of Big Data: Opportunities and Challenges 31.10.2018 https://www.ethicsdialogues.eu/2018/10/31/healthcare-in-the-era-of-big-data-opportunities-and-challenges/
- Akintoye, S. International Data Transfers in the Human Brain Project 22.11.2018 https://www.ethicsdialogues.eu/2018/11/22/international-data-transfers-in-the-human-brain-project/
- Ethics-Related Data Governance in the Human Brain Project: Q&A with Tyr Fothergill https://www.ethicsdialogues.eu/2018/11/28/ethics-related-data-governance-in-the-human-brain-project-qa-with-tyr-fothergill/

6.2 Validation and Impact

6.2.1 Actual Use of Output(s)

Output 1: In practice, novel approaches of ethics dialogues in the HBP involve scientists, Ethics Rapporteurs and the Ethics Advisory Board to support reflection, good practice and compliance.

The Ethics Support Work Package uses an ethics dialogues approach to ensure compliance and addresses a range of ethical issues within the HBP. An example of practical use of this approach are annual trilateral ethics meetings of Ethics Support, Ethics Advisory Board and all HBP Subprojects (their Ethics Rapporteurs and other representatives) to take a stock and outline future needs of tackling ethical questions in each Subproject. Thus, the ethics dialogues approach provides a space for reflection and deeper consideration of ethical issues arising in the HBP.

Output 2: Results of the analysis of Responsible AI and robotics, and dual use feed into education activities, a forthcoming Ethics and Society Opinion on AI, HBP Dual Use Working Group and HBP Dual Use Action Plan. They help to educate HBP members about benefits and risks of AI and ways of addressing them. Additionally, these results help to prepare actions for identifying potential misuses of HBP research results and infrastructure. Thus, actual use of this output contributes to implementing Responsible Research and Innovation approach in AI and robotics in the HBP.

Output 3: Ethics-related data governance and data protection work in the HBP develops and implements a series of policies designed not only to ensure compliance with the GDPR and other regulatory guidelines relevant to research, but also to facilitate the publication of datasets, support transparency, and ensure the continuing, sustainable availability of data for the purposes of reproducibility, teaching, further research, and public access as appropriate. Thus, this output contributes to responsible data governance in the HBP.

The blog was launched in October 2018 and by the time of reporting (March 2019) it had been in operation for half a year. This first half a year was dedicated to building up a community of regular contributors to this multi-author blog as well as developing audience within and beyond the HBP. Until the end of March 2019, 17 blog posts have been published. All Task Leaders, other members and collaborators of Ethics Support have contributed to the blog.

To build up an audience for the blog, information about it has been widely shared within the HBP (newsletter, HBP open Day and Summit, HBP Education events etc) and beyond (e.g. scientific conferences). We share blog posts via our Twitter account @HBP_Ethics_Sppt (300+followers). We monitor the blog usage statistics, which are increasing. By the end of March 2019, we have had more than 1,300 page views from around the world, in particular from UK, US, Sweden, Nigeria, Kenya, Germany and Austria. We also engage with relevant communities for their feedback which we consider in further developing the blog. All Ethics Dialogues blog posts are also re-posted on ORBIT website https://www.orbit-rri.org/partner-projects/, thus, reaching a broader audience

6.2.2 Potential Use of Output(s)

Output 1: This approach can help to develop good practice for other projects in neuro ICT and other research fields. It can be used by EU policy-makers interested in promoting responsible research in future framework programmes. It can also provide useful lessons for other large-scale brain initiatives around the world on how to build their ethics support infrastructure.

Output 2: Wide dissemination of our work on responsible AI and robotics, and dual use via scientific publications, conference presentations, blog posts etc. enables further use of our research results by policy-makers, educators and scientists interested in learning about and implementing broader approach to responsible dual use, AI and robotics. Insights from this work are particularly relevant for EU policy-makers and practitioners because major developments are currently taking place in EU policies on dual use, AI and robotics and novel approaches to address ethical issues in these areas are sought.

Output 3: Novel ethics-related data governance and data protection policies developed and implemented in HBP are highly relevant for other international brain initiatives and similar projects. They provide good practices for policy-makers, clinicians and scientists in and beyond neuro-ICT field.

6.2.3 Publications

1) P1857 Stahl, B., Akintoye, S., Fothergill, B.T., Guerrero, M., Knight, W. and Ulnicane, I. (2019) Beyond research ethics: Dialogues in Neuro-ICT Research. Frontiers in Human Neuroscience. DOI: 10.3389/fnhum.2019.00105

   Significance: This paper develops a novel approach to ethics governance which is based on discourse ethics and implements responsible research and innovation through dialogues.

   Output: #1

2) P1484 Stahl, B.C. and Wright, D. (2018) Ethics and Privacy in AI and Big Data: Implementing Responsible Research and Innovation. IEEE Security and Privacy, 16 (3), pp.26-33. DOI: 10.1109/MSP.2018.2701164

Significance: On the basis of work done in the Human Brain Project, this paper suggests how the concept of Responsible Research and Innovation approach can help to address privacy and other ethical issues.

Output: #2

3) P1478 Stahl, BC., Rainey, S., Harris, E. and Fothergill, B.T. (2018) The Role of Ethics in the Data Governance of Large Neuro-ICT Projects. Journal of the American Medical Informatics Association, 25 (8), pp. 1099-1107. DOI: 10.1093/jamia/ocy040

Significance: This paper presents results of a survey of data governance principles in large neuro-ICT projects identifying their common features and shortcomings.

Output: #3

6.2.4 Measures to Increase Impact of Output(s): disseminations

Some dissemination activities:

- Ulnicane, I., Aicardi, C. and W.Knight (2018) panel 'Engaging with Emerging Technologies: Representation, Responsibility, and Reflexivity', Science in Public 2018 conference, 17-19 December 2018. Cardiff, UK.

  Significance: Opportunity to present and discuss insights and lessons learned from HBP Researcher Awareness and Ethics Support work at an international interdisciplinary conference focused on science communication and public engagement with science and technology.

  Output: #1, #2, 3

- Stahl, B. & I.Ulnicane (2018) Philosophical, social, policy and ethical aspects of AI, The Human Brain Project Meeting, 7-8 May 2018. Alpbach, Austria.

  Significance: Disseminating research results on societal benefits and risks as well as ways to address them among neuroscientists, computer scientists and engineers in the HBP.

  Output: #2

- Fothergill, T. (2018) Ethics and Data Governance in the Human Brain Project, the HBP Young Researchers Event, 18 April 2018. Sofia, Bulgaria.

  Significance: Disseminating research results and policies on ethics-related data governance among young researchers.

  Output: 3

Social Media:

Ethics Support Twitter account @HBP_Ethics_Sppt 300+followers, 650+ tweets

Ethics and Society Twitter: @/HBPEthics

7. Conclusion and Outlook

In June 2018, Ethics and Society helped organise the first large international conference of the HBP: "Understanding Consciousness: a scientific quest for the 21st century", 21-22 June 2018 in Barcelona. The conference was hugely successful in collecting a disciplinary diverse world-leading group of researchers in two days of intense debate. In addition to providing new insights and understanding, the conference helped increase the visibility of HBP internationally and promote scholarly debate. The group also published several successful peer reviewed articles on social and ethical issues in the HBP (a few examples are included in the present report, the complete list will be added to the report), published a book exploring futures of psychiatric care, organised several workshops; provided a number of lectures; participated in conferences, panel discussions and other events (>80 from April 2018 to March 2019),

From previous periods of the HBP, the group has learned the value of inviting HBP researchers and leadership into its 'machine room', whilst developing concepts for events, opinions, and working groups. Therefore, representatives of other main research clusters in the HBP are members of the HBP Working Group on Dual Use. The establishment of the working group was led by Ethics and Society to follow-up on recommendations from our Opinion on Responsible Dual Use. Ethics and Society also collaborates across the HBP in the writing of the first HBP white paper on AI, and the group is part of the organisation of the next HBP conference on AI and brain research. Finally, the group has started to also add items on the agenda of official meetings of the HBP leadership.

For the period April 2019 to March 2020, the group looks forward to harvesting on much of the preparatory work done in the first period. It includes: the publication of the Ethics and Society Opinion on implications of (bio)AI and Brain science; the next Foresight report; Citizen workshops across Europe on AI and brain research; the next international HBP conference on AI and Brain Research; Collaboration on neuroethics and engagement with the IBI, including a May 2019 workshop to prepare for the September 2019 IBI Neuroethics Summit in Daegu, South Korea; further expansion of our Ethics Blog, Social Media activities and participation in HBP education workshops and activities. Furthermore, the group has taken up suggestions from external reviewers to publish on issues of "Open Research Agenda Setting", "Standards or procedures for recognise ethics approvals from outside the EU for human and animal data", "Principles of international data sharing", "HBP model data processing agreements", "HBP as a data controller", "HBP Specific Protocols for Privacy by Design".

Annex A: Component Details

Component Field	Data
ID	C1933
Title	SP12 - SGA2 Foresight Lab & Researchers Awareness background report 1
Type	Report
Leader	Nikolas ROSE (KCL)
(Release) Name	'Diagnosing Brain Disorders: A briefing report for the Human Brain Project'
Release URL	https://collab.humanbrainproject.eu/#/collab/38361/nav/264816?state=uuid%3D1258b731-29c3-4d58-9646-490c21546c71 This link is accessible to reviewers only.
Effective (Release) Date	M12

Component Field	Data
ID	C1935
Title	SP12 - SGA2 Philosophy background report
Type	Report
Leader	Kathinka EVERS (UU)
(Release) Name	MS12.2.1: SP12 - SGA2 Philosophy background report
Release URL	https://collab.humanbrainproject.eu/#/collab/38361/nav/264816?state=uuid%3Dcb0fa9e2-2465-4487-9e03-698608c0916e This link is accessible to reviewers only.
Effective (Release) Date	M14

Component Field	Data
ID	C1940
Title	SP12 - SGA2 Engagement background report
Type	Report
Leader	Lars KLÜVER (FT)
(Release) Name	MS12.3.1: SP12 - SGA2 Engagement background report
Release URL	https://collab.humanbrainproject.eu/#/collab/38361/nav/264816?state=uuid%3D90cc7736-ba01-41cd-ad48-d63876e6caf9 This link is accessible to reviewers only.
Effective (Release) Date	M14

ID	Component Name	Type	Leader	Info on releases and major updates
C1821	Data Policy Manual	Report	Tyr FOTHERGILL (DMU)	Data Policy Manual
C1822	Ethics Advisory Board	Service	Shamim PATEL (LNU)	Ethics Advisory Board
C1825	PORE Reports	Report	Manuel GUERRERO (KI)	
C1826	Ethical Issues Registry	Report	Will KNIGHT (DMU)	MS12.4.6: Ethical Issues Registry
C1827	HBP SGA2 Ethical Issues and Approvals Form	Dataset	Will KNIGHT (DMU)	MS.12.4.5: HBP SGA2 Ethical Issues and Approvals Form
C1828	Ethics SOPs	Report	Bernd STAHL (DMU)	MS12.4.7: Research Integrity SOP

C1829	Rapporteur One Pagers	Report	Manuel GUERRERO (KI)	MS12.4.4: Rapporteur One Pagers
C1830	Ethics Training Workshops and Videos	Service	Bernd STAHL (DMU)	
C1885	Internal Ethics Review	Service	Bernd STAHL (DMU)	MS12.4.2: Internal Ethics Review
C2172	Ethics Support Blog	Service	Inga ULNICANE (DMU)	MS12.4.8: Ethics Support Blog https://www.ethicsdialogues.eu/
C2790	Data protection overview of the HBP	Report	Kevin MCGILLIVRAY (UIO)	