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SSH-IMPACT PATHWAYS AND SSH-INTEGRATION IN EU RESEARCH FRAMEWORK PROGRAMMES.

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IN REMEMBRANCE OF
PHILIPPE KERAUDREN (1963-2017)

ABSTRACT

This Working Paper builds on the scientific discourse on valuation of SSH research as well as SSH-integration in EU framework programmes and aims at summarising the key findings from the November 2018 Austrian EU Presidency Conference "Impact of Social Sciences and Humanities for a European Research Agenda – Valuation of SSH in mission-oriented research". It deals with the topic in three instalments. First, it will discuss recent trends in research funding. Second, it provides a brief historical overview of the efforts of integrating SSH into the EU Research Framework Programme. It then adds some observations about continued challenges in SSH. Finally, it will conclude with some suggestions for SSH scholars, based on the discussions from the conference. In that regard the Working Paper is also a document for further reading for those who have read earlier, shorter texts that were published in preparation of that conference.

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1. INTRODUCTION

This Working Paper reflects the current status of research in the social sciences and humanities (in the following: SSH research) in the context of European research policy.[1] It examines three seemingly separate issues: the recent development of research policy, both in terms of actual funding as well as its rhetoric; the actual history of SSH research within the European Union research funding instruments; and the epistemological characteristics of SSH research. Tying these issues together will provide a better understanding of where the social sciences and humanities stand, what their capacities are, and what they can provide to tackle societal challenges that we, as humankind, face today. Based on this background, the ambition of this Working Paper is to discuss how to enhance the role of SSH research in current and future research funding policies.

This Working Paper follows up on two shorter policy papers. The first, called "impact re-loaded", was written in spring 2018 by three co-organisers of the SSH impact conference in Vienna in November of the same year, making the case to their colleagues in the SSH community to "reflect upon and redefine their role and redefine their societal relevance". Specifically, the paper wanted to achieve three things: "to contribute to, and shape the concept" of impact; to shed away academic struggles in order "to come up with a more collaborative understanding of what is at stake"; and finally, while "wanting to exert influence in society", also being "open to be influenced by society and its needs." (König, Nowotny, and Schuch 2018) While this Working Paper hopes to provide additional insights into all three of these aspects, it is clearly focused on the second aspect, that is, to contribute to enhancing the conditions for SSH to provide robust, and lasting, contributions to solving societal challenges. The other paper, shortly SSH Guidelines, summarises recommendations for R&D programme authorities, reviewers and programme evaluators (König 2019). Since this second policy paper could only make claims, the Working Paper also aims at substantiating the role, and characteristics, of SSH research (for more details on the SSH Guidelines, see section 5).

Given the perspective and supplemental role of this Working Paper, there are three important restrictions to announce right away. (1) The ambition of this document is not to lay out in detail what kind of SSH

1 This Working Paper has received project funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 814729. I am grateful to Rafael Schögler, Christian Fleck, Ulrike Felt, Helga Nowotny and Katja Mayer for initial discussions on the matter, as well as to Matthias Reiter-Pázmándy and Klaus Schuch for comments on a preliminary draft.

research is relevant for cooperative, interdisciplinary research tackling societal challenges, and to what end. Other reports have already provided substantial input to this, and interested readers are explicitly invited to read them with great attention (see Atkinson *et al*. 2009; Drotner 2013; Daston *et al*. 2018). Rather, this Working Paper is to discuss the context, constraints, and potentials of SSH research. It is much more concerned with questions related to science policy and, more specifically, research policy.

(2) For the remainder of this Working Paper, SSH research means primarily research carried out along project-based funding. At European level, this is mostly done under the EU Research and Innovation Framework Programme (aka FP, currently in its eighth edition, called Horizon 2020 and from 2021 onwards in its ninth edition called Horizon Europe). Obviously, there is a wide array of contributions of social sciences and humanities in other areas of the European polity – providing crucial social and economic data (like EUROSTAT), building up transnational infrastructure (such as CESSDA, CLARIN, DARIAH, ESS, SHARE), or providing intellectual reflection and independent analysis of the European integration process (by institutes such as EUI, but also in academic conferences, etc.).[2]

(3) Even the focus on the FP and its sprawling set of funding instruments requires further restriction, as this paper is interested mainly in programmes dealing with mission-oriented research funding. Again, there are other funding opportunities within the FP that enable researchers from SSH to conduct academic research.[3] The restriction is justified because the question at hand is about the potential role of SSH in contributing to producing new knowledge specifically to solve problems that are generally perceived to be worrying risks to individuals, peoples, societies and humanity. These problems are not defined in a purely scientific manner, albeit scientific research may have contributed to their existence in the first place and usually also provides the toolkits to recognise and understand them. For example, the list of "Sustainable Development Goals" (SDG), as adopted by the United Nations General Assembly in 2015, consists of a number of problems that have been identified, acknowledged, and also negotiated in an intricate policy process involving all UN member states.

Whatever their denomination in the specific policy context: the emphasis on "challenges", goals" and "missions" recognises that there are problems so wicked that we require particular efforts to cope with them. Obviously, science – and new scientific knowledge – is key to understanding those problems, to alleviating them and also to preparing for potential fallouts. At the same time, this added a new layer to the ambitions of research funding policy. It has also renewed the quest to increase cooperation between different fields of science and scholarship, and has reinforced the growing demand for "impact".

2. RECENT DEVELOPMENTS IN RESEARCH FUNDING

From a scholarly perspective, "science" can be described as a self-regulatory, multi-faceted, highly specialised institution whose numerous factions and divisions nonetheless share some important informal norms (Merton 1957, 537–61), and research (or, in economical terms: knowledge production) is one of the key components of this institution.4 Yet science is also regulated by policy, and money has emerged as a defining ingredient in this relationship (Greenberg 2001). Historically, public policy attempts to guarantee public benefits while maintaining scientific independence can be differentiated into periods.5 Against this backdrop, the relationship of "scientific research" and public policy has been coined by three interlaced trends over the last two decades. The first is the innovation policy narrative; the second is about interdisciplinary cooperation; the third is about impact. All three have consequences for SSH research in the European research funding landscape at large, and in the mission-oriented research funding parts of the FP specifically. In the following three instalments, a closer look at each of those trends is provided.

THE INNOVATION POLICY NARRATIVE

The narrative of innovation policy stresses the importance of scientific research for innovation, and thus, for the well-being of individuals and our societies. If economic growth is the bedrock of democracy, then innovation is the best guarantee for economic growth. But because investment in scientific research is broadly accepted to be a common good (Stephan 2012), innovation must be stimulated through public spending in research and development (R&D). In the European Union, this narrative emerged in the 1990s (Ulnicane 2015), solidified into a new, additional European "governance architecture" (Borrás and Radaelli 2011), and, with its flagship "innovation union" (European Commission 2010) has become one of the latest hopeful driving forces for further integration amidst an EU that otherwise is often described as being in crisis.[6] The current debate about the future EU-Budget, the next multiannual financial framework (MFF) from 2021-2027, vividly continues this narrative.

The innovation policy narrative (see Figure 1) shares some similarities with what is usually known as the linear model of innovation, the assumption that there is a sequence of steps from "basic research" through applied research to development and marketisation of new products. As has been convincingly argued, while the linear model of innovation is often thought of as too simple by experts[7], it remains a "social fact" partly

2 For useful reflections of the relationship between social sciences and European integration, see Rosamond (2007), also Anderson (2009).

3 Most prominently, this is the European Research Council (ERC), which offers generous funding to individual researchers in a highly competitive manner (König 2016).

4 Other components are training in scientific methods and teaching of theories, and dissemination of research results. Merton, in the book referred to, also points out that "science is a deceptively inclusive word", and restricts his own analysis to "science as an institution" (551). This is true also for the way the term is used here, except that it explicitly includes the social sciences and humanities.

5 The most basic, and best known, differentiation is the one between "Mode 1" and "Mode 2" periods; cf. Gibbons et al. (1994; see also Braun 2003 for further elaboration). Elzinga (2012) suggests a periodisation that better aligns to historical developments since the end of WWII; he distinguishes between the consecutive periods of "legitimation", "professionalisation", and "accountability".

6 See, for the European Union, a short analysis in König (2017, 123–27)

7 Alternative approaches include the "Mode 2" and various "helix" models; for a good overview, cf. Hessels and van Lente (2008).

because it is so entrenched in statistics (Godin 2009, 27). Similarly, while there are reasonable doubts about the underlying assumptions of the narrative (Wladawsky-Berger 2018), and attempts to come up with alternatives (Nowotny 2016), it seems fair to say that the innovation policy narrative remains convincing for policy makers thus far.

Fig. 1: Schematic depiction of the innovation policy narrative
(Drawn by the author)

Why this persistence? The rise of the innovation policy narrative is not purely a discursive phenomenon, as it has increased attention towards creating opportunities for new knowledge (Flink and Kaldewey 2018). Policy makers and the public have been willing to pour more money into scientific research with the expectation of increased social benefit. But this is coming with strings attached, and potential ramifications for SSH research in particular. One consequence is that "innovation" is usually thought of in a narrow sense: everything that leads to commodification, marketisation of products.[8] Such expectations are also somewhat predetermining the type of research that is to be supported in the first place. Also, there seems to be a preference for spending additional means in the form of competitive project-based research funding. Finally, there is an increased demand to prove the value of research funded by public domain, the (perceived) pressure on policy makers to show accountability to the tax payer, and to objectively control the usage of public funding in a new bureaucratic fashion ("audit culture").

INTERDISCIPLINARY COOPERATION

Debate about the illnesses of academically organised, disciplinary research is ongoing.[9] One of the oldest tropes of science policy has been the notion of "interdisciplinarity" – the idea of overcoming the "epistemic rent-seeking" of scientific disciplines (Fuller 2016) by integrating the strengths of various disciplines towards one research goal (Frodeman, Klein, and Pacheco 2017). In the words of one of the leading scholars on the topic, the notion of interdisciplinarity is more about "expressing our dissatisfaction with current modes of knowledge production" than providing a concept of what it actually is (or could be) (Frodeman 2010). At the same time, this combination of emptiness and promise might easily be one major reason for its continued success.

This does not mean that interdisciplinary research is not taking place. Yet the innovation policy narrative and its aforementioned ramifications for research (and SSH research specifically) bring a new dynamic to the age-old idea of interdisciplinarity. The increase of project-based research funding and the new emphasis on tackling societal challenges mean that interdisciplinary research is often expected in terms of temporary, contractual cooperation – with all the problems and opportunities that go along with it (Lyall *et al*. 2013; König and Gorman 2016). But it is necessary to think of different "modes" of interdisciplinary cooperation that result from the specific questions to be tackled as much as from the broader circumstances that drive research. Indeed, one can distinguish between an integrative, a subordinate, and an agonistic mode of interdisciplinary cooperation (Barry, Born, and Weszkalnys 2008, 28–29). It is easy to see how this is of particular importance for SSH research: on the one hand, the tendency to bring scholarly research in the social sciences and humanities under an all-encompassing funding regime, together with the natural and life sciences and engineering, is an opportunity to make better use of SSH research and to open up the field. Yet there is also a considerable pressure to align research on intricate and complex relations of societal ailments to the formal requirements of those temporary combinations of researchers. Also, there is a tendency to delegate certain aspects (like participation, communication or ethics) of a large cooperative research project to partners from SSH fields, which does not necessarily do justice to the potential input that could be provided.

IMPACT ASSESSMENT

Public funding bodies have established and fine-tuned administrative procedures to make sure that taxpayers' money is well-used. As in many other areas of performance measurement (Muller 2018), the New Public Management style has found its expression in a "metric tide" at universities (Wilsdon *et al*. 2015) with the attempt to assess input, output, and impact of scientific research (de Rijcke and Rushforth 2015). While in the late 1990s and early 2000s, the main focus of assessing the quality of research and scientific conduct has been on academic relevance (often under the term "excellence"), recently there has been a shift towards the broader notion of impact.[10]

Impact of research means at least three different dimensions of newly produced knowledge; besides academic impact it also includes impact on the political realm and on the public, or society, by and large. Academic impact of knowledge production is rather easily assessed, usually

8 A historiographical analysis has revealed the complex history of the term "innovation", see Godin (2015)

9 For a powerful, recent argument in that context see the essay by Dan Sarewitz (2016). A good summary of "malfunctions" of science is provided by Fischer (2008).

10 For a recent, powerful critique on the notion of excellence in research see Moore et al. (2017).

through citations; it relies on a decade-old field called "scientometrics" (Mingers and Leydesdorff 2015; Gingras 2016). Broadening the meaning of impact has opened the door to a wider variety of tools of assessment, some of which rely on exciting new techniques;[11] yet it also brought in considerable difficulties, or ambiguities.[12] To start with, there are different types of impact along two dimensions (expected vs. unexpected, and intended vs unintended) (Reale *et al*. 2014, 37). Also, there are at least four problems when assessing, or measuring, impact of research: the problem of causality, the problem of attribution, the problem of internationality, and the problem of the observation period (Felt and Fochler 2018, 9–10). These difficulties apply not solely to SSH research. Given the difficulties that come along with it, the broadening of the concept of impact has specific ramifications for the social sciences and humanities. (Reale *et al*. 2017)

WHAT THESE TRENDS MEAN FOR SSH RESEARCH

Based on this tour de force, we can briefly summarise the constraints that current trends in research funding pose on SSH research specifically. One is that the narrow concept of innovation seems to exclude broader notions of societal innovation. Another is the urge to collaborate temporarily and the tendency of being delegated a specific role in the interdisciplinary machinery. And yet another one relates to the inherent difficulties of proving its value under the current audit culture regime. At the same time, one must also emphasise the opportunities that are created here for SSH research to actually play a more important role in the production of knowledge that is relevant for society. We can see within the continued paradigm of innovation policy that a dual shift is taking place. On the one hand, this shift is moving away from the excellence rhetoric that was behind the drive to reinvigorate the European Research Area, aiming at broader impact; on the other hand, the new focus on tackling societal challenges through mission-oriented research funding instruments also means that the narrow understanding of "innovation" may be prone to some conceptual adaptation.

A critical issue of this summary is that much depends on the SSH communities themselves: it is up to them to get involved and to make sure their considerable amount of expertise is better heard. This call for active involvement is not new. The next section aims to take a look at the history of SSH involvement and the achievements that have been made so far.

3. HISTORICAL ASSESSMENT OF INTEGRATING SSH

Against the backdrop of the general context of recent developments in research funding mentioned in the previous section, it is now necessary to assess the development of dealing with social sciences and humanities under the latest editions of the EU Research Framework Programme (FP). The 2009 Lisbon "Treaty on European Union" put science and research officially at the European stage (TEU Art 3(3), and TFEU Art 179-190), but as a matter of facts, research policy had been there for a long time already (Banchoff 2002, 7–8; also Guzzetti 2000, 2009). Social Sciences had their own targeted programme from 1994 on, immediately following the Maastricht Treaty (Kastrinos 2010, 300). Since the sixth edition of the FP, the humanities were also officially included (Smith 2003). For SSH research as a whole, therefore, the role of European funding, and the European Commission's FP specifically (Schögler 2013; Schögler and König 2017), has increased over the past two decades, and with regards to two aspects.

In his analysis of SSH in Europe from 2010, Nikos Kastrinos (2010) found that, despite the emphasis of research priorities and thematic orientations, European research funding then was moving more and more towards a "diffusion-oriented model", emphasising capacity building over fulfilling a distinct mission (301). This would also remain the case with the eighth edition of the Framework Programme, Horizon 2020, even though the missions-approach would soon make a comeback. The second observation was that the EU research programmes had emerged as points-of-reference for the member states, both in terms of themes (such as the challenges) and in the orientation (diffusion instead of mission);[13] in some respect they had even outpaced funding opportunities at national level. The third observation referred to the fact that, despite of its limited size within the overall FP budget, and despite several national funding schemes targeting research in the social sciences and humanities, "in comparative terms" the FP's own dedicated research funding for SSH "has been the largest targeted programme in Europe" that was available for research in social sciences and humanities (304).

RUNNING UP TO HORIZON 2020

Kastrinos article summarised the state of development for SSH research shortly before negotiations of the eighth edition of the FP (Horizon 2020, which was scheduled to begin with 2014), and the role of SSH research in it, started. However, to understand the debate that followed, it is important to also take into consideration the broader context of that time. The diffusion-oriented approach of defining broad thematic challenges, the growing importance of coordination of research policy at European level, and the fact that the latest editions of the FP also included large programmes funding SSH research already put pressure to fit in on those communities that perceive themselves as part of the label "SSH". This only intensified in 2008 and the following years, when

11 See, for example, the topic analysis in the UK report on arts and humanities by Draux and Szomszor (2017)
12 For a somewhat different debate on impact assessment in the US, see Kamenetzky (2013).
13 Similarly, Lebeau and Papatsiba (2016).

researchers and universities alike experienced that, in numerous member states, national budgets were concentrated and cut due to financial constraints. When, in 2010, the directorate dedicated to social sciences and humanities research in the Directorate General for Research and Innovation was abolished, this experience was now also projected onto the EU research framework.

In response to this, members of the SSH communities began to rally. In December 2010, researchers from HU Berlin mobilised against what they perceived as the "thematic and financial" "downsizing of Social Sciences in the EU". (Börzel, Risse, and Sprungk 2010) This was followed by an Open Letter to the European Commission by the newly created "European Alliance for Social Sciences and Humanities" (EASH 2011; Klein 2011). In those and other comments and interventions, the core arguments can be extrapolated in the following way: (1) To express fear about the "downsizing" of SSH in Horizon 2020. (2) To emphasise the need for specific topics and "Social Sciences and Humanities (SSH)-centred challenges" (EASH 2011) that serve the purpose of the SSH community. (3) To question the reasoning behind the societal challenges, pointing out the narrow definition of "innovation". (4) To highlight the importance of SSH research for Europe, and more specifically, for fulfilment of the successful solution of the Societal Challenges.

While this spray of arguments hardly represented a stringent lobbying campaign, it represented the various concerns and beliefs from within the wider SSH communities. The initiative was successful insofar as the Open Letter was signed by almost 26,000 people, and the EU research ministers were successfully mobilised to express their concerns "whether the role of social science and humanities will be adequately reflected in the tackling of the grand societal challenges" (Myklebust 2012). In response, the European Commission launched an information campaign on its own. The then Commissioner Máire Geoghegan-Quinn and the leading management of the Directorate General for Research and Innovation, headed by Robert Jan Smits, went long distances to present the Commission's ideas of Horizon 2020 to associations, learned societies, and so on. To alleviate the concerns expressed by the SSH communities, they settled on two arguments: one was that, in the so-called first pillar of Horizon 2020, SSH would be continued to be served by funding from the more academically driven instruments, such as the ERC and the Marie Skłodowska-Curie Actions; the second was that, in the second pillar dealing with "Grand Challenges", SSH would have to be meaningfully integrated.

In November 2011, Geoghegan-Quinn addressed the issue at a gathering at the British Academy. She reassured the participants "that future funding at the European level will provide significant space for social sciences and humanities research". This should be reached through adding another dedicated challenge, and through "embedding" the social sciences and humanities into all societal challenges "to work beyond the 'silos' of different disciplines" (Geoghegan-Quinn 2011b; see also Young 2015). In other words, the Commissioner accepted the instalment of an additional "challenge" which was perceived as the one dedicated to SSH. She also continued to argue for a broadening of the term "innovation" and emphasising the crucial role of SSH to the successful completion of all (now seven) challenges.

The strategy of the Commissioner – to embrace the critics – is understandable only if seen in the context. At that time, it was all but clear if the Horizon 2020 programme would stand the brisk austerity ambitions of European Union member states. Besides the fact that it was foreseen to substantially increase the budget for this programme, its creators perceived Horizon 2020 as "a clear departure from business as usual", as the Commissioner stated in an earlier speech (Geoghegan-Quinn 2011a). It is therefore tempting to assume that the Commission did not want to have additional political disturbances in getting their ambitious programme through. It aimed at not having to overthrow the conception behind the Horizon 2020 programme, and therefore remained conciliatory but firm.

This approach had several consequences that would dominate the second part of the discursive controversy, mostly constituted through reports and statements by interest groups (van den Doel 2012; Science Europe 2013): First, the overall structure of Horizon 2020 was not touched; instead, another challenge was added. The discussion now focused on how this new (additional) challenge should be named, and how much resources it would get. Second, it reluctantly broadened the notion of "innovation" that is the core of the Commission's political agenda (European Commission 2009; Paraskevopoulou 2012). The discussion focused on what "social innovation" actually should be, and whether this meant an "instrumentalisation" of SSH or its useful application. Third, it sought to encourage SSH researchers to think out of the box and to cooperate with colleagues from the natural sciences. Thus, the pros and cons of "interdisciplinarity" and "integration" were at the centre of the discussion, and how SSH would fare within the remaining six challenges.

This was also the context of the Vilnius Conference that marked the final phase of negotiating the structure of the Horizon 2020 programme and its underlying principles, and transferred the discussion into the operational details of Working Programmes, membership in Advisory Groups and so on. The conference in Vilnius under the Lithuanian Presidency in the second half of 2013 (Mayer, König, and Nowotny 2013) crystallised into an important one-time event in which the Commission would be able to show its good-will while members of the SSH communities could express their hope for a better future while venting their frustrations with the current setup.

RESULTS OF THE INTEGRATION EFFORTS UNDER HORIZON 2020

Overall, the efforts in the early years of the 2010s resulted in a good compromise. On the one hand, one Societal Challenge (SC) was dedicated, as in previous editions of the Framework Programme, to topics at the heart of research from social sciences and humanities (the so-called SC6, named "Inclusive, Innovative and Reflective Societies"). While there was less funding reserved for the SSH-labelled "challenge" than in the previous editions of the FP (in share),[14] at least the very issue has been successfully retained.[15] On the other hand, the idea of integrating SSH into other parts ("challenges") of the policy-oriented research funding part of the next edition of the FP allowed for some vague promise that some new forms of cooperative research might emerge.

The crucial question, of course, is how well this played out. The European Commission holds significant sway in the implementation of policies. There should be no doubt that, once formally put in the legal text of Horizon 2020 (European Parliament and Council of the European Union

14 For the numbers, see Schögler and König (2017).
15 For a reflection, see Reiter-Pázmándy (2017).

2013), the Commission – as the executive arm of the European Union – took the task of integration very seriously. SSH integration became one of several "cross-cutting issues" running across the entire FP. The Commission set up measures for better integrating SSH into the other six Societal Challenges as well as into other parts of Horizon 2020, meaning that its routines and procedures were amended in a way that funding calls could require participation of SSH partners. Such calls would be "flagged" and participation of one (or more) SSH partners would be rewarded through better evaluation scores.[16] The Commission's efforts also resulted in substantial annual analyses of the extent to which the integration exercise was successful (Hetel, Møller, and Stamm 2015; Birnbaum *et al*. 2017; Strom *et al*. 2018; Swinnen, Lemaire, and Kania 2019).

Given those efforts, it is therefore worth assessing briefly to what degree the Commission's efforts bore fruit. The Vilnius Declaration from 2013 (Mayer, König, and Nowotny 2013) defined four "conditions for the successful integration of Social Sciences and Humanities in Horizon 2020": "recognising knowledge diversity"; "collaborating effectively"; "fostering interdisciplinary training and research"; and "connecting social values and research evaluation". It is difficult to identify indicators for each of these conditions; however, some data can be gathered to assess the interim results. One indicator is the composition of the advisory boards established for each Societal Challenge (1). Another is the share of topics actually flagged for SSH integration (2), and yet another one concerns the actual overall distribution to SSH research (3).

To understand the significance and context of those indicators, it is important to briefly reiterate the processes from developing a funding call for research to the actual funding decision. Typically, within a so-called "Specific Programme" (which is in fact a sub-programme within the overall Framework Programme; hence the name of the latter), annual or bi-annual Work Programmes define the calls that will be announced. The Work Programmes themselves are drafted by the European Commission, based on input from the advisory groups consisting of experts in the field. The draft Work Programme is amended along input from the so-called Programme Committee, that is, a gathering of representatives from all EU member states (typically, those representatives are ministry officials).[17] Research proposals, submitted on funding calls, are evaluated along evaluation criteria by independent reviewers; the funding decision is then made by the respective Commission service tasked with carrying out the funding call.

(1) Advisory panels play a crucial role in the Societal Challenges of Horizon 2020 insofar as they consist of experts that suggest fields of research and therefore often help shaping the Work Programmes and funding calls. The advisory groups are put together by the Commission services and meet on average two to three times every year. The size of each panel varies, and in some groups there are not only individual experts but also public entities represented. While the mechanism of selecting members is not disclosed, and overall composition may change over the course of the edition of the FP, it seems clear that each group is expected to follow some basic rules concerning diversity in terms of gender, country of origin, and also disciplinary background (as seen relevant for the respective SC). The latter is interesting to our case; as can be seen from Figure 2, while each group holds at least one representative from SSH, the share is quite small, and, notably, consisting primarily of economists.

Group	Title	Experts	SSH representatives
E02942	Advisory group for Health, demographic change and wellbeing (SC1)	26	1 economist
E03279	Scientific Panel for Health (SPH)	25	2 economists
E02939	Advisory Group for Food Security, Sustainable Agriculture, Marine and Maritime Research and the Bioeconomy (SC2)	18	4 economists, 2 social scientists, 1 humanist
E02981	Advisory Group on Energy (SC3)	23	5 economists, 3 social scientists
E02969	Advisory Group for Smart, green and integrated transport (SC4)	23	2 economists, 1 social scientist
E02924	Advisory Group for Climate Action, Environment, Resource Efficiency and Raw Materials (SC5)	10	3 economists, 1 social scientist

Fig. 2: Analysis of Horizon 2020 advisory panels of six challenges[18]
(Put together by the author)

16 For details, see https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/ssh_en.htm (last accessed: 2019-03-01)

17 For a meticulous process overview and analysis of how work programmes are developed and adopted, see Schögler (2013, 74–106)

18 The groups have been identified through the "Register of Commission expert groups" http://ec.europa.eu/transparency/regexpert/ (last accessed: 2018-08-15). Societal Challenge 1 seems to have two bodies advising on the Work Programme. No entry could be found for Societal Challenge 7. The number of experts for each group refers exclusively to the "individual experts appointed in personal capacity".

(2) Flagging of topics is taking place during the process of writing the Work Programme. It is obviously an important prerequisite for actually integrating SSH research; hence the interesting question is, how many topics per SC have been flagged? The number of topics varies widely between the Societal Challenges, and also between years (Work Programmes), from 15 to 50. Between 2014 and 2017, the share of topics flagged for SSH integration has not been lower than 20 per cent, and not higher than 55 per cent. However, given that topics have different budgets available, it may be more interesting to look at the actual accumulated funding share flagged for SSH integration per SC, and therefore, essentially, available to SSH research. Based on the Commission's annual SSH integration reports, the data indicate that the share is different in each Societal Challenge programme, as depicted in Figure 3, and that there are substantial annual fluctuations. Put together, the share has improved over time, 36 per cent in 2014 (€ 902 Million out of € 2.515 Million) to 47 per cent in 2017 (€ 960 Million out of € 2.060 Million).

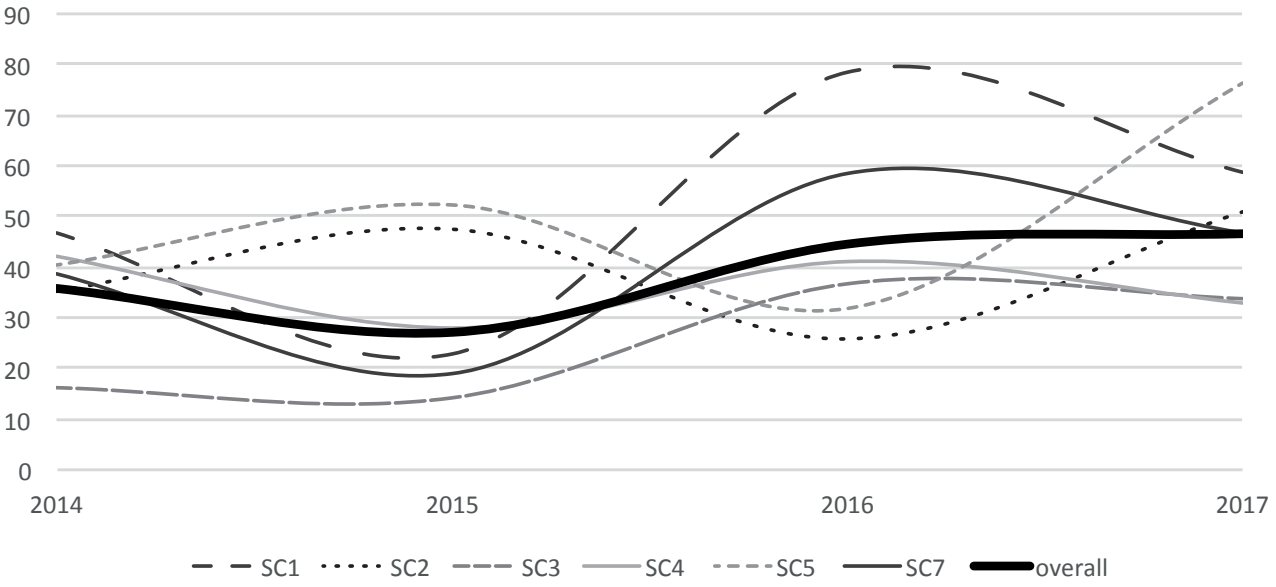

Fig. 3: Annual share of budget per Societal Challenge flagged for SSH integration[19]
(Put together by the author)

(3) While the previous paragraph was concerned with the question to what extent SSH integration has been enabled by applying the opportunity of "flagging" of specific topics (and, thereby, dedicated funding budgets), it is yet another story how much funding actually ended up in projects that had at least one SSH partner on board. To that end, the annual Commission reports have developed a useful composite indicator, which allows to better judge the actual SSH integration of each project. The indicator consists of four criteria: the share of SSH partners; the budget going to SSH; and the person-months by SSH partners all to be above the threshold of 10 per cent. In addition, the fourth criterion is about whether contributions in the project are coming from at least two SSH disciplines. A good integration of SSH is achieved when all four criteria are met; with three criteria met, it is "fair"; "weak" with two; and "none" with zero. According to the Commission's own assessment (the fine-tuned analysis on project level cannot be reproduced with the available data), the share of projects from within the flagged topics with good SSH integration has risen from 2014, with 40 per cent, to 56 per cent, in 2017 (Swinnen, Lemaire, and Kania 2019, 6–7).[20] However, 21 per cent have no SSH research component whatsoever.

19 Based on data in the annual SSH reports (Hetel, Møller, and Stamm 2015, 9; Birnbaum et al. 2017, 17; Strom et al. 2018, 15; Swinnen, Lemaire, and Kania 2019, 17). Numbers in this Figure, as well as in the corresponding paragraph, are solely on Societal Challenges 1-5 and 7. Societal Challenge 6 is not considered, because it is the designated "SSH" programme, and therefore not subject of the integration exercise. It should be added that, in terms of funding, SC6 is also by far the smallest programme of all Societal Challenges, with € 114 Million in 2014, € 127 Million in 2015, € 93 Million in 2016, and € 126 Million in 2017.

20 It is important to mention that, for the first three criteria of the composite indicator, the report actually defines two thresholds: one being 10 per cent, as mentioned above; the other being 20 per cent. If the latter threshold is applied, the share of projects achieving "good" SSH integration falls to 41 per cent. A methodological difficulty concerns the fact that the Commission also includes projects from the SC6 programme, which centre around SSH research by design.

Lessons to be learnt

What can we learn from these assessments? Certainly, the Commission has put a lot of efforts into enabling, and achieving, integration of SSH research into the SC programmes of Horizon 2020 (and this is in addition to the funding for SSH research provided through other instruments of this edition of the FP). On a practical level, it seems to have been executed in a rather mechanistic way. Given the immense apparatus that has been set up to assure that the money spent through the Framework Programme is legally, financially, and politically accountable and legitimate, this may not be surprising. In any case, it comes with the danger of reifying some of the traditional roles that SSH have been ascribed to – most notably the tendency of delegating the public relations aspects of a cooperative project to SSH partners.[21] As for the balance of SSH disciplines and fields, it is obvious not only that economics is much better represented in the advisory groups than the other social sciences, while humanities are barely in place at all, but also that the predominant share of funding from the SC programmes goes to social sciences, namely economics, political science, public administration and law, as well as education and communication. Together, these few fields accounted for 71 per cent of all funding going to SSH research partners in 2017 (Swinnen, Lemaire, and Kania 2019, 25).[22]

However, more substantial is the fact that the existing arrangement has mostly preserved from previous editions of the FP the overall funding that is actually going to SSH. Also, the discussion about integration of SSH has enabled important research projects that deal with the SSH at European (that is, transnational, comparative) level, providing thus much new insight and transnational expertise as well as networks in a field that is, by historical definition, rather drawn to the national context (an issue that will be discussed further in the next section).[23]

With the debate on the next edition of the FP, Horizon Europe, there is general agreement that integration is really taken from the heart, and considering all circles. This has also been emphasised by advisory documents, most notably the Lamy Report (Lamy *et al*. 2017). Another important aspect is that the representatives of the SSH communities by now seem to have more experience, in the sense that they now know better who the people are to address, know how the Framework Programme machinery is running in principle and thus have a better understanding when, and where, to intervene; and also know better how to argue with policy makers, shifting away from complaining to making constructive suggestions.

Most importantly, the efforts of learning from the past have come to fruition – among other initiatives, this holds true to the fact that there was another Conference (this time under the Austrian Presidency, in November 2018) dedicated to discussing the role of SSH in Horizon Europe,[24]in a reinvigorated joint platform (now slightly rebranded as EASSH),[25] and in the continued efforts by the network of National Contact Points Net4Society.[26] The importance of integrating SSH research has also been exemplarily been realised by other, more technology-focused funding instruments in the Horizon 2020 portfolio (see for example Langer *et al*. 2016) Important questions remain open, however. We do not know the amount of money that will be spent. Given the reluctance of national policy makers to spend more money at European level, and the fact that the pie will not grow substantially, powerful lobbies will do their best to increase their share, which will leave the SSH community in perils.

4. CHALLENGES IN SSH

Seen from a historical perspective, the social sciences and humanities are deeply entangled with the history of the nation state and its agencies, with modernity and its cultural achievements (Wittrock 2000; Porter and Ross 2003; Wagner 2007; Raphael 2012). As a group, social sciences and humanities have proven to be useful by providing techniques and concepts that help to analyse, understand, and impact the social world. With the professionalisation and extensive growth of scientific (and scholarly) institutions, disciplines associated with social sciences and humanities have always also been part of the academic pecking order – and have been drawn into, or taken aback from, being counted as a social scientific discipline, or a humanities discipline.

Along the same line, the history of social sciences and humanities is full of attempts to describe the relationship within their own epistemic communities, as well as their relationship to science, in terms such as "nomothetic" vs. "ideographic", "descriptive" vs. "analytical", two or three worlds, etc. (Kagan 2009; Sala 2013). Today, the umbrella term SSH has been established, but while this may (or may not) help to overcome infights between disciplines and schools, it also disguises the differences – and resulting from this, different challenges – that the numerous disciplines, fields and schools are facing underneath.

However: one challenge remains the same, and that is the fact that, today, social sciences and humanities are increasingly treated the same way the STEM fields are. That this is the case may be argued normatively (to treat all the same way), but it does not necessarily make sense in terms of efficiency – since the social sciences and humanities arguably have a more complex relationship to truth, power, and knowledge than their siblings from the sciences. It may well have been useful to find different regimes of funding for different purposes; but this does not easily comply with fairness, and audits. Interestingly, SSH are treated differently in some respects when it comes to curricula, and application of their methods, concepts, and theories. Save to assume, however, that two complementary forces were at work. Available funds, and attached reputation is an attraction. Representatives from the social sciences and humanities quickly felt the urge to participate. At the same time, it was more convenient for policy-makers to set up funding in a way that mimi-

21 It also continues to be in the mind-set even of those Commission officials that are sympathetic to the idea of SSH integration. For example, the second last assessment report states that "although research in technologies can provide technical solutions to major challenges, Social Sciences and Humanities (SSH) can help making them accepted, understood and appropriated by the general public." (Strom et al. 2018, 6)

22 Again, note that the Commission report includes projects from SC6, which cannot be subtracted out due to lack of data.

23 Those projects are ACCOMPLISH, DANDELION, and, as a COST action, one could add the ENRESSH network.

24 See the programme of the conference "Impact of Social Sciences and Humanities for a European Research Agenda – Valuation of SSH in mission-oriented research" under https://www.ssh-impact.eu/programme

25 See the website of the European Alliance for social Sciences and Humanities, https://www.eassh.eu

26 See the website https://www.net4society.eu

cked the established paths of sciences. The result is that social sciences and humanities have been increasingly caught up in receiving project-based funding.

This is often seen as a problem, and at the level of individual research questions, this might be justified. However, SSH research fundamentally shares the same values as research from other fields, that is, to produce robust knowledge and to enhance human kind; and that is also true when it comes to the social contributions of research. Given this fact, it may be well worth to reassess briefly existing, highly instructive and reflective literature on the nature of social sciences and humanities to give credit to the diversity of SSH. By doing so this section also aims at establishing an argument why and how this diversity can serve as strength, rather than a weakness, for cooperative research that is tasked to contribute to solving societal challenges.

Methods, terms, and concepts have permeated the academic world and changed the way people look at their lives, societies, and polities. From this point of view, social sciences and humanities have been spectacularly successful at least at two levels. One is, that these techniques have become standard requirements for civil servants as well as aspiring members of the elite. And that the knowledge produced by these techniques and theoretical presumptions is critical for states, for bureaucracies, to govern. Demography, for example, enables governments to assess their populace and to perform one of their most basic tasks, namely redistribution (Desrosières 1998). Wolfgang Streeck has recently renewed this argument, namely that "the descriptive analysis of social reality by counting, measuring, observing might be of significant practical and societal use" (Streeck 2011, 8).

Just like the natural and life sciences, as well as in engineering, the social sciences and humanities have considerably contributed to the ways we understand and look at our social world. If it is true that what the natural and life sciences and engineering have contributed to our modern societies has become invisible (Shapin 2016), this is even more true for the social sciences and the humanities, simply because they have a much closer and direct relationship to society (Felt 2000). Due to the thematic orientation of SSH on matters of social relevance, the boundaries between academia and the rest of the world is even more blurred, which is why the academic social sciences in particular have established a way of abstract theorising that is not only often hiding a banality, but is also perceived as hermetic.[27]

The current epistemological debates about social sciences and humanities cannot be addressed in full detail here. But it is possible to point to the following issues. As mentioned before, SSH deals with contextualised knowledge, and is not so much about discovering universal laws or functional analysis, but rather about "intentional explanation" (Elster 1983). Not only do social sciences and humanities have a "performativity" on society of their own (MacKenzie, Muniesa, and Siu 2008; Boltanski, Esquerre, and Muniesa 2015), they also are inseparable from political goals, and it is often difficult, albeit important as an exercise in self-reflection, to separate analysis from value judgment (Weber 1968; Ringer 1997). SSH play an important role in what can be called "new knowledge relations" within the scientific disciplines, that is between the SSH and technosciences, but also regarding the relation of traditional actors in the innovation chain and societal actors (Felt 2014, 394).

Another, final important observation from the field has been the dynamic within the social sciences and humanities towards "fractal distinction" (Abbott 2001, 2015). Because of its complexity, there is an inherent tendency within the fields analysing the social world (or one of its aspects) to create ever new approaches, questions, focal points. What may be called paradigmatic theory according to Thomas Kuhn (Kuhn 1970) is, in many branches of the social sciences and humanities, most often only short-lived and quickly disputed internally. Instead of being desperate about this, this should be taken as a feature and dealt with as such. It does not make sense to try to stylise SSH in the manner of other branches of the scientific enterprise, but rather embrace, acknowledge the above-mentioned specificities and build on that. Also, it is important to understand that despite the fact that SSH communities often resort on the lower end of the pecking order, SSH bring along expertise that is urgently needed specifically for the task of tackling societal challenges.

5. IMPACT RE-LOADED IN HORIZON EUROPE

Facing the overall ambition of Horizon Europe towards impact generation, an argument for stronger cooperation with and within SSH is made here to shift the focus away from marginalisation experiences and lament of the past. It was not by chance that the scope paper for the conference in 2018 was called "impact re-loaded" (König, Nowotny, and Schuch 2018). Similarly, the conference aimed at practical SSH Guidelines directed at those who deal with research funding programmes, and specifically programmes that aim at tackling a societal problem through the means and opportunities provided by scientific and scholarly research.

ABOUT THE SSH GUIDELINES

The conference and this Working Paper, together with the SSH Guidelines "Social Sciences and Humanities Research Matters. Guidelines on how to successfully design, and implement, mission-oriented research programmes" (König 2019), intend to build on this position, and to push further for more and better integration in Horizon Europe. This also means that there has to be a substantial understanding what SSH research is about, and how it is properly treated and valued. To do so, the SSH Guidelines concentrate entirely on mission-oriented research programmes. It distinguishes four steps in the life-cycle of such a programme, namely design, implementation, evaluation and decision-making; and it addresses all those persons who play a role in either of those steps.

The idea of the SSH Guidelines is to provide a comprehensive, quick-to-read set of arguments for why SSH should be central for mission-oriented research programmes, and how to value them properly at each of the steps of the programme's lifecycle. It provides a number of practical tips for bringing SSH-expertise to the design and implementation of R&I-programmes. It builds, and extends, the extremely useful leaflet produced by Net4Society that has a similar ambition, albeit it was directed at

27 This has been treated with scorn by many authors; exemplarily, see Billig (2013).

the integration of SSH under Horizon 2020.[28] Indeed, the SSH Guidelines intend to make sure the effectiveness of the idea behind the leaflet is taken on, and made use of, based on an elaborate consultation process, which started several months before the conference, resulting in a first draft version, which was then subject to further discussion, and scrutiny, at a specifically dedicated on drafting the SSH Guidelines. Two additional cycles of consultation with numerous experts resulted in the final version of the policy paper in mid-January 2019.[29]

SUGGESTIONS FOR SSH SCHOLARS

Complementary to the SSH Guidelines, this section is dedicated to some key suggestions for SSH scholars who set out to improve the depth and range of cooperation in the mission-oriented parts of Horizon Europe, as well as other research funding instruments at European, national, or local level. The SSH Guidelines define four specific strengths of SSH in designing research funding programmes:

- the expertise to calibrate missions
- the capacities of translating between academic disciplines, policy makers, and different publics
- the expertise in placing specific problems in broader contexts (combining local and global perspectives)
- and the capacity of methodological reflexivity.[30]

While these strengths aim at setting the tone for policy makers and managers, it also provides a good introduction to the concluding section of this Working Paper. It discusses some ideas for scholars and researchers from SSH communities in order to advance the role of SSH in Pillar 2 (with the title "Global Challenges and Industrial Competitiveness") of the next Framework Programme, as well as other (national) research funding programmes that are dedicated to fund mission-oriented research projects.

The most important, yet often overlooked aspect concerns the participation in the process of designing a research funding programme, or research funding instrument. As we have seen, the number of SSH scholars in the advisory boards of various Societal Challenges in Horizon 2020 has been low. This is a real problem: it is in this realm that the overall goals of the programme, or instrument, are defined; hence bringing SSH scholars to the table is crucial if interdisciplinary cooperation between SSH and STEM is really expected to lead to new, relevant knowledge.

Funding calls sometimes require SSH researchers to be creative and, when it comes to finding funding opportunities, to look at things differently. Three aspects should be emphasised here: One, it sometimes is worth to take the step and submit a proposal, even though this may appear to be risky. Along the same line, it is also important to be ready, and to muster capacity, to take over the consortium coordination, in order to stronger influence the tone for a project. On a related matter, it is crucial to ask for local support infrastructure. SSH sometimes have the disadvantage of not being supported the same way as their STEM colleagues are.

A PRACTICAL WAY FORWARD – FOR SCHOLARS AND POLICY MAKERS

As a practical next step, and taking up the many suggestions and ideas brought forward in various meetings such as the 2018 conference in Vienna, representatives of SSH research could set up meetings at national level with the respective Delegates in Programme Committees and National Contact Points (NCPs). As a pilot, such a meeting was organised in Austria in March 2019, with great success (see Annex). Despite those efforts, the necessary requirements to enable SSH scholars engaging in those two activities – designing funding calls and participating in project applications – are still far from being fully achieved. Yet by addressing the need and playing a more pro-active role, further improvement is to be expected, particularly given the positive developments at European level in preparation of "Horizon Europe".

28 https://www.net4society.eu/_media/170110_Factsheet_Expert%20meeting_INTEGRATION_def.pdf (last accessed: 2018-08-14) The afore-mentioned policy document by the FET Advisory Group also provides some important suggestions (Langer et al. 2016).

29 For feedback and comments during the productive consultation process, I am grateful to Paul Benneworth, Basudeb Chaudhuri, Alice Dijkstra, Martina Kadunc, Angela Liberatore, Gabi Lombardo, Stephanie Rammel, Angela Schindler-Daniels, Marc Vanholsbeeck, in addition to the colleagues already mentioned in footnote 1, as well as many others. The suggestions in the SSH Guidelines have been inspired by various documents that, in recent years, started to take a critical view on the metrics craze (Muller 2018), highlighting the "patina of precision" (Gingras 2016), the "different types of impact" (Reale et al. 2014) the "gatekeepers of high impact" (Hicks et al. 2015), the "ubiquity of excellence rhetoric" (Moore et al. 2017).

30 This section is partly quoted from the SSH Guidelines (König 2019).

ANNEX: SUMMARY OF MEETING "SOCIAL SCIENCES AND HUMANITIES IN HORIZON EUROPE"

(by Thomas König, Stephanie Rammel, Matthias Reiter-Pázmándy, Klaus Schuch, Johannes Starkbaum)

On Friday, March 8, the meeting "Social Sciences and Humanities in Horizon Europe" took place on the premises of the Institute for Advanced Studies (IHS), Vienna. It was a follow-up of the Austrian EU Presidency Conference "Impact of Social Sciences and Humanities for a European Research Agenda – Valuation of SSH in mission-oriented research",[31]which had taken place in Vienna on 28-29 November 2018. As the current EU Research Funding Programme, "Horizon 2020",[32] is coming to an end, and discussions for the next edition, called "Horizon Europe",[33] have intensified, there is the need and opportunity to engage policy makers and SSH representatives at the national level, in order to open up space for discussion on how to better involve SSH expertise in the drafting process of the thematic clusters of "Horizon Europe". The clusters are gathered under the paramount title "Global Challenges and Industrial Competitiveness".

The follow-up meeting was organised by Thomas König (IHS), Stephanie Rammel (FFG), Matthias Reiter-Pázmándy (BMBWF), and Klaus Schuch (ZSI). It brought together about fifty people – representatives from social sciences and humanities in Austria, National Contact Points (NCPs) for the different thematic areas as well as policy makers and ministry officials.

PURPOSE OF THE MEETING

The initiative to the meeting was driven by two insights. One is that, as Stephanie Rammel made clear in her presentation, integration of SSH into the thematic research funding instruments of the current "Horizon 2020" is an ambitious attempt, but still far from being satisfying. Another is that representatives from SSH repeatedly complained that they are not involved in the shaping, and designing, of funding calls and work programmes. Once the remit of a call is decided upon, it is difficult to bring specific SSH knowledge in – unless, maybe, as an add-on. Given the fact that the Framework Programmes have increasingly become also templates for research funding programmes in the member states, one cannot underestimate the role – both directly and indirectly – in shaping the status, and involvement, of SSH in European research funding generally.

The meeting kicked off with a keynote by Prof. Ulrike Felt who provided food for thought by talking about the role of SSH in coping with societal challenges. Other presentations were about providing key statistics on integration of SSH into the Clusters ("Societal Challenges") of "Horizon 2020", information on the state of negotiations regarding "Horizon Europe", and results from the November Conference. For the latter, Thomas König pointed towards the booklet "Social Sciences and Humanities Research Matters", a comprehensive set of guidelines addressing "research programmes that set out a specific goal to tackle a societal problem through the means and opportunities provided by scientific and scholarly research – both from SSH and STEM".[34] All presenters agreed that SSH should be further integrated in future EU research funding.

Interdisciplinary and especially SSH-aspects have to be contributed throughout the whole development of a framework programme, said Matthias Reiter-Pázmándy, from the initial negotiations, to the Strategic Planning and the yearly Work Programmes. Special attention has to be paid to include SSH-researchers in the various Advisory Groups, in particular in the Mission Boards, but also in the evaluation panels of "Horizon 2020" and "Horizon Europe". Researchers from SSH also should register to be available as evaluators in order to provide enough choice for those who convene the panels. In addition to that, it is important to provide fora, where researchers and policy makers can meet and exchange across the boundaries of disciplines and the various sectoral policy areas. This event did exactly that.

The key element of the meeting, however, concerned the remaining 90 minutes which provided space for discussion among participants. To that end, participants were seated on one of six tables, each of which was dedicated to one of the (prospective) thematic clusters in Horizon Europe.[35] The intention was to bring policy makers (the National Delegates to the specific programme committees in "Horizon 2020" and in the upcoming "Horizon Europe"), supporters (the NCPs) and SSH researchers together and discuss how to better take advantage of SSH expertise in designing and shaping the respective thematic cluster.

SUMMARY OF CLUSTER TABLES

Before a joint lunch buffet was served, the discussions were summarised and presented to the full audience, along two sets of questions:

a. In which of the cluster's topics is specific SSH expertise required?
b. What concrete measures can help Delegates and NCPs to facilitate integration of SSH in the cluster? Here are the summaries of each of the discussion tables:

HEALTH

a. All topics in this cluster are relevant for SSH expertise; much depends on the actual design. "Health systems" might be a focal point that works as a "catch all".
b. At EU level, more emphasis has to be on evaluation criteria, and

31 https://www.ssh-impact.eu
32 https://ec.europa.eu/programmes/horizon2020/en
33 https://ec.europa.eu/info/designing-next-research-and-innovation-framework-programme/what-shapes-next-framework-programme_en
34 https://www.ssh-impact.eu/guidelines-on-how-to-successfully-design-and-implement-mission-oriented-research-programmes
35 The seventh cluster, called "'Culture and Inclusive Society'", is dealing with SSH-specific topics, which is why it was not included.

the participant portal has to be made use of to identify potential partners. At Austrian level, thematic platforms should be made use of for cooperation (e.g., ÖPPM[36], Netzwerk Altern[37]), policy makers should be stronger advocates for SSH, and exchange at the level of the cluster should be intensified.

CIVIL SECURITY FOR SOCIETY

a. SSH is crucial for topics such as radicalisation, terrorism, prevention, and resilience.
b. Since topics are mostly identified by governments, SSH representatives should get in contact with NCPs and ministries. Also, with the national security research programme KIRAS,[38] there is already a national model available for integrating SSH.

DIGITAL, INDUSTRY AND SPACE

a. All topics were considered important for SSH expertise; this is particularly the case for AI, Big Data, Next Generation Internet, and Digital Skills.
b. The Evaluation process is critical, both in terms of skills of reviewers and the evaluation criteria, the same is true for the work programmes, and the deliverables in the grant agreement. In relation to the "digital skills" topic, a sort of "meta-SSH" was emphasised, acting as a support-mechanism for a number of different research projects and dealing with their social impact, assessing also discriminatory aspects, exclusion and fears.

CLIMATE AND ENERGY; MOBILITY

a. All topics across this cluster are relevant for SSH.
b. Evaluation has to be organised in an interdisciplinary manner; move away from techno-economic, sector-specific solutions, towards integrating behavioural insights and sociocultural practices. SSH can serve as guidance for sectoral policies to implement R&D-based solutions. Researchers and sectoral policy makers should step out of their bubbles and get together more often.

BIOECONOMY, FOOD, NATURAL RESOURCES & ENVIRONMENT

a. There are "areas of connectivity" ("bio economy", "food systems") and also areas that would require a stronger involvement of SSH (demand and supply problem in areas such as "environmental observation", "agriculture, forestry, and rural areas") – there are social impacts, conflict potentials, and more generally, a political economy to be analysed.
b. Technological "solutionism" approaches may not be enough;[39]real problem solving requires integration of SSH in problem framing and analysis. A more holistic approach from strategy to calls is required! This also implies a cultural change, i.e. in the language used to describe a problem.

NEXT STEPS

The meeting was an experiment insofar as nothing similar has ever happened. Albeit there was little time for an exhaustive exchange, debates were initiated and the meeting was thus widely seen as a great success. There may be three reasons for that. One is that mission-oriented research funding demands exchange of SSH representatives with policy makers in order to align calls, proposals and research towards missions. Another is that Austrian Delegates and NCPs have an interest in increasing the share of funding that flows from the EU level to Austria. So even if they represent clusters that traditionally stand for a more techno-science orientation, they share the core interest of SSH representatives. Finally, all this happens in the context of a more positive attitude towards SSH in general,[40] which provides the background for this initiative. Having said all this, there is still much to do, at national level as well as at European level.

AT NATIONAL LEVEL

One way forward would be for SSH experts, national delegates, and NCPs to meet regularly for further exchange. This would certainly support the uptake of SSH expertise on one hand, and awareness-raising and re-orientation on the side of SSH researchers on the other hand, which allows setting concrete action. It is now up to the respective Austrian institutes in their fields to take the lead and continue the work that was initiated in this meeting.

AT EUROPEAN LEVEL

It is important to highlight this meeting to SSH representatives in other EU member states, so that they can organise similar events. Also, a shared meeting in Brussels on presenting the SSH-Guidelines later in summer would provide a good opportunity to report about the progress made in Austria.

36 https://www.personalized-medicine.at
37 http://www.netzwerk-altern.at
38 https://www.kiras.at
39 Cf. E. Morozov, "To Save Everything, Click Here: Technology, Solutionism, and the Urge to Fix Problems that Don't Exist", London 2013)
40 See Lamy et al. (2017) as well as Mazzucato (2018).

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