UNIVERZA V LJUBLJANI

FAKULTETA ZA DRUŽBENE VEDE

Pika Založnik

Vloga družboslovnih ved v oživljanju javne sfere:

primer trajnostnega razvoja

The role of the social sciences in the revitalization of the public sphere:

the case of sustainable development

Doktorska disertacija

Ljubljana, 2014

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This would not have been possible without the support of my family, friends and colleagues, old and new.

Thank you for your advice and for being patient, understanding and above all, willing to lend me your ears.

E obrigada a todos pelo axé.

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SLOVENIAN SUMMARY

Vloga družboslovnih ved v oživljanju javne sfere: primer trajnostnega razvoja

Med mnogimi premisleki o normativnih vprašanjih o demokratični ureditvi družbe in kritikami sodobne družbe prepogosto manjka refleksija ali analiza vloge družboslovnih ved v javni sferi. V doktorski disertaciji sem raziskovala, kakšno vlogo naj bi družboslovne vede imele, kot tudi ali (in če, kako) prispevajo k izgradnji javne sfere ter prispevajo akterje in teme, ki so ključnega pomena za njeno oživitev. V empiričnem delu disertacije sem se osredotočila na ta vprašanja v primeru raziskovanja trajnostnega razvoja v Sloveniji.

Živahna javna sfera, v kateri se predlogi in preference o javnih problemih oblikujejo skozi inkluzivno in razumno javno razpravo ter usmerjajo procese odločanja, je osnova za legitimnost demokratičnega odločanja. Vendar ta normativni ideal ni dosegljiv. Z normativne pozicije tako postane ključno vprašanje, ali obstajajo določeni pogoji, zmogljivosti in možnosti za problematiziranje, interveniranje in spreminjanje ustaljenih načinov delovanja. V kontekstu sodobne javne sfere, ki je zamejena na reprezentacije v množičnih medijih, zreducirana na enosmerni tok informacij in ki jo dominirajo poklicni strokovnjaki, se odpira vprašanje, kakšno vlogo bi družboslovni znanstveniki morali in kakšno bi lahko igrali v javni sferi. Njihov prispevek je potrebno kritično preučiti, saj posedujejo moč, ki temelji na delitvi dela v družbi in asimetriji dostopa do informacij, kot tudi iz tega izhajajoč status in vpliv.

V teoretičnih poglavjih sem vzpostavila teoretični okvir o vlogi družboslovnih ved v javni sferi v normativnem smislu in predstavila njegovo izpeljavo, torej, kaj bi lahko bilo dosegljivo, kot tudi raziskala predpostavke in prakse, ki konstruirajo rastoči razkorak med znanstvenim in javnim znanjem.

Osredotočila sem se na različne načine razumevanja odnosa med javnim in znanstvenim znanjem; najprej na dela teoretikov javnosti in javne sfere in predstavila tiste redke primere, ki obravnavajo vlogo družboslovnih znanstvenikov: izmed klasičnih teorij javnosti avtorja Johna Deweyja (1920, 1927/1991, 1938) in Walterja Lippmanna (1921/2007, 1927/2009, 1955) ter izmed sodobnih teorij mediatizirane javne sfere avtorja Leona Mayhewa (1997) in Johna B. Thompsona (1995, 2005). Ti avtorji predstavljajo poglede na ta odnos v dveh različnih obdobjih kot tudi teoretizacijah javne sfere, vendar predstavljajo dva različna načina razumevanja vloge javnosti v političnem odločanju in posledično vloge znanosti: Dewey in Mayhew izhajata iz normativnih teorij demokracije in zagovarjata komunikativno delovanje javnosti kot osnovo koncepta demokracije; Lippmann in Thompson pa zavrneta normativne teorije kot nerealne in zreducirata javno na golo vidnost in s tem javno rabo uma na pretok informacij, ki ne izhaja iz komunikativne moči javnosti. V disertaciji predlagam izpeljavo normativne pozicije v skladu s pisanjem Deweyja, Mayhewa in Habermasa (1970, 1998a) z upoštevanjem delitve dela v družbi in v okviru znanstvene skupnosti. Potreben je večji obseg javnega angažiranja družboslovnih znanstvenikov, vendar morajo pri tem, ne glede na obseg ali način angažiranja, biti bolj refleksivni o svojem znanju, moči in statusu in vsaj upoštevati javne vrednote, interese in probleme.

V disertaciji se osredotočam tudi na drug vidik tega odnosa z vidika področij, ki raziskujejo znanost in tehnologijo, to je na znanstveno kulturo, še posebej v 20. in 21. stoletju, za katero je značilen razkorak med znanstvenim in javnim znanjem. Ta razkorak je prispeval k miselnosti, ki obravnava javno angažiranje kot nasprotje akademske profesionalnosti. Tukaj predstavim teoretični okvir za razumevanje tega razkoraka skozi

koncept procesov razmejevanja (Gieryn 1999, Halffman 2003), to je diskurzov in praks, ki konstruirajo razlikovanje med znanostjo in javnostjo in regulirajo angažiranje znanstvenikov v javni sferi. Te prakse je potrebno razumeti ne le kot namerne, reakcionarne ali občasne strategije, katerih namen je ohranjati znanstveno avtoriteto, ampak tudi kot rutinske, nereflektirane prakse, komuniciranje, sodelovanje in pogajanja.

Empirična analiza se osredotoča na dejanske prakse in kulturo slovenskih družboslovnih znanstvenikov in na nekatere kontekste, v katerih delujejo v primeru raziskovanja trajnostnega razvoja. Pri tem kompleksnem družbenem problemu postanejo razvidna vprašanja teorij demokracije, saj je sodelovanje javnosti videno kot ključno za doseganje trajnostnega razvoja, vendar iz različnih razlogov – po eni strani kot način pridobivanja podpore in za dolgoročne spremembe vedenja državljanov, po drugi strani pa kot način usmerjanja javnih politik v skladu z interesi in vrednotnimi orientacijami družbe. Analiza obsega analizo diskurza znanstvenih in medijskih tekstov slovenskih družboslovnih znanstvenikov in analizo prepisov poglobljenih intervjujev z njimi. Analiza diskurza se osredotoča na različne ravni njihovih konceptualizacij trajnostnega razvoja, še posebej na razumevanja vloge znanstvenikov in javnosti. Poglobljeni intervjuji so se osredotočali na njihovo razumevanje javnega angažiranja znanstvenikov ter na njihovo videnje odnosa med znanostjo, množičnimi mediji in znanstveno politiko.

Empirični del disertacije je razdeljen na štiri dele. Najprej je predstavljen koncept trajnostnega razvoja in njegovo prevladujoče razumevanje v slovenskem političnem in medijskem prostoru. Sledi analiza različnih konceptualizacij trajnostnega razvoja v pisanju slovenskih družboslovnih znanstvenikov, ki jih razvrstim v štiri skupine diskurzov: status quo, ekonomske reforme, reforme vrednot in transformativna. Razlike v konceptualizacijah odsevajo pozicioniranje različnih raziskovalnih področij kot avtoritativnih na področju trajnostnega razvoja.

Naslednje poglavje se osredotoča na različne vloge, ki si jih družboslovni znanstveniki pripisujejo, in njihovo motivacijo za javno angažiranje za dosego trajnostnega razvoja. Analiza je pokazala, da se razlike v razumevanju vloge znanstvenikov (prispevanje instrumentalnega ali refleksivnega znanja) ne odražajo v obsegu in načinu njihovega angažiranja, niti pri bolj ali manj vidnih oblikah angažiranja kot tudi ne pri angažiranju ob njihovem znanstvenem delu oziroma njegovem sestavnem delu. Razlogi za javno angažiranje so tudi do neke mere homogeni – ne temeljijo na instrumentalnih razlogih, temveč na njihovih osebnih inklinacijah in interesih ter so povezani z njihovim razumevanjem vloge znanstvenikov v družbi. Družbena relevantnost je tako pomembna ali celo neločljivo povezana z njihovim delom, vendar ne izhaja iz formulacije družbenih problemov v javnosti, temveč se oblikuje avtonomno znotraj znanstvene skupnosti.

V naslednjem delu sem se osredotočila na možnosti in omejitve za njihovo javno angažiranje, ki jih predstavljajo znanstvena politika in množični mediji. Pri znanstveni politiki sistem evalvacij v habilitacijskem postopku prispeva k negativni percepciji, da angažiranje ni cenjeno, poleg tega pa ta sistem omejuje čas in sredstva za tovrstne dejavnosti. Množični mediji tudi predstavljajo oviro za javno angažiranje, predvsem zaradi pomanjkanja interesa. Odnos znanstvenikov do medijskega poročanja je negativen in se nanaša na način delovanja sodobnih medijev (novičarske vrednote, senzacionalizem, populizem ipd.), vendar so njihove osebne izkušnje večinoma zadovoljive. Omejitve znanstvene politike in medijske prakse niso nepremostljive, vendar tudi niso stimulativne. Zaradi odvisnosti od evalvacijskega sistema, nezainteresiranosti medijev in manka spodbud znotraj znanstvene skupnosti je pri odnosu do javnega angažiranja občutna določena inercija.

S porastom izrazov, kot so participativna, državljanska, družbena in demokratična znanost, ki nakazujejo vzpon participativne paradigme v znanstveni politiki, je tako ključno vprašanje ne le ali se družboslovni znanstveniki angažirajo v javni sferi in z javnostjo, temveč kakšno razumevanje koncepta *javnega* to vključuje. Analiza se osredotoča na različna razumevanja odnosa med znanstvenim in javnim znanjem in posledično na razumevanja participacije javnosti in javnega angažiranja znanstvenikov. Na podlagi analize znanstvenega diskurza sem razpoznala tri načine razumevanja tega odnosa. Dva od teh (deficit javnosti in demokratizacija) temeljita na razmejitvi med javnim in znanstvenim znanjem, kjer prvi izključuje javno znanje iz procesov odločanja in razume participacijo javnosti kot zgolj instrumentalno; drugi razume participacijo javnosti kot bistveno v političnih procesih in s tem tudi vključevanje javnega znanja, vendar le kot komplementa znanstvenemu znanju. Tretji, kritični pristop ne sloni na razmejevanju med znanstvenim in javnim znanjem ali med dejstvi in vrednotami. Procesi političnega odločanja tako potrebujejo prispevek vseh, kritični pristop, izpostavljanje in kritično refleksijo (prikritih) interesov, predpostavk in vrednot ter iskanje (novih) skupnih rešitev.

Kljub prisotnosti kritičnega pristopa v pisanju slovenskih družboslovnih znanstvenikov je razmejevanje med znanstvenim in javnim znanjem dominantno, pristop, ki (slab) odnos vidi predvsem kot posledico deficita javnosti, pa predstavlja polovico vzorca. Ti procesi razmejevanja so povezani z njihovim razumevanjem vloge znanstvenikov v trajnostnem razvoju – večji razkorak je značilen za tiste, ki vlogo znanstvenikov vidijo kot prispevanje instrumentalnega znanja, in manjši pri tistih, ki jo vidijo kot prispevanje refleksivnega znanja, kjer je vprašanje vrednot videno kot ključno za razreševanje javnih problemov – in do neke mere z razumevanjem vloge svojega raziskovalnega področja.

Procesi razmejevanja so razvidni tudi pri njihovem razumevanju primernega javnega angažiranja – javno angažiranje ni v nasprotju z znanstveno avtoriteto ali profesionalnostjo, vendar ti dve značilnosti predstavljata pogoj za primerno angažiranje. V tem vidiku je njihovo razumevanje precej homogeno; ključna razlika, ki izvira iz različnega razumevanja odnosa med javnim in znanstvenim znanjem, je v njihovem razumevanju komuniciranja znanosti – pri večjem razkoraku je komuniciranje znanosti razumljeno kot zgolj poenostavljanje in kot linearno, enosmerno komuniciranje.

V kontekstu družbene delitve dela lahko ugotovitve o pozitivnem odnosu do javnega angažiranja in motivaciji znanstvenikov na podlagi družbene relevantnosti razumemo kot vzpodbudne, vendar je dominacija razmejevanja med javnim in znanstvenim znanjem problematična. Če znanstveniki ne vključijo v svoje delo ali vsaj priznajo razumevanj družbenih problemov znotraj javnosti, njihovo javno angažiranje lahko zameji ali zaduši javno razpravo ne glede na njihove namere. Poleg tega lahko s svojim javnim angažiranjem zamejijo ali celo preprečijo konstrukcijo skupnega razumevanja določenega družbenega problema. S procesi razmejevanje *de facto* javnosti odrekajo legitimnost in sposobnost kolektivnega in samostojnega izražanja in je potemtakem ne interpelirajo.

Ključne besede: javnost, družboslovne znanosti, procesi razmejevanja, znanstvena kultura, trajnostni razvoj

ENGLISH SUMMARY

The role of the social sciences in the revitalization of the public sphere: the case of sustainable development

Despite copious reflections on the normative issues of the democratic organization of society and critiques of contemporary public life, there is a noticeable shortage of reflection or analysis of the role of the social sciences in the public sphere. In my doctoral thesis I explore what the role of the social sciences should be as well as whether and if, how, they contribute to building the public sphere and contribute actors and issues that are critical for its vibrancy. In the empirical part of my thesis I focused in specifically on this issue in the case of research on sustainable development in Slovenia.

A vibrant public sphere, in which the proposals and preferences dealing with public issues are formed through inclusive and reasonable public debate and are able to steer the decision-making process, is the source of legitimacy for political decisions. Yet, this normative ideal is counterfactual. In a sociological translation the crucial issue becomes whether certain conditions, capacities and opportunities exist for problematizing, intervening and changing the routine mode of decision-making. With the public sphere being confined to representations in the mass media and reduced to a one-way flow of information, dominated by professional specialists, the question becomes what role social scientists should and could play in the public sphere. Their contribution needs to be critically examined, as they hold power that is based on the division of labor in society and the asymmetry of access to information, as well as the subsequent status and influence they are conferred on this basis.

In the theoretical chapters I establish a theoretical framework about the role of the social sciences in the public sphere in a normative sense and provide a sociological translation of what could be attainable, as well as explore the assumptions and practices involved in the construction of the growing gap between scientific and public knowledge, from which I interpret and assess the findings of the empirical chapters.

I delve into different ways of understanding the relationship between public and scientific knowledge; firstly into the work of theorists of the public and of the public sphere and present the rare cases among them which consider the role of the social scientists: among the classical theories of the public John Dewey (1920, 1927/1991, 1938) and Walter Lippmann (1921/2007, 1927/2009, 1955) and among the modern theories on the mediatized public sphere Leon Mayhew (1997) and John B. Thompson (1995, 2005). They represent views on this relationship in two distinct eras as well as theorizations of the public (sphere), yet represent two different ways of understanding the role of the public in political decision-making and consequently the role of science: Dewey and Mayhew on the basis of normative theories of democracy argue for communicative action of the public as the basis of the concept of democracy; Lippmann and Thompson cast normative theories aside and reduce publicity to bare visibility, diminishing the public use of reason to a flow of information, not grounded in the communicative power of the public. I propose a translation in line with the writings of Dewey, Mayhew and Habermas (1970, 1998a), taking into account the division of labor in society and within the scientific community and argue for greater public engagement of scientists, yet regardless of the scope or type of engagement scientists should be more reflexive about their knowledge, power and status and at least take into account public values, interests and problems.

From the vantage point of fields researching science and technology I focus on the other side of this relationship – scientific culture, especially in the 20th and 21st century, for which the expanding gap between scientific and public knowledge has become definitive and has given rise to an ideology that has opposed public engagement to academic professionalism. Here I present the theoretical framework for understanding the construction of this demarcation through the concept of boundary work (Gieryn 1999, Halffman 2003), that is, the discourses and practices that construct a distinction between science and the public and regulate the engagement of scientists in the public sphere. These practices need to be understood as more than intentional, reactionary or episodic strategies aimed at securing scientific authority, that is, as including routine, unreflected practices, communication, cooperation and negotiation.

The empirical analysis focuses on the actual practices and culture(s) of Slovenian social scientists and some of the contexts of their work, rather than on effects, in the case of research on sustainable development. In the case of this complex social problem traditional questions of theories of democracy come into sharper relief as public participation is viewed as central to sustainable development, yet for different reasons – on the one hand as a way of gaining support for long-term changes in behavior, and on the other as a way of rooting public policy in the interests and value orientations of society. The analysis encompasses the analysis of discourse in the scientists' scientific and media texts and of the transcripts of in-depth interviews with them. The discourse analysis focuses on different levels of their conceptualizations of sustainable development, especially on the roles of scientists and the public. The in-depth interviews focus on their motivations for and understanding of public engagement and the relationship between science, the media and science policy.

The empirical part of the thesis is structured into four chapters. I first introduce the concept of sustainable development and the prevailing understanding of it in the Slovenian political and media sphere. I then analyze the different conceptualizations of sustainable development in the writings of Slovenian social scientists and determine four patterns of discourse: status quo, economic reform, values reform and transformative. The patterns relate to the positioning of different fields of research as epistemic authorities on sustainable development.

The next chapter establishes the different roles social scientists envision for themselves and the basis for their motivations for public engagement in relation to sustainable development. The analysis shows that the differences in understanding of the role of scientists as providers of instrumental or reflexive knowledge is not reflected in the scope and type of their engagement, including more or less visible forms of engagement, outside or as part of their scientific work. There is also a certain homogeneity regarding their motivations for public engagement, which are not based on instrumental reasons, but rather on their personal inclinations and interests and relate to their understanding of the role of scientists in society. Social relevance is therefore important or even inherent to their work, yet it does not follow from the formulations of social problems in the public itself, but is designated autonomously within the scientific community.

Next I focus on the possibilities and limitations for their public engagement presented by science policy and the mass media. With regards to science policy, the system of evaluation in the habilitation process contributes to the negative perception that engagement is not valued, moreover it limits the time and resources for such activities. Similarly, the mass media represent a barrier for public engagement due to their lack of interest. The scientists' perception of media reporting is negative and relates to the mode of

operation of contemporary media (the understanding of newsworthiness, increase in sensationalism, populism etc.), yet their own experiences are mostly satisfactory. The limitations of science policy and media practices are not insurmountable, but are also not stimulative. The dependency on the evaluation system, the disinterest of the media and the lack of encouragement within the scientific community result in a certain level of inertia regarding engagement.

With the rise of buzzwords such as participatory, social, civic, public and democratic science, which indicate the rise of a participatory paradigm in science policy, the key question is not only whether social scientists are indeed publicly engaged but also what notion of *public* it involves. The analysis focuses on the different understandings of the relationship between scientific and public knowledge which has consequences for the understanding of public participation and the nature of the scientists' public engagement.

On the basis of the analysis of scientific discourse three different ways of understanding this relationship were discerned. Two of them (the deficit and democratization approach) are based on the demarcation between public and scientific knowledge, where the first excludes public knowledge from decision-making and views public participation in an instrumental manner; the second sees public participation as intrinsic to the political process and acknowledges public knowledge, yet only as complementary to scientific knowledge. The third, critical approach does not uphold the boundary between them – both are not beyond contestation. The decision-making process thus needs the contribution of all, a critical approach, the bringing up and critical reflection of issues of (veiled) conflicts of interest, assumptions and values and finding (new) common solutions.

Despite the presence of the critical approach in the writings of Slovenian social scientists, the notion of demarcation between scientific and public knowledge is dominant and the deficit understanding represents half of the sample. The analysis shows that the scientists' boundary work is related to the role they advocate for scientists in sustainable development more generally – greater demarcation of those providing instrumental knowledge and less so with those providing reflexive knowledge, who see the question of values as intrinsic to the resolution of public problems – and to some extent the role they assign to their respective fields in particular.

The scientists' boundary work is discerned also in their understanding of proper public engagement, which is more homogeneous – public engagement is not seen as conflicting with scientific authority or professionalism, but these two characteristics represent the conditions for worthy engagement. The main difference in relation to boundary work lies in the nature of communication – greater demarcation relates to science communication as a form of simplification and as a linear, one-way model of communication.

While the positive attitudes towards public engagement and the motivations based on social relevance can be seen as encouraging in the context of the societal division of labor, the domination of demarcation in the scientists' discourse is problematic. Their notion of social relevance does not follow from the formulations of social problems in the public. By not incorporating or even acknowledging the public's understandings of public problems into their work, their engagement can serve to constrict public debate despite their best intentions. Moreover, by constraining the agenda they could limit or even work against the construction of a common understanding of a certain problem. Through their boundary work

they are *de facto* denying the legitimacy and ability of the public to collectively and independently express itself, and thus failing to interpellate the public.

Key words: public, social sciences, boundary work, scientific culture, sustainable development

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1 INTRODUCTION

The concept of the public sphere has in a very short time, since the publication of the English translation in 1989 of the book *The Structural Transformation of the Public Sphere*, written by Jürgen Habermas, established itself as a "commonly recognizable part of the theoretical arsenal" of the contemporary social sciences (Pinter 2005, 10). Despite copious reflections on the normative issues of the democratic organization of society and critiques of contemporary public life, there is a noticeable shortage of reflection or analysis of the role of the social sciences in the public sphere. In my doctoral thesis, I explore what the role of the social sciences should be as well as whether and if, how, they contribute to building the public sphere and contribute actors and issues that are critical for its vibrancy. In the empirical part of my thesis I focused in specifically on this issue in the case of sustainable development.

According to theories of democracy, which address the public sphere from a normative standpoint, the public sphere is the domain of social life between the state and civil society, in which citizens without the coercion of political and economic forces deal with matters of general interest, formulate political preferences, arguments and proposals, and draw attention to social problems. Communication in the public sphere is considered as public expression, which is deliberate, reasonable and based on rational argumentation (Habermas 1962/1989, 1996, Bohman and Rehg 1997; Bohman 1999, Dryzek 2000). Only a vibrant public sphere, in which the proposals and preferences dealing with public issues are formed on this basis and are able to steer the decision-making process can instill legitimacy in political decisions.

This ideal notion of the public sphere is counterfactual, that is, in practice it is necessary to uncouple (to some degree) the issues of legitimacy and democratic participation (Eder 2006, 610). Due to the sheer size of the community, an even greater societal complexity, scientific and technological development, differences in the conceptualizations of the good life, etc. these conditions cannot be met. This does not mean, though, that the ideal should be cast aside – the public sphere plays an important role as a "distinctly theoretical category, often appearing as some sort of

ideal and not just descriptive construct, through which the literature of the social sciences critically judges the relationships between social communication and democratic politics" (Pinter 2005, 9). Due to its counterfactuality certain so-called sociological translations need to be made for the concept to be an effective guideline.

Because of the unavoidable complexity of modern societies, political processes cannot "remain anchored in the informal streams of communication emerging from public spheres" (Habermas 1998a, 171). Political processes therefore generally follow a routine mode of operation and are not directed by the communication flow emanating from the public sphere. While from a purely normative standpoint, this mode of operation is illegitimate, it represents the standard of modern democracies. The crucial issue then becomes whether certain conditions and opportunities for problematizing and changing this routine mode of operation exist. Not only in times of crisis, when political protests can ratchet up enough power, but that there are a possibility and capacity within the public sphere for intervening in and guiding the political process (Habermas 1998a, 357, 358).

Other conceptualizations of the public sphere, that is sociological analyses, conclude that the actual state of the public sphere in postmodern society does not follow even this conceded normative position (Zolo 1992, Thompson 1993, Mayhew 1997). The independent formation and functioning of the public sphere is inhibited by administrative and business logic, which has confined the space for deliberation in the public sphere to representations in the mass media. This, mediatized public sphere does not improve on the situation for public debate, because the public use of reason, that is constitutive for the public, is reduced to a one-way flow of information, dominated by professional specialists, whose main role is manufacturing the consent of citizen (Mayhew 1997, 4,6). Public communication thus loses its political function in steering the decision-making process (McLuskie 2003, 31) and does not provide a basis for public life, as the commodification and professionalization of communication inhibits the construction of the *"*politically socializing *communicative context"* in which the public sphere is based (Habermas 1998b**,** 159).

The publicist function of public communication often receives more consideration in sociological analyses, on the one hand because the possibilities and especially the limitations for its enactment are substantive and measurable, and on the other hand due to the focus on the effectiveness of publics in steering decision-making. Yet the second function of public communication – "the self-referential character of the practice of communication" (Habermas 1998a, 369) – is equally, if not more, important as it provides the basis for a vibrant public sphere. The public sphere is in essence "only" a social space in which publics can act, "its infrastructure" (Splichal 2011, 67) and as such "is not enough for the public to identify itself, form and act" (Pinter 2005, 26). For a vibrant public sphere, the "far-flung network of sensors" needs to have a "specific set of capabilities" to perceive, identify and problematize latent problems (Habermas 1998a, 300, 358), for publics to be able to recognize and actualize themselves.

In the state of affairs in postmodern democracies where communication within the public sphere is primarily guided by the interests of the powerful, the realization of a vibrant public sphere faces many obstacles. The issue at hand, in this thesis, is the role of the social sciences in helping overcome them and in creating (new) conditions and spaces for articulation and deliberation.

Regardless of the different lines of thought and conceptualizations, the role of social scientists in the public sphere, its formation and their influence on public opinion has hardly received any attention. University professors of the 19th and (early) 20th century often became the leading public opinion leaders, yet in theorizations on the public sphere they are rarely denoted as a relevant "element" (Splichal 2011, 122). The focus of much of the theories of the public sphere or more generally democratic theory has been on greater inclusivity, which means that on the one hand, under the condition of equality of participation, many were indifferent towards scientists, or on the other hand, were critical of the dominance that follows from experts' status and the naturalization of their discourse (Marx Ferree et al. 2002).

It is exactly for this reason that the role of social scientists should be considered, as they hold power that is based on the division of labor in society and the

asymmetry of access to information, as well as the subsequent status and influence they are conferred on this basis. The social sciences could play their part through research and education as well as contribute to public knowledge and understanding of contemporary society by communicating in the mediatized public sphere, providing actors and topics and thereby inform the debate concerning public problems. In view of the domination of the public sphere by political and economic actors, social scientists could contribute considerably not only by providing information, but also furthering the publics' understanding of the implicit assumptions, values and visions of these key actors (Macnaghten et al. 2005). An important role of the social sciences is also their contribution to the reflexivity of the public sphere itself, that is, by critically elucidating self-evident social values, political processes and institutions, and contributing to the consideration of new modes of conduct in cases of conflict, difference and exclusion.

While this account posited the potential of the social sciences, their actual contribution falls short. The development of science in the 20th century, its remarkable growth and specialization gave rise to an ideology that opposed public engagement to academic professionalism and thus contained the communication of scientists inside the academic sphere (Calhoun 2009). Due to their rapid growth, the sciences have developed into rather self-referential, "autopoietic" systems, organized in such a way so as to reinforce the relations and processes that had generated them (Splichal 2011, 124).

Despite calls for the "democratization" of science the scientific (and political) sphere have often considered the role of the public sphere *post festum*: their inclusion takes place in the "third act", concerning their support or opposition and not in earlier stages. Participation is mostly understood in a very restricted sense (Lele 1991, Irwin 1995, Walker 2007) and involves mainly "top-down" communication of science, teaching and persuasion (Burgess and Harrison 1998, Davies 2002, Irwin 2008). Participatory activities are often restricted in advance, as they do not allow for the (opening and) problematization of broader structural questions, the framing of the problem itself and interpellate the individual into the role of user, consumer or stakeholder.

More recently the question of the public role of the social sciences has come to the fore, based on the (normative) questions about the state of the public sphere, yet driven by a rethinking of the self-perception of scientists, their role and the role of the university in the face of the neoliberal incursion into the university. This resurgence of what Splichal (2011, 125) calls the *publicness frame* can be seen as a response to the ascendance of science as a *financial good* as opposed to science as a *public good* (Pestre 2005, 29). Neoliberal discourse has seeped into discussions on the university, defining the public role of the university and of the scientists as stemming from the source of funding and not from a conception of the public good, essentially commodifying knowledge. In contrast, the publicness frame, represented in the calls for public social science (e.g. Clawson et al. 2007, Burawoy 2007; Calhoun, 2009; etc.), defines the public role of (in this case) the social sciences in the Enlightenment tradition, which postulates an educated citizenry as a necessity for democracy. This understanding of the public role, in contrast to the economic framing, means that the focus is not on direct effects, but the role of the scientists in "the building of individual and collective capacity with open-ended long term potential" (Marginson, 2006: 54).

Michael Burawoy, who sparked the discussion with a speech on the renewal of the role of public sociology as the (then) president of the American Sociological Association, sees the role of public social science in alleviating a crucial problem of society today – that the publics are in flux or disappearing altogether (2007, 29). Public social sciences, he argues, should not only intervene by engaging, helping rebuild and transform publics, but also participate in their creation. The crucial role that social scientists (or in his case sociologists) should play is that of catalysts of public debates (Burawoy 2011).

While these calls to action are clearly based on normative ideas, they reflect the state of science by dividing scientific labor into four categories: public, professional, policy and critical social science. This categorization (and inherent juxtaposition) is useful for gaining greater acceptance of public science within social scientific disciplines as well as in framing the conversation about the role of science, but it has its drawbacks. On the one hand the classification is based on a vague meaning of what is meant by *public*, and on the other hand it does not consider the

impact of the public activities of other categories of scientific labor. With the rise of buzzwords such as participatory, civil, social, civic, public and democratic science, which indicate the rise of a participatory paradigm in science policy, the key question is not only whether social scientists are indeed engaging in public social science but also what notion of *public* it involves.

The central aim of my thesis was to come to an understanding of the role of the social sciences in the public sphere – what it should and could be. The objective of the theoretical chapters was to establish a theoretical framework about the role of the social sciences in the public sphere in a normative sense and provide a sociological translation of what could be attainable, as well as explore the assumptions and practices involved in the construction of the growing gap between scientific and public knowledge, from which to interpret and assess the findings of the empirical chapters.

The first two chapters review the theoretical contributions on the relationship between (social) science and the public from different fields of research. Chapter 2 delves into the work of theorists of the public and of the public sphere, which present the views on this relationship in two distinct eras. Moreover, they also serve as elucidation of the normative framework which informed the empirical research. In this chapter I considered the rare cases among the theories of the public and the public sphere which consider the role of the social scientists: among the classical theories of the public John Dewey and Walter Lippmann and among the modern theories on the mediatized public sphere Leon Mayhew and John B. Thompson. Chapter 3 focuses on the research of the relationship between science and the public sphere in the more recently developed scientific fields devoted to researching science and technology. Here the focus is on scientific cultures and boundary work, that is, the discourses and practices that construct a distinction between science and the public and regulate the engagement of scientists in the public sphere.

Whether we deem that public engagement of social scientists results in the greater vibrancy of the public sphere at one level or another, rests on our conception of

success. Success (or lack thereof) can be gauged in quite substantive terms, if we regard engagement as a means of informing, gaining attention for public issues or affecting the agenda of the mass media. It is inconceivable, though, to measure and estimate success in the less visible or tacit effects of the self-referential dimension of public communication – for example, shifts in understanding, the forming of publics, changes in political culture, etc. – as well as, perhaps more importantly, the potentially negative effects of public engagement.

The empirical research presented in this thesis therefore does not focus on effects, but rather on the actual practices and culture(s) of Slovenian social scientists as well as some of the contexts of their work. By scientific culture I am referring to the set of values, practices and behaviors that inform the work of scientists. Although C.P. Snow (1959/2012) wrote the following about the culture of the natural and technical sciences[1], it is general in nature:

> *the scientific culture really is a culture, not only in an intellectual but also in an anthropological sense. That is, its members need not […] always completely understand each other […] but there are common attitudes, common standards and patterns of behaviour, common approaches and assumptions (9),*

where by scientific culture he does not mean a unitary one, but that there are "sub-division[s] after sub-division[s]" (ibid., 66) within it.

The goal of this thesis therefore was to gain a greater understanding of the engagement of Slovenian social scientists in the public sphere as well as their relationship towards the public and is centered on the following research questions:

1. Are Slovenian social scientists publicly engaged and if so, in what ways do they engage?

2. What are the possibilities and limitations to their public engagement posed by the mass media and science policy in relation to scientific culture?

[1] In *The Two Cultures* he wrote about the different cultures of science and the "literary intellectuals" and in an addendum in 1963 wrote that he was "slow to observe the development of […] something like a third culture" – the "mixed bag" of the social sciences (70).

3. How do they see their role as scientists in relation to public issues and in relation to the public? What motivates them to engage?

4. What is their understanding of the relationship between scientific and public knowledge and their ensuing view of public participation in decision-making processes?

In the empirical part of my doctoral thesis I answer these questions in the case of research on sustainable development. The case of sustainable development is fitting for several reasons. The goal of sustainable development is an example of a new postmodern social problem; as a complex of the "unintended consequences" of global technological, economic, political and cultural development (Beck et al. 2003, 2) it is not bounded spatially, temporally or causally, and thus less identifiable and controllable (Beck 2002, 4). The changing relationships between science, expertise and the public in democratic societies in the case of such social problems raise the question of promoting the participation of all those who are significantly and/or in the long-term affected by the consequences of the actions of others, whom citizens can not directly influence.

International policy documents portray public participation as an essential part of sustainable development. On the one hand, it is important in itself – as an integral part of the pillar of social development. On the other hand, their participation is deemed necessary, because achieving sustainable development requires a radical change in attitude towards the environment, social equity and political power. Here traditional questions of theories of democracy come into sharper relief as some view public participation as a way of gaining support for long-term changes in behavior, and others as a way of rooting public policy in the interests and value orientations of society.

In my thesis I mainly follow the transdisciplinary field of Science and Technology Studies (STS)[2] that is distinguished by its social constructivist epistemological position and relativistic ontological position. One general point that characterizes STS research is the understanding that knowledge is co-constructed - i.e. "contingent, situated, contextualised, and open to different framings and perspectives" (Irwin 2008, 586; Jasanoff 2004). In terms of methodology, STS research tends to "follow the actors" (Irwin 2008, 584) and use qualitative and anti-essentialist methods of research. In terms of axiology I do not follow the majority of STS research that displays some "aversion to normative judgments" about their findings on underlying assumptions and inherent power relations (Fuller 2000). I base my critical approach on the normative understandings of democratic theory as well as on the more critical perspectives in STS research. My critical approach is also driven by my own activism against austerity and the commercialization of public universities in Slovenia within the movement Free University (Svobodna univerza), which in current circumstances is primarily targeted at decision-makers, but has since its inception revealed the lack of academic community in Slovenia as well as a low level of engagement, mutual understanding and reflexivity on the part of scientists, which was especially disappointing in the case of social scientists.

This thesis uses the method of discourse analysis. Here and otherwise I do not ascribe to a specific "school" of discourse analysis; rather I view it in a broader sense, as close readings of the texts, in this case scientific and media texts and interview transcripts, with a focus on the production of meaning through the texts and the inscription of a specific way of understanding through discourse (Tonkiss 2004, 373).

Due to the differences and changes in the institutionalization and specialization of the social sciences, political regulation and decision-making about science funding in different societies, scientific culture should be considered within a specific time-frame and national context. The same goes for the conceptualizations of sustainable development which are embedded also in specific social contexts. Whereas the

[2] By "Science and Technology Studies" I mean the particular school of thought under this name, which follows David Bloor's "strong programme of sociology of knowledge" (1976), not the aggregate term referencing all the fields, in which science and technology are the object of research.

analyzed scientific texts were published over a span of over 15 years, the interviews were conducted in May and June 2013. The whirlwind of events in Slovenian society in the year prior to the interviews, especially the growing financial crisis, public spending cuts and large public protests in the winter of 2012 and spring of 2013, have had an impact on the approach to the analysis of the accrued data.

On the one hand, the public protests have brought into sharp relief the dissatisfaction, as well as anger, of the citizenry with their exclusion from political decision-making at different levels. Many initiatives rose up in this time, championing local, direct democracy and models of self-governance. Parts of the scientific community participated in these continuing actions in a more or less active role. On the other hand, the impact of public spending cuts has impacted the scientific community in different ways. The effects of the cuts in university (lump sum) funding and research funding can vary greatly, depending on the financial status of the particular faculty or institute, the structure of their work, i.e. ratio of teaching and researching etc.

How these circumstances may or may not have impacted the scientists is difficult to gauge and is unfortunately outside of the scope of this dissertation[3]. Besides these circumstances the triangulation of data is narrowed due to, on the one hand, a difference in focus – the analysis of the texts dealt with their understanding of the role of the public in sustainable development and the interviews more on their perception of their own role in the public sphere (as well as of other scientists). On the other hand, these two forms of discourse were actualized in different contexts and with different constraints - the codes of scientific writing, especially depersonalization, in contrast to a dialogue about their personal views and attitudes. Also triangulation could only be achieved in those cases, where the scientists responded and were willing to participate in the interviews. This also means that the interview sample could be skewed - those who responded could be more inclined to participate in other activities.

[3] This thesis also does not focus on the temporal dimension; on the one hand, there are great differences in the timelines of the scientists' writing, on the other hand sizeable differences were not observed during the analysis.

The empirical part of the thesis is structured into four chapters: chapter 4 introduces the concept of sustainable development and the prevailing understanding of it in the Slovenian political and media sphere. In this context it then delves into the different understandings of it in the writings of Slovenian social scientists and the ascertained four patterns of discourse. It ends by relating the patterns of discourse to the positioning of different fields of research as epistemic authorities on sustainable development.

Chapter 5 establishes the different roles social scientists envision for themselves in relation to sustainable development. Irrespective of their roles as public, policy, professional or critical scientists it presents the scope of their engagement, including more or less visible forms of engagement in which they participate outside of or as part of their scientific work. It further delves into their motivations or lack thereof for public engagement and the meaning of engagement for them personally and in relation to their role as scientists.

Chapter 6 is devoted to determining the possibilities and limitations for the public engagement of social scientists imposed by two factors extrinsic to their scientific work. First, it presents the effects of the perceived stance of the university and scientific community on their public engagement and focuses on the effects of the aspect of science policy they perceive as having the most impact – the means and rules of evaluation of their work in the habilitation process. Secondly, it presents the scientists' perception of the relationship between social scientists and the media and relates it to their media presence in relation to sustainable development.

Chapter 7 centers on the possibilities and limitations to public engagement that are intrinsic to the scientists' work, that is, their different understandings of the relationship between scientific and public knowledge. While these different understandings construct boundaries between science and the public, the nature of these distinctions can also be found in how they define proper ways of engaging publicly. This chapter ends by presenting the differences in discourse between scientific and media texts, focusing on the one hand on this distinction in their register

and on the other hand on how sustainable development and the role of the public within it is framed.

2 THE ROLE OF THE SOCIAL SCIENCES IN THEORIES OF THE PUBLIC SPHERE

Regardless of the different lines of thought and conceptualizations throughout different theories of the public and the public sphere, the role of (social) scientists in the public sphere, its formation and their influence on public opinion has hardly received any attention. With the ascendance of the concept of the public sphere as an arena of discursive interaction the focus of theories of the public sphere shifted from the question of the formation of publics to ascertaining the conditions that would constitute and underwrite an ideal public sphere.

In order to reclaim the ideal of the public sphere as a space for unrestricted rational discussion devoid of the influences of power many public sphere theorists insisted that "inequalities of status were to be bracketed, and discussants were to deliberate as peers" (Fraser 1992, 113). In their review of traditions of democratic theory, Marx Ferree et al. (2002) designated four traditions according to their criteria for "good democratic public discourse" (316), only one of which – representative liberal theory - explicitly values the inclusion of experts and elites over the inclusion of the public, whose role is designated mainly in the role of occasional voting (ibid., 291). The rest – participatory liberal, discursive and constructionist theory - do not see a specific role for experts, "as long as their participation does not displace that of ordinary individuals", or indeed suspect it of doing so (ibid. 317).

This shift from publics to the public sphere and the bracketing of status as a prerequisite in normative understandings of the public sphere can be seen as the main reason for the lack of discussion on the role of social scientists. In this chapter I explore how the social sciences and their role in public life were considered in these (albeit rare) cases, as well as some cases where their role is not discussed specifically, but give an insight into the possibilities and limitations of doing so. I consider among the classical theories of the public the writings of John Dewey and Walter Lippmann and among the modern theories on the mediatized public sphere the writings of Leon Mayhew and John B. Thompson. Despite belonging to two different eras of history as well as of theorizations of the public (sphere) they represent two different ways of

understanding the role of the public in political decision-making and consequently the role of science. Moreover, they also serve as an elucidation of the normative framework which informed the empirical research in this thesis.

2.1 CLASSICAL THEORIES OF THE PUBLIC: JOHN DEWEY AND WALTER LIPPMANN

John Dewey was one of the first to consider the influence and importance of social science for the public sphere (Bohman 1999, 188). Like his contemporary, Walter Lippmann, he expressed his faith in "the use of knowledge in order to achieve human progress and in the 'scientific-utopian' vision of a new development stage of society" (Splichal 1997, 159). Most writings on John Dewey and Walter Lippmann focus on the key differences between their "solutions" to the basic problems of democratic theory (Splichal 1999, 11). Because of these fundamental differences between their theories, some similarities or parallels tend to fall by the wayside. Although when looking at the books of Walter Lippmann[4] and John Dewey[5] in tandem many of Dewey's assertions seem to be a direct answer or critique of Lippmann's writing, direct attribution could be an overstatement.

2.1.1 The dissolution of the public in a transformed society

Both authors conceptualized the processes of the formation of the public in relation to public issues and therefore did not define the public as a static and monolithic social category. Lippmann defines public affairs as: "[T]hose features of the world outside which have to do with the behavior of other human beings, in so far as that behavior crosses ours, is dependent upon us" (PO, 15); and the public, "a phantom", not as fixed body of individuals, but "merely those persons who are interested in an affair and can

[4] Lippmann's book *Public opinion* (1921/2007) shall be from here on designated as "PO"; his book *The Phantom Public* (1927/2009) as "PhP".
[5] Dewey's book *The public and its problems* (1927/1991) shall from here on be designated as "PP".

affect it only by supporting or opposing the actors" (PhP, 68). Membership is therefore not fixed and is changing according to the issue at hand (PhP, 100).

Dewey similarly distinguishes between public and private in whether actions and their consequences affect others than those directly engaged or immediately concerned, yet stresses that there is no clear distinction between them and can also be disputed (PP, 12, 64). When these consequences are perceived and thereby become a public issue, the need to control these actions systematically brings about a public, which consists of those affected. Publics also in his conceptualization therefore are not static entities or necessarily long-term associations, but form somewhat fleetingly in relation to public problems.

In his writings Dewey subsumes the public under *the state*, which some interpret as a divergence from the usual positioning of the public as separate from it. Yet, I would argue against this understanding. For one, he clearly distinguishes the concept of the state from governments. Second of all, his understanding is akin to a social contract – where the normative basis for the creation of a state is presented; this normative (counterfactual) conception "gives a criterion" upon which a state could be judged on whether the government is in fact constituted by the officers of the public, who "perform their function of caring for public interests" (PP, 27, 33).

What they designate as a public, though, they both write, is inexistent or unsuccessful in coalescing – Dewey sees the public in eclipse, Lippmann sees it as an ineffective phantom. The reasons for the dissolution of the public for both lie in the rapid changes in society; with the development of industry and technology the "modes of associated behavior" had changed significantly and consequently the quantity, character, place of the impact of its consequences (PP, 30). For both the transformation into an industrial urban society seemed very complicated – not only in terms of complexity and intricacy (PP, 132), but also in the elimination of spatial and time boundedness of actions, due to furious growth: "The world that we have to deal with politically is out of reach, out of sight, out of mind. It has to be explored, reported, and imagined" (PO, 15). The rapid industrialization in the late 19th and early 20th century (in the United States) also resulted in a "social revolution" – the rapid

urbanization brought about, in Dewey's words, "a new age of human relations" (PP, 98). This (technical) complexity and relative unboundedness in terms of space, time and social relations for both presented a major challenge to the public (Brown 2009, 139) - both saw the lack of knowledge about public affairs as the central problem of the public, yet differed in how to overcome this problem.

In Lippmann's view these changes brought about a significant change in how individuals thought about the world and their subsequent behavior – it was no more based on "direct and certain knowledge", but on a pseudo-environment, i.e. on pictures in their heads, indirect and inferred preconceptions of unseen phenomena (PO, 13, 14). The world was no longer observable and access to the facts was limited on the one hand by external factors – especially by censorship and distortion of the news (because of economic interests), as well as the changes in social relations which limited social contact chiefly to a "social set" - those in the same class (PO, 21, 31). On the other hand, he presented the limitations of the individual, who has a lack of time, interest, and even when engaged, the perception of messages from the outside are guided and filtered by their preconceptions and prejudices, especially to avoid cognitive dissonance (PO, 15, 30; Splichal 1999):

> *we define first and then see. […] we pick out what our culture has already defined for us, and we tend to perceive that which we have picked out in the form stereotyped for us by our culture. (PO, 31)*

In contrast to Lippmann, who views, in the case of the public, knowledge about the world and the public problems within it in relation to the individual, Dewey approaches it in a collective sense. The problem of the public is foremost in it achieving "recognition of itself" (PP, 77). Because of the complexity of the indirect consequences, coupled with the dissolution of community life, the issues that call a public into existence, although certainly felt, are difficult to perceive; without this kind of common interest the public is left bewildered and confused and, most importantly, scattered (PP, 116, 121, 131):

> *The ramification of the issues before the public is so wide and intricate, the technical matters involved are so many and so shifting that the public cannot for*

> *any length of time identify and hold itself. […] There is too much public, a public too diffused and scattered and too intricate in composition. And there are too many publics […] each one of them crosses the others […] with little to hold these different publics together in an integrated whole. (PP, 137)*

It is not particularly the consequences themselves that cannot be perceived, but the *commonality* of the issues they are dealing with – on the one hand, the multiplicity of issues breeds multiple publics that do not coalesce, but overwhelm; on the other, issues brought up (in the news and in politics) are "artificially" raised in order to "work up factitious excitement" (PP, 123, 9, 137). Lippmann, who was much more explicitly critical of this, wrote similarly:

> *Politics is interesting when there is a fight, or as we say, an issue. And in order to make politics popular, issues have to be found, even when in truth and justice, there are none, -none, in the sense that the differences of judgment, or principle, or fact, do not call for the enlistment of pugnacity. (PO, 56)*

Similarly to Lippmann, Dewey also noted that the lack of knowledge of the public is due to the enormous increase in the amount of knowledge in general, coupled with even more careless reports, various motives for misrepresentation, emotional partisanship and the lack of transparency of the workings of government (PP, 169). On the level of the individual he also agreed that knowledge is not merely a mirror of the observed, but understood it in a universal sense, not just in relation to the public – that knowledge forms in relation to "emotional and intellectual habitudes", that is, "habits acquired under the influence of the culture and institutions of society", and is therefore not just a consequence of lack of knowledge or experience, but a characteristic of all perception (PP, 169, 29, 158).

As regards knowledge and the public, though, the lack of knowledge on an individual level is not such an issue for Dewey, in contrast to Lippmann. Lippmann sees the fall of the public in the absence of self-sufficient, omnicompetent citizens (PO, 75, 87), where the bar is set very high – for the public to be able to participate, individuals should have an opinion on everything (PO, 15,122).

There is no prospect, in any time which we can conceive, that the whole invisible environment will be clear to all men that they will spontaneously arrive at sound public opinions on the whole business of government. (PO, 99)

Dewey opposes quite vehemently to the individualizing of the citizen as the basis of the state: "it presented the spectacle of the pulverizing of established associations into the desires and intensions of atomic individuals" (PP, 101). The omnicompetent individual for him is an "illusion" - knowledge is a function of association and communication (PP, 158).

This difference can also be seen in their recounting of previous community life, in which the basis of public life for Lippmann rests on knowledge based on direct experience and an assumption of “a homogeneous code of morals" (PO, 88) and for Dewey the meaning of community rests in communication between citizens. The only way to regain the public, for Dewey, therefore, is to enable the public to “define and express its interests” through communication and therefore recognize itself (PP, 146). In order to achieve this there needs to be an "improvement of the methods and conditions of debate, discussion and persuasion" (PP, 208).

The question of the individualization of the members of the public also brings Dewey and Lippmann at an impasse. For Lippmann the forming of a “common will” is illusory because, due to the lack of knowledge, “self-centered opinion” that does not reach beyond locality guides public opinion instead of common interest (PO, 98). For him the public is by definition unable of reaching a common will – citizens are either disinterested or their interest indicates a particular interest (PO, 111). Dewey, on the other hand, sharply criticizes the pulverization of society “into an aggregate of unrelated wants and wills”, calling it “intellectual laziness” and sees the goal rather than an aggregation, as forming a “common or mutually understood meaning” and “sense of a shared interest” (PP, 21,2, 153).

2.1.2 The role of the public in decision-making

Despite somewhat similar accounts on what a public is and the general reasons for why it is in eclipse, their faith on whether these obstacles can be surmounted differ greatly and consequently so do their views on the role on the public in political decision-making. Dewey advocated the communicative action of the public as a key concept of democracy and as the source of legitimacy in political decision-making. Unlike Dewey, Lippmann saw the solution to the problem of democracy in the reliance on the rule of a "qualified minority" that would make rational decisions on the basis of reliable information of independent experts, where the impact of the public would be limited to supporting or opposing political actors (Splichal 1997, 160).

For Lippmann the basis for excluding the public from everything but occasional voting is in the complexity of public affairs. The role of public opinion lies only in "praise or blame, a following or a boycotting" (PhP, 45), because citizens are not able choose between what is true and what is false and cannot rely on authoritative persons, they are manipulated by the party machine and publicity men of the government and industry (PO, 73, 81, 97). The knowledge needed for successful governing is lacking not only in the public, but also in the case of so-called insiders, i.e. politicians and officials. The governing class also makes decisions that are not based on analysis or investigations, but irresponsibly based on private ambitions, patronage and pork, as well as on the basis of secret information (PO, 93, 98)

Because both the public and politicians are inadequate he advocates for "independent, expert organizations", which would provide reliable information about the world (PO, 15; Splichal 1997). It is important to note, that he does not advocate for technocratic rule, i.e. he does not impart on the experts the role of governing. A technocratic model presupposes "a continuum of rationality in the treatment of technical and practical problems" – where the presumption is that all (political) decisions can be legitimated through reason (Habermas, 1970, 63, 64). Lippmann's theory in Habermas' typology falls under the decisionistic model that is based on the

separation of the functions of politicians and experts – a separation between questions of values, goals and needs and objective and technical knowledge (ibid. 63, 6).

Influenced by Lippmann, Dewey, besides his normative account of democracy, acknowledged the poor state of American democracy in his "sociological translation". They shared a quite similar account of the disappointing state of democracy at the time, Dewey also acknowledged that there is, due to this state of affairs, a rising appreciation for the need of expert administrators (PP, 135), but unlike Lippmann, he does not give up on the public.

Dewey's solution for dealing with, on the one hand the complexities of large scale democracies and on the other the technical nature of some of the operations of governing is in a, what Habermas (1998a) would later term as a two-track model of democracy. When the government is working more or less in the public interest the public indeed does not need to form. And when this is not the case a new public should form and change this mode of operation. The public forming in the face of public issues is for Dewey the basis for legitimacy; whether this could or would indeed happen is a question that he asks himself:

> *Is the public a myth? Or does it come into being only in periods of marked social transition when crucial alternative issues stand out, such as that between throwing one's lot in with the conservation of established institutions or with forwarding new tendencies? (PP, 123)*

Yet the public is lost and inchoate and consequently without communicative power. The citizens are removed far away from the government and the void left is filled by "bosses with their political machines"; all the "non-political matters" - the technical issues of governing – are directed by "trained specialists" (PP, 120, 123).

For Dewey "the cure for the ailments of democracy is more democracy", that is, the interest of the public should represent the "supreme guide and criterion of governmental activity" (PP, 146), but instead politics is guided by "[T]he ease of routine, the difficulty of ascertaining public needs, the intensity of the glare which attends the seat of the mighty, desire for immediate and visible results" (PP, 81). In

order for these existing structures to be transformed the public needs form and guide it.

The main difference between Lippmann and Dewey here stems from their different ascription of the source of legitimacy for democracy: Dewey stresses the origins of legitimacy in the communicative power of the public, no matter the results; democracy for him is "primarily an *ethical way of life*" (Bernstein 2010, 291). Lippmann, on the other hand, stresses the origin of legitimacy in the processes and results (PO, 99). He talks about the public in terms of (lack of) effectiveness, of not being able to "successfully intervene" (PhP, 93) and criticizes the assumption of democratic theorists that with the right source of power everything else will turn out for the best:

> *The democratic fallacy has been its preoccupation with the origin of government rather than with the processes and results. The democrat has always assumed that if political power could be derived in the right way, it would be beneficent. […] For no matter how power originates, the crucial interest is in how power is exercised. (PO, 99)*

This stems from the difference in approach that both point out, Lippmann in relation to theories of democracy, Dewey perhaps directly in relation to Lippmann's writings – that the difference lies in the point of departure – between "what the state *ought* to be or what it *is*" (PP, 9). Because Lippmann's starting point is what it *is*, he argues for a decisionistic model of democracy with an either-or fallacy. The democratic ideal for him is based on and only possible in a world where the causes and effects of actions are in the same space that citizens inhabit. For him, this ideal is impractical and should be cast away. Therefore, in this changed world and the dismal state of affairs in relation to news and politics, there are, for him, only two other options - tyranny or expertocracy:

> *There are but two other alternatives. One is government by terror and obedience, the other is government based on such a highly developed system of information, analysis, and self-consciousness (PO, 93)*

Dewey, in contrast, starts from a normative position, with the *ought*, and knows that the ideal cannot be satisfied, but should be pursued by using the ideal as a measure against which to gauge the state of democracy. In what could be seen as a direct response to Lippmann, he wrote: "All intelligent political criticism is comparative. It deals not with the all-or-none situations, but with practical alternatives" (PP, 110).

Differences in their accounts also lie in their different epistemological and ontological positions which very much impact the way they view the role of the public and the social sciences. Whereas they agree on the problem of the public and the importance of social research to mend this, the difference lies in whether they deem the public able to revitalize itself and whether an active public would be able to enter the decision-making process. Here lies the central question of the role of public participation in political decision-making: is the result of inclusive deliberation a better decision than one brought about by experts (Splichal 1997, 160). While Dewey advocates for a renewal of a more participatory democracy with the public guiding decisions, Lippmann sees the role of the citizens limited to voting. His opposition to more inclusion and engagement is based on another either-or fallacy: on the one hand, his view is that decision-making should be based on “the truth” and on the other hand, that the position of the democratic theorists is that the truth can be achieved through a "competition of opinions, [where] the truest will win" (PO, 100). This view, in turn, saw democracy as “*merely* majority rule” and not as reaching a common understanding through deliberation (PP, 207; Honneth and Farrell 1998).

Whereas Dewey in his writings dealt with the question of the conditions under which the public could become autonomous and efficient, especially through education (Cochran 2010), Lippmann cynically rejected the possibility of renewing the foundations of participatory democracy. For him, the public is not able to decide on all issues, all they can decide on is the result of the decision-making process and on the procedure that brought it about[6] (PO, 122). While in *The Phantom Public* he is more inclined towards the intervention of the public on political issues at critical junctures,

[6] Some elements of this procedure that should be gauged by the public flies in contrast to the overall statement that Lippmann is making in *Public opinion* – he writes that the public should judge “whether the relevant facts were duly considered” and “judge whether *the groups interested in the decision* were properly heard” (PO, 122; emphasis added). Who the interested groups here are, is not clear.

he bemoans the fact, perhaps in relation to the decision of the United States to enter WWI, that in the hardest controversies with complex and lacking information, with novelty and confusion, the decision eventually falls on the public, that is, on the influence of public opinion, "which meddle[s] ignorantly or tyrannically" (PhP, 121, 60). That is to say, these cases are not the only where the public tries to intervene, but where public opinion has succeeded in swaying public policy.

In contrast to Lippmann, Dewey does not exclude the public even when it comes to technical issues - he deems that independent expertise is possible only when the direction of society has been determined:

> *On the practical side, or among persons directly occupied with management of practical affairs, it is commonly assumed that the problems which exist are already definite in their main features. When this assumption is made, it follows that the business of inquiry is but to ascertain the best method of solving them. (Dewey 1938, 493)*

Science does not determine the ends; if so, it could be producing "instrumentally efficient answers to the wrong problems" (Brown 2009, 154).

2.1.3 The enlightening role of social scientists and experts

Despite their different views on the ability of the public of making decisions, both acknowledged social science research and education as the possible way to develop the circumstances which would enable the perception, identification and problematization of the consequences of human action.

To some extent the perception of the consequences of human action is hindered by the characteristics of the consequences themselves. The public is not able to perceive or even understand them. Into this gap created by uncertainty enters the political machine and the economy with their publicity men. The press, which should fill this void, is in Lippmann's view not able to furnish the amount of knowledge

needed (PO, 112), as well as is mostly used as a vehicle for "selling" the news and not communicating "the truth" (Splichal 1999). Dewey concurs that with the growth of knowledge there has been a greater increase of errors, careless reports, half-truths and misrepresentations (PP, 162).

In this context Lippmann sees the role of science or of experts in elucidating the facts, yet primarily for decision-makers, not the public itself. Although he wrote the public off to a large extent, his writing does indicate that the role of science is also in elucidating public issues and rationalizing public opinion. The function of truth is to bring to light hidden facts and make a picture of reality (PO, 111). The role of social scientists in serving the public is thus to formulate public opinions *for* the press: "Only when somebody objects does the public know there is a problem" (PhP, 94).

For Lippmann it is also important to encourage reflexive and critical thinking that detects propaganda, stereotypes and one's own subjectivity. In this context, those with moral codes or philosophies of life that are influenced by science, see different conceptions as hypotheses, not as "fiction accepted without question" (PO, 44).

> *It is only when we are in the habit of recognizing our opinions as partial experience seen through stereotypes that we become truly tolerant of an opponent. […] For while men are willing to admit that there are two sides to a 'question', they do not believe that there are two sides to what they regard as a 'fact'. (PO, 45)*

Although teaching cannot fully prepare for this new complex world, teachers could at least teach "a pattern of thought and feeling which will enable the citizen to approach a new problem in some useful fashion" – the habit of critical appraisal, awareness of stereotypes and introspection (PhP, 17; PO, 124).

> *The only prospect which is not visionary is that each of us in his own sphere will act more and more on a realistic picture of the invisible world, and that we shall develop more and more men who are expert in keeping these pictures realistic. (PO, 99)*

The only way the relevant environment can be known is through disentangling ideas and scrutinizing every aspect, therefore, for Lippmann the value of education rests on the production and evolution of scientific knowledge.

While Lippmann had great faith in the scientific method and the use of reason, his regard for the state of modern science was quite low (Goodwin 1995, 321). He wrote that the social sciences were not called upon to inform those that govern because they had “few victories to exhibit” and consequently little inner certainty. In contrast to the natural sciences there is no “grand system” constituted by linear correlations, but a myriad of dependent variables whose relationships are constantly impacted by changes in society (PhP, 78-81).

Public problems were becoming too hard to grasp, even for scholars who devoted years to studying certain phenomena (PO, 53). Besides the complex environment, scientists also had to grapple with the fact that they were not “insiders” which for Lippmann meant they had to rely on (meager) second-hand accounts and data as well as were limited to working *ex post facto* instead of supplying the information to form the basis of political decisions.

The only way scientists could contribute to the way society is governed is by convincing themselves and decision-makers that they can produce the knowledge and instruments needed to make the world intelligible, while keeping a distance from the decision-making itself. In order to do that, they need to work out their method. On the one hand Lippmann argued for greater professionalization – as he pointed out, the data are collected spasmodically and unsupervised out of a mass of unrelated materials, only some social phenomena are researched, instruments are crude and concepts “often vague and uncriticized” (PO, 115, 121). On the other hand, he called for more administrative/policy research. Scientists should not be "academic in the bad sense of that fine word", that is, as outsiders guess the outcome or be apologists or critics after the fact (PO, 115, 16). It is the experts, not the scholars that are "true pioneers of a new social science" (PO, 116); the ones to formulate public problems and inform decisions ahead of time. Their role with regards to the public in providing

general information and as a “check on the daily press” is secondary; their “real use” is in aiding the government and administration (PO, 122).

Whereas current discourse does not differentiate (much) between "experts" and "scientists" and "scholars" (as sometimes social scientists and humanists are differentiated from the rest), in Dewey's and Lippmann’s work it does make a crucial difference. The positive role above is in Lippmann’s writing devoted to experts and "political scientists" as those doing administrative or policy science in contrast to scholars or "political philosophers". Dewey points out that it is a false choice – dividing the two infers that "political scientists" in contrast to "political philosophers" deal with "facts verifiably ascertained" and not “uncontrolled speculation” (PP, 7):

> *One way out […] is to consign the whole matter of meaning and interpretation to political philosophy as distinguished from political science. Then it can be pointed out that futile speculation is a companion of all philosophy. The moral is to drop all doctrines of this kind overboard, and stick to facts verifiably ascertained. (PP, 6)*

This division may be "simple and attractive", but false: "[P]olitical facts are not outside human desire and judgment" and "cannot be got rid of by any methodology" (PP, 6, 7). By making this distinction and advancing a decisionistic model over a technocratic one Lippmann effectively purifies expertise from all values and interests.

In contrast to Lippmann, Dewey sees the main role of science in the public. Knowledge and insight for him represent “the prime condition of a democratically organized public” – as the basis of truly *public* opinion, not opinions casually formed or directed by someone who has a stake (PP, 166, 177). In order to come closer to this ideal, the scientific community needs to develop autonomously and distribute its conclusions freely (PP, 166), that is, represent to the people social phenomena, traditions and institutions in all of their consequences. On the one hand, as Lippmann, Dewey sees the need for the further development of the social sciences in order to become "effective and organized inquiry" and provide “systematic, thorough, and well-equipped search and record" (PP, 177, 179).

On the other hand, the findings should be available to decision makers – that is the basis of "genuinely public policy" – and, more importantly, publicized through the press (PP, 167, 179, 218). Inquiry, education and full publicity need to replace censorship, bias and prejudice, as well as plain ignorance. Its key role is also to critically elucidate social phenomena, processes and institutions and thereby improve democratic culture. Education and communication are the cornerstones of the transfer and development of democratic habits of association and habits of the mind such as the "[F]aculties of effectual observation, reflection and desire" (PP, 158).

Similar to Lippmann's division into insiders and outsiders, Dewey wrote that without close contact with the studied events and phenomena the ideas of scientists can become "inept" and remove themselves from application to "refuge in academic specialism" (PP, 167,8). He decried the division, specialization and subsequent isolation between different fields and, in a different sense, the constructed division between pure and applied science and the subsequent purification and glorification of pure science:

> *Since 'application' signifies recognized bearing upon human experience and well-being, honor of what is 'pure' and contempt for what is 'applied' has for its outcome a science which is remote and technical, communicable only to specialists […] What is applied and employed as the alternative to knowledge in regulation of society is ignorance, prejudice, class interest and accident. (PP, 174)*

Knowledge for Dewey is not the result just of scientific endeavor – science becomes knowledge only through application, "when it is published, shared, socially acceptable" (PP, 174,6) as well as tested in the public. Science for him is sequestered in "sterile and impotent" channels of communication between scientists (PP, 194), which not only impacts the public access to their findings but also the knowledge itself:

> *The isolation of thinking from confrontation with facts encourages that kind of observation which merely accumulates brute facts, which occupies itself laboriously with mere details, but never inquires into their meaning and consequences. (Dewey 1920, 141)*

Besides communicating their findings, scientists also need to be engaged outside of the ivory tower to become sensitive to the needs and experiences of the public. This is one of the shortcomings that Dewey sees in the realists' idea of expertocracy – the "high-brow" specialized class of *experts* becomes isolated from the public and is thus guided only by their private interests instead of the needs of the public (PP, 206, 7):

> *But these persons represent a social division of labor; and their specialization can be trusted only when such persons are in unobstructed co-operation with other social occupations, sensitive to others' problems and transmitting results to them for wider application in action. When this social relationship of persons particularly engaged in carrying on the enterprise of knowing is forgotten and the class becomes isolated, inquiry loses stimulus and purpose. It degenerates into sterile specialization, a kind of intellectual busy work carried on by socially absent-minded men. (Dewey 1920, 147)*

Both Lippmann and Dewey emphasized the importance of the autonomy of social inquiry and the need to move towards more rigorous empirical research, but in contact with different research subjects and serving different primary purposes. In the case of Lippmann, scientists needed to step out of their libraries and get accurate and first-hand data from decision-makers; for Dewey scientists should not be cut off from the community which they serve.

With both decrying the state of the press, they are not clear on how actually scientists could communicate with the public and otherwise contribute to the conditions for the revitalization of the public. Some insight can be surmised from their actions, e.g. Dewey tried, with his colleagues, to start publishing *Thought News*, a newspaper which would deal with the news in a more integrated in-depth way, a more long-term context and report also on questions of science (Pinter 2003). Lippmann, on the other hand, was not "just" a journalist, but a "quintessential insider" (Goodwin 1995, 334) who tried to bring the knowledge of the social sciences to decision-makers – e.g. during WWI he ran "The inquiry", an organization of over a hundred scientists

that was tasked with coming up with the "facts and opinions" needed for a peaceful settlement (Eulau 1954, 94-5).

2.1.4 Epistemological differences and the role of scientists

The main difference between Dewey and Lippmann stems from their different epistemological positions, which is especially pertinent with regard to the different positions on the knowledge of the public in relation to the knowledge of scientists. Briefly, Dewey stressed that the meaning of facts is not independent of even the researcher, that the world outside and the images within are created by the individual; Lippmann conversely understood that "[R]ationally, the facts are neutral to all our views of right and wrong"; therefore the role of science is in discovering facts in the "objective world" and not succumbing to the "pictures inside their heads" (PO, 43):

> *For the discipline of science is the only one which gives any assurance that from the same set of facts men will come approximately to the same conclusion. (Lippmann 1914, 285)*

Lippmann is not saying that the public is not competent in doing so, they certainly were able in the context of rural townships on the basis of direct experience, but that because they are distanced from the actual events, they cannot have real insight. In a sense he is making two distinctions in this regard, that do not necessarily run in parallel: on the one hand, he makes the distinction between so-called insiders and outsiders, where the latter are essentially lacking[7], and on the other the distinction between scientists and the rest. In the following I will focus on the latter distinction.

Lippmann posits an essential difference between scientists and the public. Experts and scientists are armed with the needed information to form competent opinions as well as have the capacity gained through studying and training in order to

[7] This distinction is made more forcefully in *The Phantom Public*, where he posits it as the primary one, saying that that is why excellent scientists, among others, "often talk such nonsense about politics" (PhP, 140). Independent of which distinction he sees as the most significant, the public is on the "losing end" of both.

overcome the limits of stereotypes in perception. Scientific findings therefore are representations of the world, simplified models with which our environment can be managed, but with the knowledge of the "degree of fidelity" (PO, 10). In contrast to the natural sciences, which achieved objectivity and autonomy on the basis of the application of scientific method and a systematic approach, in the social sciences this also includes a reflexive examination of one's views, interests and traditions – "liquidate judgments, regain an innocent eye, disentangle feelings, be curious and open-hearted." (PO, 23)[8]. This issue, though, rarely comes up in *Public Opinion* – experts' findings are in his view *a priori* unbiased and objective (Splichal 1999, 20):

> *They have found an interest in the actual work they are doing. The work itself is in a measure its own reward. The instincts of workmanship, of control over brute things, the desire for order, the satisfaction of services rendered and uses created, the civilizing passions are given a chance to temper the primal desire to have and to hold and to conquer. (Lippmann 1914, 49)*

In this they differ from the public, whose perceptions are "untrained observation" deeply governed by preconceptions as well as "with ambition and economic interest, personal animosity, racial prejudice, class feeling and what not" (PO, 34, 29). It is not that scientists do not prescribe to a philosophy of life, but that they, due to their education, hold to it in a weak and reflexive manner and are therefore able to hold stereotypes more lightly, are "capable of overcoming subjectivism" and modify their understanding in relation to new information (PO, 34, 121). In contrast, the public holds on to them more strongly and "burdens public debate" with emotional and interest-laden biases (Splichal 1999, 8).

Dewey sees the basis for good decision making in both expert knowledge and public knowledge (PP, 208-9). In relation to the lack of knowledge and the state of the public he is more cautious or perhaps hopeful that Lippmann – his view is that it is impossible to tell if the "intelligence of the masses" is able to judge social policies until "secrecy,

[8] For example, he criticizes economists for creating abstractions and models without examining their premises: "their reasoning is built upon an unreal picture of man and industry" (Lippmann 1914, 320).

prejudice, bias, misrepresentation, and propaganda as well as sheer ignorance are replaced by inquiry and publicity" (PP, 209). The complexity inherent in the far flung issues represents only an obstacle that could be overcome not by an all-knowing citizen, but through communication between the public and scientists.

In Dewey's case, the difference between experts and the public is not essential; as he stated, facts are not independent of the member of the public or the researcher. The distinction and the special role of the scientists for him lie in the division of labor where scientists through training acquire a "specialized habit":

> *Thinking itself becomes habitual along certain lines; a specialized occupation. Scientific men, philosophers, literary persons, are not men and women who have so broken the bonds of habits that pure reason and emotion undefiled by use and wont speak through them. They are persons of a specialized infrequent habit. (PP, 160)*

Science therefore is not ordinary, common knowledge, but is constituted by its methods – through a highly specialized apparatus (PP, 163). Because the perceptions of all are susceptible to preconceptions, no knowledge reflects "truth" *per se*. Here common (public) knowledge and scientific knowledge can be seen as complementary – adding (local) context and the values and interests of the public to the abstracted scientific knowledge (Pinter and Splichal 1999, 22).

In contrast to Lippmann's idealistic view of scientists, Dewey highlights the role of human agency – that science is not driven just by "intellectual purposes", but by the role it plays in society and the "purposes, desires, interests, and values that enter into the making of science itself" (Brown 2009, 152); this holds not only for social sciences, but for science in general:

> *The impact of cultural conditions upon social inquiry is obvious. […] in the past institutional vested interests have told upon the development of physical and biological science. […] The appearance of absence of conflict [at present] is to some extent a function of this isolation. What has actually happened, however, is that the influence of cultural conditions has become indirect." (Dewey 1938, 488)*

Scientific inquiry, therefore is not just a specialized habit, but should also be seen as a moral enterprise (Brown 2009, 153) – working with care and sensitivity and without bias (Dewey 1920, 164).

How they understand the role of the social scientists with regard to the public stems also from the difference in their starting point – between the *ought* and the *is*. Dewey compared the state of affairs to his normative position and tried to expound on how to improve it accordingly. Lippmann, on the other hand, focused on the failings of the public, news and political system:

> *If the voter cannot grasp details of the problems of the day because he has not the time, the interest or the knowledge, he will not have a better public opinion because he is asked to express his opinion more often. He will simply be more bewildered, more bored and more ready to follow along. (PhP, 26-7)*

For him a counterfactual ideal is "a false ideal", which does not express the true possibilities and is in this sense misleading (PhP, 28). In this context, even if his epistemological position was similar to Dewey's, the primary role of science would not change. Dewey criticized Lippmann for surrendering too readily and focusing solely on the government: "The enlightenment of public opinion still seems to me to have priority over the enlightenment of officials and directors" (1983/1922, 343, 344).

2.2 MODERN THEORIES ON THE MEDIATIZED PUBLIC SPHERE: LEON MAYHEW AND JOHN B. THOMPSON

Whereas the conceptualizations of the public and the role of social sciences in the case of Dewey and Lippmann are formed in relation to the social context – the circumstances of the broadening of the scope of information, events and the management of the consequences thereof, they do not present any concrete solutions beyond education. In the following I will delve into the writing of two more (contemporary) theorists of the public sphere: Leon H. Mayhew (1997) and John B.

Thompson (1995). While they do not deal with the social sciences as explicitly, they delve into the conditions – possibilities and more specifically limitations – of a public sphere based on the representations in the mass media (Splichal 1997) and the ramifications of mediatization for the conceptualization of publicness. These do not include accounts of the contemporary changes in relation to the development of the internet; their writings predate it.

2.2.1 The relinquishing of the public and focus on the mediatized public sphere

With the growth of modern mass media in the 2nd half of the 20th century and the rise of the concept of the public sphere following the translation of Habermas' famous work *The Structural Transformation of the Public Sphere* in 1989 the concept of "the public" declined, even though it represents the basis for the normative operation of the public sphere. The focus of theorists shifted to the so-called mediatized public sphere, which represents many limitations to the realization of the normative conception of publicness.

John B. Thompson's (1995) writing on the fundamental changes that were brought about by the use of communication media is analogous to (mostly) Lippmann's account of changes in society – mainly changes in "the spatial and temporal organization of social life" which brought about new ways of communicating and relating, new forms of action and "new modes of exercising power" (ibid., 4). He writes that our sense of everything beyond our experience is "increasingly shaped by mediated symbolic forms" (ibid., 34). But beyond that, the development and growth of the mass media have ushered in new ways of communication and relating – what he terms as mediated "quasi-interaction". These new ways of communicating are constituted by one way monological communication, which does not allow for reciprocity and "interpersonal specificity" (ibid., 84). For the producers of messages no cues are available for "reflexive monitoring of others' responses" and are based on a preconception of the multitude of recipients (ibid., 96). The recipients, on the other side, are not "partners in a reciprocal process of communication exchange"; they are

"by the very nature of mass communication, unequal partners in the process of symbolic exchange" (ibid., 25, 29). In comparison to dialogic communication, in mass communication the issue of power and status plays a greater role. On the one hand, only some have the opportunity to use the media to their advantage, to be producers; on the other hand recipients "have relatively little power to determine the topic and content of communication" (ibid. 30, 118). In comparison to many theories of the public sphere, though, Thompson besides acknowledging their powerlessness in this sense does not deny the public agency in the interpretation of media messages.

Due to these conditions, Thompson advocates for a reconception of the concept of publicity. He argues that most of our thinking is shaped by a certain model of public life, on the Greek *agora* where publicity was based on co-presence. Due to the structural changes in society this model, in his view, has outlived its purpose – it is so far removed from the realities of life and the new and dominant forms of communication (especially television), that a new conceptualization of publicity is needed (Thompson 1995, 6)[9]. He argues this point by writing that the traditional (dialogical) conceptualization (of Habermas, 1989) is founded on a model of communication based on the spoken word transposed to our thinking about print. For him television establishes "a new and distinctive relation between publicness and visibility", "by virtue of the visual richness of its symbolic cues" (Thompson 1995, 129):

> *we shall not arrive at a satisfactory understanding of the nature of public life in the modern world if we remain wedded to a conception of publicness which is essentially spatial and dialogical in character (ibid., 132)*

His approach can thus be seen as parallel to that of Lippmann, in that the circumstances are so disparate from those of the (counterfactual) ideal that approaching the issues of the public sphere from a normative position would be unproductive – while it does have "moral appeal", the model of direct participatory democracy for him is not a practical response (ibid., 254). As Lippmann, by framing the concept of publicness as a question of locality and direct visibility and thus by casting aside what it *ought* to be, he posits an either-or fallacy - between the traditional model

[9] Although, he does write in his critique of the theories about the dissolution of tradition that the broad contrast between traditional and modern societies is "misleading" (Thompson 1995, 187).

and “a new kind of mediated publicness” that is based on availability, openness and visibility (ibid. 236).

Although he points out the inherent asymmetry in the relationship between the producer and recipient, by starting from what *is*, he implicitly accepts the role of the public as an audience of mass communication and publicity in the public sphere as struggles for visibility and recognition and not for reaching a common understanding:

> *To achieve visibility through the media is to gain a kind of presence or recognition in the public space, which can help to call attention to one’s situation or to advance one’s cause. But equally, the inability to achieve visibility through the media can confine one to obscurity – and, in the worst cases, can lead to a kind of death by neglect. […] Mediated visibility is not just a vehicle through which aspects of social and political life are brought to the attention of others: it has become a principal means by which social and political struggles are articulated and carried out. (Thompson 2005, 49)*

Thompson very shortly explains his solution to try to bracket these differences in the individual’s influence on public decision-making in the context of mediated publicness through the concept of deliberative democracy – which he posits with individuals as autonomous agents forming judgments and which “institutionalizes a variety of mechanisms to incorporate individual judgments into collective decision-making processes.” (Thompson 1995, 255). Legitimacy here is based on the process (of deliberation) not the outcome. By focusing on individuals rather than on the public, Thompson reduces cooperation and dialogue to mere information flows and foresees deliberation as an individual’s (internal) act (McLuskie 2003, 31). In his view, this deliberative conception is not necessarily a dialogical one: “The formation of reasoned judgments does not require individuals to participate in dialogue with others.” (Thompson 1995, 256). Individuals acquire information through the media and access different points of view (ibid., 257). By individualizing the members of the public and seeing deliberation as an individual act, Thompson sees the public sphere as merely a marketplace of ideas with the role of the individual in making an informed choice from the range on offer without delving into the intersubjectivity present in dialogue. The

issues relating to power, that is of both the access to different views as well as the ability of articulating them through the media and thus feeding them back to the decision-making process are dealt with quite vaguely, mainly by proposing the regulation of pluralism in the media.

Leon Mayhew (1997) in his book *The New Public* to some degree agrees with the state of affairs, but in contrast to Thompson's sometimes quite optimistic outlook on the media, is very critical. The crucial difference lies in that he does not write the normative ideals off, but in a "more forgiving approach" accepts the limitations brought about by the transformations of society and delves into how to get closer to the ideal (ibid., 6).

The mediatized public sphere does not provide a basis for public life, because it is dominated by "professional experts on persuasion", whose main role is manufacturing the consent of citizens (Mayhew 1997, 4, 51). The domination of the specialists (political consultants, pollsters, lobbyists, pundits) also undermines the ties within the public sphere and the flow of communicative power to the political system by limiting access to the public agenda and shaping it according to the instrumental purposes of these media actors (ibid., 215).

As Thompson, Mayhew acknowledges the decline of dialogic communication, but is much more critical of mass communication in his designation of mediated publicity as mainly instrumental, manipulative publicity. Due to time constraints of both producers and recipients, arguments in the media are not disclosed in full, but represented only by abridged arguments or "tokens". Similarly to Dewey's concession in relation to the impracticality of direct democracy in complex large-scale democracies, Mayhew accepts the presentation of token arguments instead of full inclusive debate, yet sees this arrangement as legitimate only under the condition that the tokens can be redeemed in a free and inclusive public forum. Redeeming does not consist of demonstrating their truth, but rather "respond[ing] to demands for clarification, specification, and evidence" (1997, 13).

The lack of such forums which would allow the tokens to be redeemed for Mayhew represents the "key failure" of what he calls "the New Public", i.e. the

mediatized public sphere (1997, 6). Instead, the public is asked to accept these tokens on the basis of trust in their credibility, also by relying on the status of the individual or the backing of an institution. Because the techniques of rationalized persuasion are being used also by professional specialists, without these claims being grounded in public debate, there is an inflation of influence that is not redeemed (ibid., 19,190). Professional communicators even employ specific strategies exactly to avoid the confrontation of their claims.

By conceptualizing mediated publicity as tokens, Mayhew to some extent criticizes the idea of the public sphere as a marketplace of ideas. The domination of strategic communication and the ubiquity of appeals to public interest within it, on the one hand drives down the trust of the public in token arguments; on the other hand it hinders the mobilization of solidary ties that bring a public together in relation to a specific issue (Mayhew 1997, 75). The lack of forums for public deliberation means that not only are these tokens not redeemed, but that the "authentic" public issues do not get on the agenda (ibid., 236). The media are too "bound up in systems of prestige-based influence" to be open to these kinds of debates – forums and debates need to be available in other spaces (ibid., 256).

2.2.2 The limited role of (social) science in the mediatized public sphere

Although both Thompson and Mayhew do not deal at length with the role of scientists or explicitly social scientists, their writing does indicate how these changes bode for them. On the one hand, both question the ideal of rational debate in the mediatized public sphere *in terms of its efficacy* in relating to the public. On the other hand and somewhat related to this issue, the transformation of society, especially the changed nature of mass communication has impacted the power delegated to the status of scientists.

The main bearing of Thompson's (1995) writing on the role of social scientists, while he writes explicitly about universities only in a few passages, lies in his critique of

the assumption of the passivity of the recipient of mediated messages[10]. On the one hand, he views universities as "paradigmatic institutions" which (along with other schools, churches and the media) are "privileged bases" for the exercise of symbolic power (ibid., 14), with which scientists can intervene and influence the actions of others. They also impart to their members symbolic capital in the form of "accumulated prestige, recognition and respect" (ibid., 16). On the other hand, the power and status accrued does not necessarily translate into influencing or persuading the public through mediated publicity. Audiences are not passive onlookers, but engaged in an "active and creative process" of interpretation of media messages. Reception is situated in different social contexts and grounded in different resources, that is, competencies and skills, background assumptions and other cultural resources (ibid., 23, 38). While this holds also on the face of it for face-to-face dialogic situations, mass communication by its very nature does not allow for cues or feedback.

Although Thompson does not state it outright, an understanding of the lessening of authority and with it status and power can be inferred from his critique of the postulated decline of tradition in classical social thought. He argues against the claim that with the transformation from traditional to modern societies the enlightenment of thought resulted in the decline of the significance of traditions. The presence of traditions is still significant, yet they are de-ritualized and less bounded to space, time and social relations and have therefore lost their status as "unquestioned truth" (1995, 183). This discussion on traditions can give us an insight into the significance (or lessening thereof) of science as a modern day tradition – that is, according to the characteristics laid out by Thompson, as an interpretive framework for understanding the world with a set of prescribed practices (ibid., 184). Science is in this sense just one of the (prevailing) socially constructed traditions in the modern marketplace of traditions.

Whereas Thompson's account of the media is more optimistic in terms of content, seeing the new mediated visibility in the Benthamian sense of surveillance of

[10] Removing this assumption about the passivity of the public also, for Thompson, removes some of the force of the argument that we are facing a refeudalization of the public sphere, that is turning publicity into merely a managed spectacle *before* the public with which politicians seek acclamation of the passive public (1995, 74).

decision-makers[11], Mayhew's (1997) book is a scathing critique of the state of the media at the time. Although for him the status and credentials of scientists still hold some sway as indicators of reliability, their "techniques of rationalized persuasion" are being (ab)used in an instrumental manner for special interest groups as well as by professional communicators, such as lobbyists, political operatives and pundits (ibid., 19). Scientists are thus not distinguishable among the many – political operatives also use experts, especially those affiliated to think tanks, in order to testify and certify the facts in support of particular political positions and goals (ibid., 5). They use the experts' credibility, that is based on their knowledge and professional norms, to their advantage, but in the long run these lose some of their significance in an inflation of expertise as well as in public disputes among themselves (ibid., 227). The credentials of experts therefore do not necessarily mean credible knowledge, but are used as "signals of credibility" (ibid., 229). Scientific methods and findings are also used for strategic purposes by professional communicators as well as media producers, e.g. market research and subsequent demographic techniques (e.g. pretesting), rationalization of the production process and distribution etc.

In view of the ubiquity of seemingly rational, instrumental publicity, Mayhew concedes the ideal of rational public debate in the mediatized public sphere, or rather the condition of rationality – the "standards of good argument" cannot be used as distinguishing features of critical publicity (1997, 41).

2.2.3 The formation of publics – a blind spot in mediated publicity

The writings of Thompson and Mayhew focus on the public sphere as constituted by media representations and to a large extent do not deal with publics per se, but those speaking in front of them and (to some extent) for them. Because, according to both, the mediatized public sphere has become more of a marketplace, in which

[11] His optimistic view of the media is quite evident in his discussion on the advantages of mass communication in stimulating forms of collective action (anti-war protests and the fall of the Berlin wall) (Thompson 1995, 114-8).

instrumental publicity is to a large degree indistinguishable from critical publicity, the issue of the formation of publics is left unresolved.

By focusing on the mediatized public sphere they both mainly focus on only one facet of Habermas' (1998a) conception of the dual orientation of actors in the public sphere – on their activities representing a publicist orientation, contesting opinions and striving for influence. They do not focus as much on the "self-referential character of the practices of communication" – being "reflexively concerned with the revitalizing and enlarging civil society and the public sphere as well as with confirming their own identities and capacities to act" (ibid., 379). This orientation would position scientists as not above the public or their communicative actions as representing *before* the public, but as members *of* a public – on the one hand, standing in as representatives *for,* as intermediaries between the public and the decision-makers and on the other hand as members *of* a public, reflexively engaged in revitalizing it in the (not necessarily mediatized) public sphere.

While they both see the formation of the public in relation to issue formation, Thompson sees the public more as an audience – a public constituted by aggregated individuals. This individualized conception of the public makes the distinction between aspects of public communication moot. Mayhew, on the other hand, while his writing, especially about the publics' representatives and prolocutors, sometimes points more in the direction of corporative publics, stresses the integrative significance of public life – the creation or reinforcement of affiliations and identities, opinions mobilized for collective action etc. (1997, 5):

> *The challenge is to restore the public's confidence in itself. We must abandon our presumption that public discourse takes place between government and citizens and relocate this discourse within the public. It is this discourse that creates and constitutes the citizenry as a public (Mathews 1994). (Mayhew 1995, 260)*

The role of the social scientists (as well as other speakers), according to Mayhew, is to mobilize solidarity by aligning the interests of the speaker and the audience towards collective goals (ibid., 44, 61). Yet, in order to achieve this "integrative potential",

mediated publicity needs to be grounded in public debate. For one, mass communication is mainly instrumental and not oriented towards reaching an agreement, secondly in the media "social status lurks in the background" (ibid., 12, 31):

> *only institutions requiring those who exercise public influence to enter forums wherein their token claims can be redeemed in information and argument could secure the integrative potential of influence (ibid., 110).*

Even though he advocates for forums for redeeming tokens, his proposal for their actualization is not very substantial and focuses more on getting questions answered than on dialogue, and does not address the issue of power and status of the speakers, amplified by visibility.

2.3 POWER AND REFLEXIVITY – TOWARDS A SOCIOLOGICAL TRANSLATION

One of the most authoritative theorists of the public sphere in the deliberative tradition (and otherwise), Jürgen Habermas, in response to "the culture of positivism pervading the universities" as well as the opposite sides of radical student protests and a post-war technocratic ideology in West Germany in the late 60s (Goode 2005, 61), criticized the technocratic and decisionistic models which rest on a false premise of the division between facts and values, which "conceal pre-existing, unreflected social interests and prescientific decisions" (Habermas 1970, 59). In his writing, heavily colored by current affairs, he stressed the importance of scientific reflection before the assimilation of technologies – that is techniques of control over nature as well as human behavior – into the life-world (ibid., 56).

He advocated the "pragmatistic model" (in reference to Dewey) – that is for critical, reciprocal interaction between decision-makers and scientists, which must be "rooted in social interests and in the value-orientations of a given social life-world" that determine the practical needs in a concrete situation (ibid., 68; Bohman 1999b). For him this relation between science and public opinion is constitutive, yet unlike

Dewey, whom he charges with naïveté in this regard, he sees both actors in this relationship as problematic. On the one hand, the development of the sciences has impeded the "translation of practical questions into scientifically formulated questions" as well as led science to be sequestered from the public (or barred in the case of large scale governmental contracts) (ibid., 70). On the other hand, the ideal conditions for autonomous inclusive discussions in the public sphere are lacking, due to structural changes – the depolitization of the citizenry, decline of publicity as a political institution and instead a rise in publicity in the mediatized public sphere "confined to spectacles and acclamation" (ibid., 75).

The pragmatistic model serves here as a normative account of the relationship between scientists and the public, because it resolves the dilemma brought up by the needed division of labor within society and the subsequent asymmetry of access to information. It requires cooperation with the public and incorporation of the public's understandings of public problems into the scientists' work (Bohman 1999b, 592). As Habermas (1970) pointed out, this ideal is counterfactual and, notwithstanding the problematic actors, could not be sustained due to constraints on different resources.

In order to translate the normative (pragmatistic) ideal into something actually attainable in today's society we therefore need to take into account these conditions as well as the division of labor within science – that is, the different roles that scientists inhabit in the course of their careers. To that end it is pertinent to review Michael Burawoy's (and others) writing on public social science that draws on this normative position, yet reflects the actual practice of scientists (Burawoy 2007, 2011; Clawson et al. 2007, Calhoun, 2009).

Granting that "some division of labor is appropriate", that is, that not all social scientists need to address public debates directly or focus their research on pressing public matters (Calhoun 2009; Smith 2009), Burawoy distinguishes between four categories of scientific labor: professional, policy, critical and public social science. His normative vision is that one could contribute to public social science as a good scientist, no matter which category he or she might occupy at a certain time (Burawoy 2007, 44). Because these categories of scientific labor are "mutually interdependent

and invigorating", they therefore could contribute to the public good in, albeit different, sometimes intangible ways (Burawoy 2011).

The distinction between the four lies in these two questions: knowledge for *whom*, where he distinguishes between academic and extra-academic audiences; and knowledge for *what*, where he distinguishes between work towards instrumental and reflexive knowledge. Professional social science provides the basis for other categories of science as it "supplies true and tested methods, accumulated bodies of knowledge, orienting questions, and conceptual frameworks" (Burawoy 2007, 32). In contrast to professional social science, which is concerned with instrumental rationality, critical social science "exposes and engages the assumptions" of professional social science and thus serves as its conscience (Burawoy 2011).

The category policy social science refers to science "in the service of a goal defined by a client" (Burawoy 2007, 31). Its role is to research and provide solutions to more or less specified problems or within broader policy agendas (ibid.). It is not designated by payment, although this often is the case, but by the provision of instrumental knowledge to extra-academic actors. Public social science is, in its essence, taking social science "to publics beyond the university" (Burawoy 2011). Its mission is to identify, in cooperation with different publics and other stakeholders, the major problems, relevant evidence and persuasive arguments when dealing with public issues. Its importance does not lie only in the production of scientific knowledge, but also in the creation and transformation of different publics by communicating and engaging them in conversation (Burawoy 2007, 28).

Although this classification of social sciences is practical for determining the roles social scientists embark upon within their work, it obscures some issues that are determinative for researching the role scientists have in relation to the public sphere – who is *public* and what exactly is meant by *public*. First of all, although the categories are not meant to be clear-cut, but rather fuzzy and overlapping as well as not determinative for a scientist's career, they do not provide a good differentiation of who indeed is an actor in the public sphere. No matter their role, scientists of all four categories appear in public, be it as the "public face" of other categories (Burawoy

2007, 35) or in other non-mediated activities that position scientists in a public setting (e.g. field work, spatial planning presentations). This is not to diminish the significance of the emerging debates on the importance of social scientists engaging more outside of the proverbial ivory tower, especially in view of the incessant creep of the commercialization of knowledge into higher education and research. Nonetheless, this categorization does not take into account the impact other categories may have on the public sphere. Furthermore, the framing of public social science juxtaposed to the other categories, implicitly releases the others from even reflecting on issues in the interest of the public good.

Second of all, the categorization to some extent captures the division of actual scientific labor, but surrenders its normative impetus with a vague understanding of *public* as the specific nature of a particular activity (Splichal 2011, 11). The main issue as pertains to the role of social scientists in the public sphere is not so much whose work is public, as in visible or generally accessible, but whether *public* "implies a specific communication structure that enables citizens to act communicatively 'in public'" (ibid.), that is, whether it means the inclusion of citizens impacted by the problems addressed by scientists.

This indistinctness is most prominent in the division between so-called traditional and organic social scientists. Traditional public social science is the work done by scientists when communicating scientific knowledge to a lay audience. By putting issues on the agenda or intervening in the framing of issues social scientists bring public issues to the fore or transform formerly private issues into public issues. Here the social scientist is not part of the dialogue *per se*, rather a "*catalyst* of public debate and discussion" (Burawoy 2011). Scientists are thus engaging in representative publicness and approach the public as an audience. Organic public social science, on the other hand, represents those much rarer instances of scientific work that "is intimately and directly connected to publics themselves, often articulating and representing issues that publics are already struggling with" (Burawoy 2011).

Although Burawoy sees "a dialogic relation […] in which the agenda of each is brought to the table" (Burawoy 2007, 31) as an ideal for public social science, it is not a

requirement. This ideal of reciprocity falls to the wayside also within the writings of others who support public social science – the focus is on addressing public debates, informing, teaching and guiding the public or being defensible to and gaining the support of the public (e.g. Calhoun 2009, Smith 2009).

While the ideal of a dialogic relationship of all scientists is unattainable in view of the division of labor of scientists and lack of resources, more scientists should feel encouraged to engage with the public. What is understood as a public problem or indeed the public good cannot be determined solely within the scientific sphere. This is not to say that scientific work should be guided solely by public input, as some critics of public social science fear (e.g. Smith-Lovin 2007). What should be expected of all social scientists, especially those in public, is a certain sensitivity to public values, interests and problems as well as reflexivity about their own position and knowledge (Habermas 1970; Dewey 1920). There is no discounting that scientists are educated and trained in a specific way and set apart by a certain way of thinking that favors an objectivistic epistemology.

The issue is not just the asymmetry in access to information and the accompanying status in society, but the (relative) power to facilitate certain previously unnoticed issues to reach the agenda of the media, especially when transforming previously private into public issues, and the power to frame issues in such a way as to bring together the seemingly disparate issues of citizens. Whereas the role of social scientists is often seen (and advocated for) in the role of facilitator, organizer or mediator in the actualization of public debates, without reflexivity on their part this role can serve to constrict public debate despite their best intentions. That civil society is expected "to absorb and neutralize the unequal distribution of social positions and the power differentials resulting from them" is counterfactual; these differences can have an effect in restricting the "exercise of civic autonomy" (Habermas 1998a, 175). Scientists should be reflexive about their relative power, since even when not wielded, it has distorting effects on public deliberation (Asen 2000, Fraser 1992).

3 THE CULTURE OF THE SOCIAL SCIENCES IN RELATION TO THE PUBLIC SPHERE

The participation of citizens in decision-making processes has become a key part of political discourse in the period since the 1970s, when environmentalists demanded the inclusion of the public in decision-making about complex environmental problems. The public's participation on the one hand meant the democratization of decision-making processes by opening up the exclusive domain of political actors and experts, and including anyone who was significantly or would in the long term be affected by the decisions made by others. On the other hand, because the environmental problems were seen as the (unintended) consequences of scientific developments, democratization was also aimed at science, in order to allow other experiences, modes of thought and observation to contribute to the "betterment of scientific knowledge" (Carolan 2006, 661; Jasanoff 1987).

In the past decade, especially with the rise of the concept of "the knowledge-based society", the necessity to engage with wider society has become an important topic of science policy at the European and national level as well as on the level of individual universities – administrations and faculty. Bucchi and Neresini (2008) point out a linguistic shift: "from 'public awareness of science' to 'citizen involvement', from 'communication' to 'dialogue', from 'science and society' to 'science in society'" (457). Participatory, civil, public and democratic science – these are the buzzwords that indicate the rise of a participatory paradigm. As is almost inherent to buzzwords, the participatory paradigm has multiple and somewhat vague meanings. Unfortunately, in the majority of cases, they seem to have also become a "blind mantra" (Davies 2002, 201).

The aim of this chapter is to give some insight into how and why the participatory paradigm has been largely thwarted or limited to representative publicness on the scientists' side and formalistic participation on the public's side. In order to gain a greater understanding of the underlying reasons for this, the chapter focuses on the writings on the relationship between scientific and public knowledge from a broad field of research whose primary object of research are science and

technology. It delves into the different understandings of the relationship between scientific and public knowledge and the limitations posited by scientific culture itself through the construction of boundaries between them.

3.1 PARTICIPATION IN PRACTICE – A CASE OF MISGUIDED OPTIMISM

The aspirations of environmentalists in the 1970s did not come to bear, despite the growth in the use of different forms of co-operation: from participatory conferences, workshops and roundtable discussions to knowledge café and other collaborative techniques. Although the inclusion of the public in decision-making processes is becoming more prevalent and in some cases (e.g. in environmental issues) obligatory, it has become somewhat of a formality or simply, a ritual. Despite the calls for the democratization of science, which means "to acknowledge non-scientific actors as knowledgeable partners" (Lindskog and Sundqvist 2004, 209), participation is most often perceived in a rather limited sense (Lele 1991, Irwin 1995, Walker 2007). It mainly involves "top-down" communication of science, teaching and persuasion (Burgess and Harrison 1998, Davies 2002, Irwin 2008) or shifts or boils down to just "publicity for science" (Felt 2003, 16).

This means that although the scientific community is discursively engaged in public issues, the democratic participation of citizens, which is essential for any political conceptualization of the public, is absent. Unfortunately, the scientific (and political) spheres often consider the role of the public sphere *post festum*, and thus limit the role of the public to the legitimation of policies. These new forms also serve the purpose to fulfil established commitments to democratize decision-making processes and thus "procure trust" without actually changing anything (Wynne et al. 2007, 41).

With the inclusion of the public even in the later stages, participation has become increasingly institutionalized, which has implications for the position of the participating public. In contrast to the environmentalist and other grassroots social movements that fought to be included, the participation of citizens has lost its

"firepower" – notably a shift from social movements to professional mediation and from the contestation of values and political ideologies to consensus seeking (Læssø 2007, 231,2; Walker 2007). Some of these shifts would be hard to avoid when participating in formal decision-making processes, yet some issues need to be raised that relate to the power differential in these processes.

Even if participatory forms are lauded as bottom-up, some elements remain top-down – they are organized and managed by political or scientific actors and institutions who decide on the format and the topic to be covered (Joss 1999; Phillips et al. 2012). This means that the agenda is already constrained; often broader structural decisions have already been made which denies the public the possibility of questioning them (Mercer 1998, 85) – it means a choice between limited options. These sometimes explicit and sometimes tacit "prior framing[s]" of the problem in question, of the role of the scientist and of the citizen have an effect of disciplining (Leach et al. 2005, 11).

In certain fields of research, public participation is par for the course, yet in many of these cases, participants are interpellated into the role of a user (e.g. of a certain space in urbanism) or consumer (e.g. of a certain technology or service). The participant is therefore a direct "stakeholder", someone on which the results of research and policy will most probably have a direct impact. The term stakeholder also represents a prior framing of the problem, as it implies that the "stake" is agreed upon (Wynne et al. 2007, 58). This framing of their role also implicitly predefines the type of knowledge they bring to the table. As a user or consumer their knowledge is based on local contingencies, individual interests and tacit knowledge and not on the interest for the common good.

Besides prior framing the public is at a disadvantage in terms of discourse. Experts tend to use legalistic and technocratic language (Irwin 1995, 69; Dahlgren 2009). On the one hand specialized discourse can act as a deterrent or limit dialogue due to different meaning attributions. On the other hand, the rationalistic form of discourse possesses a rhetorical force, one of "gaining attention and authority by drawing on social codes of rationality and impartiality" (Dahlberg, 2005, p. 119).

Despite the realization that in practice democratization is not actualized, the potential influence of the programmatic appeals should not be simply discounted as lip service. The growing gap between science and the public is also constructed through discourse, not just practices, and some of these appeals counter it, even though they may be "characterized by a high density of promissory elements" (Felt and Fochler 2010, 220). This perhaps may be a naïve or idealistic position, but the first step towards reflexivity and change is attention.

The same could be said for the emergence of programmatic calls in scientific circles for the restoration of the public role of social scientists in the public sphere (e.g. Clawson et al., 2007; Burawoy 2007; Calhoun, 2009; Gans 2009; Smith 2009; etc.). This *publicness frame* (Splichal 2011, 125) has resurged in response to the dominance of neoliberal discourse on the role of the university and the scientist. Yet, akin to the calls for the democratization of science, the calls for public social science have not been realized. Gans (2009) cautions, that there is more discourse about public sociology than actual contributions towards revitalizing the public role of scientists; in his opinion structural changes are necessary. As ascertained, for example, by Kyvik (2005), in Norway social scientists and humanities scholars publish more items aimed at the general public than other scientists. And although the scientific community is to some extent discursively engaged in public issues, it is not so much engaged in and with the public.

To some extent this could be written up to factors originating outside the scientific sphere – the neoliberal understanding of the role of the scientist and the university, that is not only guiding much of science policy, but also seeping into the self-understanding of scientists themselves. The neoliberal discourse defines the public role of the university and of scientists as stemming from the source of funding and not from a conception of the public good, essentially commodifying knowledge. The same understanding is the basis for the discourse on public accountability of science, which is not sustained by responsiveness to public needs, but by performance measurement and "the audit culture" (Marginson, 2006: 46). The focus on direct effects, efficiency and productivity of the neoliberal frame has brought pressures of instrumentalization and commercialization of knowledge, what Helga Nowotny (2005) called *the*

propertization of science. Thus the democratic potential that scientists could have has been weakened or perhaps sacrificed to better fit the business model (Splichal 2011, 126).

The requirements imposed on social scientists include playing the role of expert and as such participating in public discussions on topics of public concern, yet other imperatives limit the possibilities and resources needed for this engagement. One important factor is the preeminence of quantification in the evaluation of goals, purposes and achievements of scholarship. This different conception of merit and excellence has a broad impact on the regulations and evaluations of efficiency and productivity, including the reward structure and criteria for academic advancement. With the focus on the number of publications in refereed academic journals and academic monographs, impact factors, number of students, evaluation surveys, etc. it allows less time and other resources and gives less incentive for engagement in the public sphere. The effects of formal rationality and the mission of empirical research for policy needs "under the model of positivism and professionalism," have taken its toll on public engagement and the Humboldtian duty of self-development and development of democratic culture (Hohendahl, 2005).

Even in the case of public engagement, the recent discourse on "knowledge society" imparts on social scientists the role of experts, which not only promotes "the social separation of science" (Trench 2008, 127), but bases a whole vision of development through competitive advantage on it. While the transformations of the university in recent decades have ushered in practices and missions that can be considered as non-essential to the public role of the university, they are based on the assumption that precedes them – the assumption that there is an *essential difference* between scientific and public knowledge.

3.2 THE GROWING GULF BETWEEN SCIENCE AND PUBLICS

Although, historically, universities and scientists have been key in the creation of (national) public spheres (Splichal 2011, 122), the development of science in the 20th

century, its remarkable growth and specialization gave rise to a creed that *opposed public engagement to academic professionalism* and thus contained the communication of scientists inside the academic sphere (Calhoun 2009). The basis for a limited role of the public in decision-making and the closing off of the work of scientists in so-called "ivory towers" is the growing gulf between professional scientists and the public or between scientific knowledge and public knowledge, which, in the 20th century, represents the key element of the modern understanding of science. This gulf is not inherent, though, but developed from an epistemological gap since the late 19th century.

This development has not been extensively studied. According to Cooter and Pumphrey (1994) the field of history of science hardly delved into the relationship between science and the public, and where it has, it has regarded science "positivistically, as culturally transcendent and bereft of ideological content" and/or has represented "popular" as "fringe" (245). Here I will present only a brief account of the developments, which inevitably paints with a broad brush[12], but it is necessary to put this division into some historical context. As Myers (2003) wrote:

> *[S]uch divisions […] we take for granted, were formed in historical struggles, and are re-formed in everyday practices: the way a quoted speaker is introduced, a metaphor used instead of a technical term, a table summarized and simplified (274)*

and indeed in the way in which scientists frame public participation in the case of sustainable development.

For certain, ever since the institutionalization of modern science in the 17th century, the gap between scientific and public knowledge has existed. Even though it was, at the time, populated by, what we now would deem "amateurs and virtuosi"[13] (Nowotny 2005, 5), a gap was and is a necessary ingredient in the notion of science as a particular social practice. Yet until the 20th century, this gap was not seen as

[12] Unfortunately, this account also focuses mainly on the developments in the United States of America, but it still is pertinent, since the current state of scientific culture in Europe has in large part been influenced by the scientific culture in American research universities.

[13] Indeed, the term "scientist" was not used before the 19th century when it replaced the term "natural philosopher" (Hess 2001, 13724).

ontological, but rather in the sense of a division of labor – that is "accidental rather than essential" (Bensaude-Vincent 2001, 106).

The basis for the division at first were the different modes or styles of argumentation; later with formalization and mathematization a linguistic gap formed through the use of formal and technical languages. Due to these developments and especially with the development of physics, science came to be seen as "too complicated" for the general public (Bucchi 2008, 57), yet it was still seen as a "methodical extension of universal wisdom" (Bensaude-Vincent 2001, 104).

With the processes of professionalization in the 19th and 20th century disciplines were formed and institutionalized. Consequently, there was, on the one hand, a "gradual sequestration" of knowledge within scientific fields in "narrowly professional discourse", withdrawing it from the public sphere (Broman 1998, 141); on the other hand lay people were being excluded (Myers 2003, 268). With professionalization the gap was even more clearly defined, especially with the identification of scientists with their branch of science or discipline and not with their societal role (Bender 1993, 7; Mali 2002).

Before the sciences professionalized there was a high level of engagement in and with the public, where the public played a crucial role. For the institutionalization of science itself, some activities needed to be performed in public, so as to be "witnessed", that is "[S]cientific claims had to be made openly, demonstrated and proven in public" (Nowotny 2005, 4,6). And even in the late 19th century science was "trying to find legitimacy by appealing to a public audience" (Lengwiler 2008, 189).

Here it is important not to idealize the seeming inclusivity of the past - the narrower gap did not engender wider engagement in and with the public. Broman (1998) pointed out the parallel between the discourse on science and the public sphere: "In principle, they excluded no one, even if in practice they excluded nearly everyone" (127). Public participation was highly limited to "wider discussions among gentlemen" (Myers 2003, 268), i.e. men with economic means. This class and gender disparity was not precluded only to being a scientist or who was regarded as science's public, but for all public life in general. In the time before disciplines were formed and

professionalized, this restricted public, which verified and certified scientific findings, was in a sense an early form of peer review. With the formation of disciplines, scientists found themselves among more distinct, specialized peers in their epistemic community (Bender 1993, 10). The gain in autonomy through institutionalization also meant that they themselves defined and evaluated their own "domains" and we able to cast aside and protect themselves from non-scientists.

The development and expansion of the gap between science and the public, described above, started by excluding the public from being involved in scientific practices, but did not automatically entail "a disqualification of the publics' knowledge" (Bensaude-Vincent 2001, 101). Modern scientific culture, generally, has transformed this epistemological gap into an ontological gulf.

For one, the reclusion of scientists into the proverbial "ivory tower" is due to the rapid growth in science in the 20th century. The sciences developed into rather self-referential, "autopoietic" systems, organized in such a way so as to reinforce the relations and processes that had generated them (Splichal 2011, 124). As conveyed by Calhoun (2009): "[a]s academia grew, other academics became an ever more important audience for researchers", which reduced the need of the sciences to seek public legitimization of their work. This is not to say that science has excluded itself completely from contributing, directly or indirectly, to public culture, but that there is just no more impetus to do so.

On the other hand, the current discourse on science and in science, typified by the concept of "knowledge society", constructs two clear categories. Scientists hold the monopoly on truth and the public "has no access to true and valid statements" (Bensaude-Vincent 2001, 106). In essence, this discourse denies the public's capacity to articulate independent concerns and meanings "which cannot be domesticated and controlled by scientific forms of representation" (Wynne 2008, 30.,n.5); and it also denies their possession of knowledge based on their own visions and priorities that are different from those based on science (Wynne 2007, 101). The public thus cannot be understood as a partner or contributor of complementary knowledge, but is mainly

understood as a passive consumer of scientific knowledge and technological artifacts (Bensaude-Vincent 2001, 101).

The construction and maintaining of this gulf is not just a byproduct of the circumstances of growth, professionalization and specialization. For one, it was crucially "deployed" in the struggles for autonomy and the freedom of scientific research. Also, and this should in no way be discounted, the gulf is an immense source of social power (Mali 2002, 28).

I am not arguing here that there is no difference between scientific and public knowledge, but that the difference does not constitute the basis of wholesale exclusion of public knowledge. This definitive division above also obscures the fact that scientific knowledge is a social construct and not a method of gaining "the truth". As Merton claimed (paraphrased by Broman 1998, 142-3):

> *Scientists are not more virtuous or more intelligent than other people […] but they are distinguished by working in a social subsystem in which a number of practical norms have been institutionalized in such a way that reliable knowledge of the world is produced.*

This brief historical account, it is necessary to point out, designates more the transformation of the relationship between the public and the natural and technical sciences than the social sciences. For them the processes of professionalization and institutionalization came somewhat later and as Geiger (1986) writes (in the case of the United States), they proceeded in advance of their intellectual base in contrast to the natural sciences – they created their institutions "in order to control, shape, and advance their professions"(27). The late 19th century represented an era of "expository science" in which the gap was not so prominent; on the one hand because social science was "trying to find legitimacy by appealing to a public audience" (Lengwiler 2008, 189), on the other hand, the gentlemen representing social science at the time performed what could from a current perspective be seen as "hybrid roles" – i.e. "mixing scientific, political and often entrepreneurial biographies" (ibid., 190).

These gentlemen represent one of the social institutions that has to some extent persevered through all this time, that is of public intellectuals, generally defined

as “individuals who see their task as one of addressing and engaging with a broad and educated public on the great issues of the day” (Bassett 1996, 512), yet the specifics of their identity has changed over time. With professionalization the intellectual became identified less as part of an (elite) society and more with their discipline or institution (Keaney 2000, 120). In a sense, the intellectual became a transgressor, going beyond the confines of his or her own specialty, yet at the same time, through being a universal intellectual, publicly projected the role of “master of truth” (Bassett 1996, 513). In recent decades, though, I would agree with Bassett (ibid.), who asks if this is still a “useful or meaningful sociological category” (515). With increasing fragmentation and specialization, we have been flooded by more and more specific expert knowledges and the role of the all-knowing intellectual has waned; it is not really possible to say that their numbers have actually declined, because this honor is most often bestowed retroactively.[14]

Generally, the social sciences followed in the footsteps of natural and technical sciences, restricting themselves into “worlds of specialized discourse” within university departments in the pursuit of autonomy, distinction from “amateurs, popularizers, and charlatans” and a sanctuary from outside, especially market, demands (Bender 1993, 11, 44).

Although a majority of social sciences also followed the route of natural sciences by adopting the same measures of “scientificity” – i.e. mathematization and abstraction, some fields of research in the social sciences subscribe, and have since their formation or development, to an interpretive paradigm of thought. Another, relatively recent development was the so-called "spatial turn" in the social sciences at the end of the 1980's, in which the focus moved from grand narratives to more spatially and thus culturally nuanced work (Cosgrove, 2004). This "turn" in some fields

[14] I will not go into depth on the topic of public intellectuals here in the interest of research symmetry – the “title” of public intellectual is bestowed by others outside the scientific sphere and focus on them would exclude those who are not engaged in the mediatized public sphere, but are active in and with different publics, as well as those who are not publicly engaged. Also, public intellectuals are not necessarily scientist, although they do certainly have to possess some academic credentials, and are characterized by one-way modes of communication (Weaver 2007).

of research has important implications for the gap between the public and science, since it signals the move from a "transcendentalist" conception of the truth that sees the production of knowledge as culturally variable, but a "matter of context-free reason", to emerging "localist perspectives on the making, meaning and evaluation of scientific knowledge" (Shapin, 1998, 5). This view of knowledge as spatially and culturally situated represents a narrowing of the gap.

3.3 PARADIGMS OF THE UNDERSTANDING OF THE RELATIONSHIP BETWEEN SCIENCE AND THE PUBLIC

The relationship between science and the public since the 1960s can be represented more in detail with the emergence of inquiry into the communication and understanding of science. Granting that science popularization, as it was called before this time, had been a more or less prominent part of scientific practice, it was the remarkable growth of (basic) science coupled with the rise of the mass media after World War II that sparkedthe inquiry (Schiele 2008, 95).

In the literature recounting and analyzing these developments generally three approaches are pointed out that have developed since then (Bauer et al. 2007; Callon 1999; Felt 2003; Hagendijk 2004; Wynne et al. 2007), namely, the so-called deficit model, the Public Understanding of Science and Public Engagement with Science. Felt (2003) and Callon (1999) also add recent developments as a distinct fourth approach. In contrast to the first three, the fourth is not borne so much out of the analysis of scientific research, but represents mainly the critique of previous approaches.

These accounts deal, on the surface, with approaches of social scientists to researching this relationship, yet they reflect quite distinct paradigmatic positions, as they differ in ontological, epistemological and axiological positions in the way they frame the problem of the relationship differently, ask different questions and, to some extent, propose different solutions (Bauer et al. 2007, 79).

The approaches are represented and grouped here according to the time they sprang up, this by no means suggests that they replaced or even just overlapped each other; all are present in current scientific discourse. This also means that the first model – the deficit model – is not just the beginning of a linear progression – it is aptly also called the *dominant* model of popularization, because it is "still implicitly or explicitly widespread" (Bucchi 2008, 57).

3.3.1 The deficit model - Scientific literacy and the dominant model of popularization

The relationship between science and the public was first researched through studies of science popularization and studies of scientific literacy. The first comprised of textual studies, which viewed the role of the popularization of science in translating or mediating science for the uninformed public, because it was assumed that science was too complex and complicated for the public to understand. The translation was seen as not just a mere simplification, but a translation between two distinct discourses in which the scientific "originals" were "debased" and the information "simplified, distorted, hyped up, and dumbed down" (Myers 2003, 265, 266). Studies in scientific literacy sought to find out the extent to which the public held any knowledge of science and was researched by doing surveys. The surveys measured only "textbook knowledge", quizzing individuals rather than trying to ascertain their understanding or capacity to "grasp the implications of science" (Hagendijk 2004, 43).

In both cases scientific research had the same underlying assumptions. First of all, science was seen as authoritative and superior because of its "specific form of rationality" (Felt 2003, 5). Secondly, the responsibility for the bad relationship between science and the public, i.e. the rejection and fear of scientific developments, was put squarely on the public as passive and insufficiently literate (Bauer et al. 2007). In one case, scientific knowledge needed to be translated and "debased" so that the ignorant public could understand; and in the other, surveys of scientific literacy framed the public as a "statistically constructed social category, composed of irrational individuals" (Sekloča 2010, 92).

And lastly, the dominant view of communication of science was that of a linear model of communication, pedagogic and paternalistic (Bucchi 2008, 58). This also meant that the negative responses to scientific developments could, besides the public, be blamed on the translators and mediators – the mass media. In the late 1970s amidst growing criticism the linear model was amended. For certain, science communication was still aimed at educating the ignorant public, yet it was now seen as a narrative, as a performance, aimed at constructing a vision of science (Felt 2003).

Those whose understanding of the relationship between science and the public follows the deficit model see what they call "the public" as an audience - an aggregation of naïve or ignorant spectators and pupils, who, in contrast to scientists, have no access to the truth. This understanding, in turn, also gives a rationale for decision-makers to disqualify the public from participating in decision-making (Bauer et al. 2007, 80).

3.3.2 The emergence of PUS – Public Understanding of Science

In the mid-1980s the United Kingdom's Royal Society's report on the *Public Understanding of Science* (1985) supposedly signaled an immense shift in the relationship between science and the public. The attitude at the time was that the public was not positive enough: "there are dangers citizens will become negative or outright anti-science" (Bauer et al. 2007, 82). The focus therefore shifted from research of science communication itself to its uptake in the public. The goal was to figure out how to make the public understand and propose best practice models in order to achieve this.

Communication with the public would bring knowledge and understanding and there was an assumption that with knowledge people will be more encouraged to appreciate and support science – "the more you know, the more you love it" (Bauer et al. 2007, 83). Through this approach the public was framed as "in need of enlightenment and persuasion" (Nerlich et al. 2010, 104), although it was science which was in need of support. The context that is most often cited as the start of the

move towards the public understanding of science is the Royal Society's report, published in 1985, yet the political and economic context of the defunding of science during the Thatcher years is seldom mentioned (e.g. Yearley 2005).

There now was support for public participation in decision-making processes, under the condition that the public be educated and have an understanding of science. In essence, the "diagnosis of a *public deficit*" remained (Bauer et al. 2007, 82). The public's criticism was seen as "an expression of irrational social reactions" (Wynne et al. 2007, 54). Because of lack of knowledge, the public was seen as "easy prey" for beliefs, superstitions and passions (Callon 1999, 82, 3). Therefore the only way to dispel the public's fears and gain acceptance, trust and recognition was through education and communication. And despite the focus on the public uptake of science communication, in the PUS model, more often than not, the public was dealt with as a whole.

As in the deficit model science was seen as the dominant (epistemic) model of knowledge production. In the designation *Public Understanding of Science*, "understanding" often meant the assimilation of scientific knowledge, including framing, assumptions, the conceptions of society underlying and influencing scientific practice (Irwin & Wynne, 1996) and is still "confused with public *acceptance*" (Wynne et al. 2007, 55). Science, in this model was represented as unproblematic and neutral, i.e. value free.

The PUS model does not represent a significant change in a paradigmatic sense, but this is exactly the reason to distinguish it from the others. With the emergence of the PUS model, and especially with the program set forth by the British Royal Society, this field of research took off with the corollary of new societies and journals established specifically devoted to this type of research. The PUS model has also been lauded as an evolution and ignored the perseverance of not just elements, but also underlying positions and assumptions in later research and implementation - or what Wynne (2006) called the "multifold reinventions of the public deficit model explanation for public alienation" (216).

3.3.3 The splitting off of PEST – Public Engagement in Science and Technology

The PEST model represents a line of research that split off from the PUS movement in the 1990s in response to the criticisms of the (still) deficit view of the public. The PEST model problematizes the rigid demarcation between science and the public, especially the exclusion of public attitudes toward science and technology (Hagendijk 2004). Before this approach scientists viewed the public as a (national) whole and not as multiple, ever-changing publics that form around a specific issue. Thus, they underestimated or underplayed the development of more attentive or engaged publics or lay local experts with rich experiential and local knowledge (see Mercer 1998).

The PEST model pointed out that the lack of trust or consensus between science and the public cannot be whittled down to mere lack of knowledge or understanding, but that the interested public often has specific knowledge that is in conflict with scientific knowledge (Yearley in Sismondo 2004, 168). The responsibility here for the first time shifted from the public to the scientists and their institutions "who harbor prejudices about an ignorant public" (Bauer et al. 2007, 85). Therefore the way forward to rebuild public trust was not through education, as in previous models, but through public participation and dialogue and "more complex learning/communication processes" (Wynne et al. 2007, 55). There was a realization that the public is not bare of rationality (Felt 2003, 10), but that there indeed existed a specific public knowledge that was complementary to that of science. Whereas on the scientific side, there was a recognition of the deficiencies - uncertainty, incompleteness, abstractness as well as the unintended consequences of omissions, scams and controversies.

3.3.4 The democratization of science as an outshoot of PEST

Since the 1970s the notion of public participation has become a mainstay in political discourse and there have also been many calls for the democratization of science[15]. The majority of these calls for the democratization of science can be divided into two general categories.

On the one hand, they tend to deconstruct scientific knowledge to show its (veiled) assumptions, uncertainties, or, more generally, its co-constructedness with local (historical, cultural) contingencies, and proceed to romanticize the knowledge of lay people (as more authentic) (Mercer 1998, 81), whether it be local, indigenous or born out of practice (e.g. Irwin 1995). As Einsiedel (2007) wrote: “they [publics] have also been romanticized for their participatory instincts, collective wisdom, or consistent interest in what is just and good and fair” (5). These accounts also imply an epistemological gap, where the public is seen as a "reflexive agent" and experts as unreflexive (Durant 2008, 5), trapped in the confines of a rigid scientific culture, which could be misguided or biased. In both cases, both categories of agents are thus essentialized and pitted against each other.

Others call for public participation only in cases of scientific uncertainty or in the case of complex social problems, which explicitly include issues of social values (e.g. Bijker, Bal & Hendriks 2009). In these cases the “scientific way of knowing” is not enough and forces scientists to look beyond “the facts” (Carolan 2006, 661). This in turn means, that in cases, which are not so complex, science can proceed along the usual, orthodox manner (ibid.).

Both categories thus postulate science as an objective, exact way of attaining facts and getting closer to “the truth”, where there is no place for values or uncertainty. The deconstruction of the first group is supposed to reduce the credibility of science by, although not explicitly, juxtaposing it to the ideal of science. The second group by calling for participation only in complex cases, and not in others, “cleanses”

[15] Democratization of science in most cases does not refer to public involvement in deciding “actual research practices” but rather to participation in decision-making processes that involve science (Lengwiler 2008, 187).

social problems by delimiting "scientific" and "political" components and thereby distances science from the question of values (Hilgartner 2000, 4; Jasanoff 1987; Carolan 2006).

The same could be said for the much touted concepts of "Mode 2 science" and "trans-science" (Gibbons et al. 1997; Weinberg 1972, respectively) that supposedly came about in order to solve new complex social situations, interdisciplinary in nature and intertwined with values. The concept of the new Mode 2 science implied that "science could no longer be regarded as an autonomous space clearly demarcated from the 'others'" (Nowotny et al. 2001, 1) and is becoming highly contextualized and chronically uncertain. On the one hand, this implies that uncertainty or "cognitive indeterminacy" is not intrinsic to science (Jasanoff 1987, 201), but is rooted in the political process in Mode 2 or the staple of immature science in Mode 1. On the other hand, it implies that in so-called Mode 1 science, or what they in a later book call "reductionist science" (Nowotny et al. 2001, 19), scientific knowledge is determined by "reality", forgetting that even "defining the scientific questions to be asked […] is itself a value laden and political act" (Demeritt 2006, 467).

In terms of ontological position the PEST model, including the theorizations of the democratization of science, shifted towards a more relativistic position, but epistemologically still shares with the PUS model "a common obsession: that of demarcation" (Callon 1999, 89). Not only does the PEST model still position science as neutral, but again positions science in a superior position – although both the public and science contribute to the decision-making process, the public's views have no impact on science itself. The public here was at least elevated from being a supporter and ally to a participant and provider of complementary knowledge and was not reduced to being just "a construct, imagined and indirectly performed by science" (Wynne 2008, 28).

3.3.5 Critical approaches to the relationship between science and the public

The fourth category represents recent approaches, which are in essence critiques of previous approaches and normative accounts on the relationship between science and the public. The focus of these approaches is on the importance of dialogue and deliberation, the creation of new forms of interaction and participation that would sustain two-way communication. The role of the public here has evolved from naïve spectator, witness, supporter and ally or participant, to partner.

In these approaches, for the first time, the relationship between science and the public is not problematized only as regards the public (Bucchi and Neresini 2008, 450). In a critique of the calls for the democratization of science or "civic science" Bäckstrand (2003) notes that most of the focus has fallen on the inclusivity and form of participation of the public, but not on the question of these same issues within scientific institutions and the consequences thereof: "Left out are the questions of skewed representation in the production of science, which is dominated by white males, and the question of incorporating democratic principles into the institutions of science" (167,8).

With regards to public participation another question raised is about the process in which participation should take place: too often the public is included at later stages and not at the stage of problem definition, agenda setting, policy forming, etc. (Bucchi and Neresini 2008, 449), which prevents the public to voice disagreements about the underlying assumptions, especially about society, within policy proposals or the scientific knowledge on which they are based.

These critical approaches are best represented by the work of Brian Wynne, whose work epitomized the PEST approach, but has since become a stark critic of the previous models. He does not deny that there are differences between scientific and public knowledge, but that the main difference lies in the disparity of "epistemic power" (Wynne 2008, 24). Both scientific and public knowledge are expressed from within their own "frameworks of meaning, experience and value" and in essence both are not beyond contestation (Wynne et al. 2007, 60). The issue of power here lies in

the fact that expert positions are “posed as if they were beyond reasonable and legitimate contestation” (ibid.). In order to combat this, he proposed a self-reflexive “project” for scientific fields, to recognize the conditionality and co-constructedness of their knowledge, which could result in greater acceptance by the public (Wynne 1996). For the research of communication of scientific knowledge in public, though, he proposes a “more thorough reflexive turn”, that is to research how scientific knowledge is constructed and projected or “performed” in society and analyze the “implicit models of the human subject, social relations and culture” (Wynne 2005 69).

These critical approaches are few and far between – the deficit model still remains the dominant model. Trench (2008) suggests that (for him) this is not a case of hierarchy between these dominant models, but that all of them have their own appropriate use in particular circumstances. That research on, for example, the Higgs boson and societal poverty require different approaches is obvious, yet engagement with the public could be beneficial in both cases, if nothing else, public input could stimulate “greater self-reflection *within* science” (Macnaghten et al. 2005, 281). And especially when keeping in mind, that when the case is not so clear cut, the decision on which model is "appropriate" is not decided by the public, but for the public.

In much of the research and writing referenced to above, science is often dealt with in an essentialist manner, not differentiating between different disciplines or fields of research and often not differentiating between national contexts. Social science is not (explicitly) dealt with at all. The question then is whether these approaches could be found also in social science research. The main difference that could have an impact is that since society and processes within it are the objects of their research and therefore their work is inherently political (in a broader sense), the gap is harder to base on the arguments of co-constructedness and value exclusion. This could vary, e.g. according to the level of mathematization and quantification of the field or subfield of research.

3.4 BOUNDARY WORK AND THE CONSTRUCTION OF AUTHORITY

The dominance of the deficit model, or more broadly the notion of demarcation between scientific and public knowledge means that the (potential) positive role that social scientists could play in the public sphere is limited not only by the directives from outside the scientific sphere (science policy, administrations' directives and restrictions) but also by *scientific cultures*.

On the one hand, their potential contribution is undermined by "traditional scholarly collegial hierarchies" and by "the dynamics of status competition" (Marginson 2006, 53). Despite the myth about science as inclusive, universalistic and egalitarian, scientists also engage in "hoarding and accumulation" of knowledge (Calhoun, 2006). On the other hand, in the struggle for the autonomy of science, social scientists resist the concept of social relevance determined by others, as well as other criteria in the context of decisions about science funding. The reactions to these impositions into what was supposed to be a self-regulatory institution, as e.g. calling it "the politicization of science" (Hoppe 2005, 204), have sometimes culminated in trends of self-isolation (see e.g. Bender, 1993).

In terms of epistemological openness, the essential difference of scientific knowledge from public knowledge is the foundation for the (construction of) authority and autonomy of the scientific sphere. What demarcates science from other spheres and practices considered by scientists as non-science, are not the inherent characteristics of science itself; this difference is constructed through what is known as boundary work[16].

Boundary work, as defined by Thomas E. Gieryn (1999), are the discursive practices by which scientists attempt to attribute selected qualities to science in order to draw a "rhetorical boundary between science and some less authoritative, residual non-science" (4, 5). Scientists through boundary work construct and maintain the identity of the scientific sphere, but the processes and attributed characteristics depend on "the other", on the one from which they are trying to distinguish

[16] For a broad review of boundary research, not just in science, see Lamont and Molnar (2002).

themselves, be it other disciplines, pseudo-science, the political sphere, the public, the economy etc. In comparison to other "non-constructivist" approaches, Gieryn focuses less on structural forces, but attributes the achievement of epistemic authority to the actions and practices of scientists themselves (ibid., 25, fn.18).

Gieryn designates three genres of boundary work: expulsion, expansion and protection of autonomy. The genre of expulsion refers to a contest between "rival authorities" where both claim to be scientific (ibid., 15, 16). The aim of this genre of boundary work is to police the border, i.e. push out or marginalize the "posers" out of the sphere of "real science": pseudoscience, amateur science, deviant or fraudulent science, bad science, junk science or popular science (16).

The genre of expansion refers to the contest of rival epistemic authorities in order to attain control over a disputed/contested ontological domain (Gieryn 1999, 16.). The aim of this genre is for science to attain the power to define and explain natural reality; that is demarcate science from less reliable, truthful and relevant sources of knowledge – the political sphere, religious groups, sections of the public; in general, those who challenge the "exclusive right of science to judge truths" (ibid., 16, 17).

The genre of the protection of authority refers to the boundary work with which scientists try to purify science, "to protect their professional autonomy over the selection of problems for research or standards used to judge candidate claims to knowledge" and draw boundaries between what they do and consequences downstream (Gieryn 1999, 17). This genre does not reflect a struggle for epistemic authority, but the scientists' reaction to the incursion of others into the (formal and informal) rules and regulations of their practices. Scientists construct "interpretive walls" to purify science when "outside powers" want to utilize science in ways that scientists deem will compromise their material and symbolic resources (Gieryn 1999, 17). For example, the important mechanism of peer review can be understood as part of this genre – with it scientists deny the possibility of evaluation not only to non-scientists, but also scientists from other fields of research.

The processes and practices of boundary work need to be understood more broadly than just intentional “ideological strategies” aimed at securing academic recognition and “maximization of scientific profit” and the “monopoly of *scientific authority*” (Bourdieu 1975, 19, 22, 23). In addition to these more explicit and strategic practices, described by Bourdieu, generally boundary work comprises of routine practices that reflect “historically resonant discourses” about science as politically neutral, distinct from values, interests and opinions, about “science for the public good as well as orthodoxies of behavior for scientists and scientific societies” (Kinchy and Kleinman 2003, 871, 2, 881).

Gieryn (1999) describes boundary work in the same vain as Bourdieu (1975), that is as intentional as well as agonistic, and focuses in his analysis on larger public conflicts between scientists and other actors, during which assumptions and ascribed characteristics became explicit[17]. But boundary work is not always a reaction to an explicit threat to the credibility of science (Kinchy and Kleinman 2003, 881). It is not just episodic, but ever present in scientific discourse, “routinized as standard practice” (Evans 2009, 19) and often not reflected upon.

Here I have not focused on Bourdieu's study of science more in depth for a few reasons, although his writings represent part of the basis for Gieryn’s theory (1999, 20 fn.27). For one, in his theoretical approach, his focus on science is one of a "competitive struggle" for the "monopoly of *scientific authority*" (Bourdieu, 1975, 19). Although his writings called into question the "irenic vision" of science (Bourdieu 2004, 45), his agonistic view of (natural) sciences excludes multiple kinds of collective action (Camic 2011, 282) and positions scientists in an individualized position of struggling for prestige, recognition and fame. This one-sided view on internal dynamics, though, is not reflected in his view on modern intellectuals (including himself), who seem to escape such determinations (Basset, 1996, 523). And secondly, despite his claim to have broken with the essentializing of science by focusing on fields, there is a clear delineation in his approach to the natural and social sciences (this also pertains to my

[17] The focus on agonistic instances could be born out of the need to vividly illustrate his theory. He also wrote that ”science exists as a 'cartographic legacy', accumulated residues of previous instances of boundary work” (1999, 20).

argument above). For example, the autonomy of natural sciences is "inscribed both in the objectivity of the structures of the field and also in scientists' minds" (2004, 47) where the boundaries of this field are maintained through mathematization and desubstantialization; whereas the basis for the autonomy of the social sciences in the sense of closure is not clear. Social scientists, in his view, themselves need to be reflexive about their own assumptions and their social conditions to move towards greater scienticity - i.e. towards trans-historical, objective knowledge (ibid., 86).

Boundary work is also not as exclusionary as it seems through Gieryn's cases, because it does not preclude communication, negotiation and co-operation. Willem Halffman (2003) revised Gieryn's theory to include discourse aimed at bridging the boundary in order to communicate and negotiate with other social spheres in addition to discourse and other mechanisms of demarcation. When science is called upon to lend their expertise to decision makers, boundary work cannot be understood only as isolating science from non-science. Halffman (2003) defines boundary work in a broader sense - as a simultaneous practice of demarcation and coordination:

> *Boundary work defines a practice in contrast with other practices, protects it from unwanted participants and interference, while attempting to prescribe proper ways of behaviour for participants and non-participants (demarcation); simultaneously, boundary work defines proper ways for interaction between these practices and makes such interaction possible and conceivable (coordination). (70)*

For instance, when scientists communicate with decision-makers or the general public, their knowledge is packaged as expertise. Through the way scientific knowledge is translated and framed, scientists "perform boundary work" distinguishing science from non-science (Halffman 2003, 65). Boundary work performed by crossing or reaching across the boundary between science and non-science, therefore, upholds the communication between them not by blurring or weakening the boundary, but (re-)enforcing it by *setting* the conditions under which communication or cooperation can proceed.

The conception of boundary work, on which I will be relying in my analysis of the scientific and public discourse of social scientists, does not encompass the whole dynamic of the relationship between science and other social spheres. For certain, the emphasis of a large portion of research on boundary work is on the drawing and realigning of boundaries that demarcate the field, but, more recently, researchers have focused on boundary objects, people and forms of organization that function as interfaces between e.g. science and politics. The following is a short representation of two of these concepts: boundary objects and trading zones.

Boundary objects lay on the boundary between science and non-science. They serve as a bridge between two spheres, but still withhold the boundary. Susan Star and James Griesemer (1989), who coined the term, define boundary objects as follows:

> *This is an analytic concept of those scientific objects which both inhabit several intersecting social worlds […] and satisfy the informational requirements of each of them. Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. (393)*

Since boundary objects can also assume the form of a "rhetorical construct" (Wilson and Herndl 2007) we could consider the concept of "sustainable development" as a boundary object, bridging the boundaries between multiple different practices, sciences, disciplines, etc. yet it needs to assume a "common identity across different sites" (Star and Griesemer 1989, 393) or communities of practice. Due to the indeterminacy of this concept, though, it is difficult to perceive which boundaries it would bridge.

Besides conceptualizing the interface between science and non-science as an object, be it abstract or concrete, the interface was also conceptualized as a space – e.g. a trading zone. A trading zone is a provisional space for cooperation and exchange across the boundary. As with boundary objects, a trading zone bridges and enforces the boundary. Peter Galison (1997) introduced this concept and designated the characteristics of it:

> *Two groups can agree on rules of exchange even if they ascribe utterly different significance to the objects being exchanged; they may even disagree on the meaning of the exchange process itself. Nonetheless, the trading partners can hammer out a local coordination, despite vast global differences. (783)*

Such a trading zone could be seen in the different forms of public participation, e.g. workshops managed by scientists for public participation, where the boundary is bridged, but the conditions and preconceptions under which the events take place may enforce the boundary.

These and other approaches to researching scientific culture deal with the interface between science and non-science and the differing meanings and practices on both sides of the boundary. Yet, here I am focusing on only one side of the story – how only one side constructs the boundary, i.e. how scientists from different areas of research in the social sciences construct the boundary in a variety of forums - from (semi-)public forums dedicated to their scientific community to public forums in the news press. Because the boundary between science or indeed different fields of research and the public is not a "manifest boundary" (Tuinstra et al. 2006, 352), understandings of it by actors on either side can differ substantially – they do not necessarily coincide.

Whether the scientists' boundary work is effective, i.e. whether the public deems science to be credible, authoritative or salient cannot be surmised from the analysis of these texts. In order to contribute to public knowledge, social sciences must build trust in the public sphere. But trust does not stem from mere authority, symbolized by academic titles and achievements, or based on mechanical objectivity. Only through seeking a balance between credibility, legitimacy and salience can science gain the trust of the public (Irwin and Wynne 1996, Wynne 1996, Cash et al. 2002; Lindskog and Sundqvist 2004). Yet the public and scientists understand these attributes differently (Cash et al. 2002, 1).

For scientists credibility and legitimacy of knowledge is denoted by the validity and reliability of their findings, in the public eye, however, reciprocal communication processes are essential. Credible knowledge must be socially robust, responsive to new

interpretations, applications and implications. In order to achieve legitimacy of knowledge in the eyes of the public, i.e. “fairness” of the processes of knowledge construction and consideration of all relevant values, perspectives and circumstances (Cash et al. 2002), it is crucial to include others who can contribute important knowledge to the research of society.

3.4.1 Boundary work in the social sciences

Research on science, theoretical as well as empirical, mostly deals with natural and technical sciences; social sciences were studied “on rare occasions” (Crawford 1971, 24). To be sure, there is plenty literature focusing on issues other than those in this thesis: the research and writing that has been done has, on the one hand, been the social sciences own “*prescriptive* literature on knowledge making”, i.e. manuals and handbooks; on the other hand, the so-called “traditional approach” to researching social science has produced multiple studies focusing on particular social thinkers and on the history of a particular idea (Camic et al. 2011, 6, 7). Research on scientific culture, though, on different (everyday) practices and the communication of science, therefore also boundary work, has focused mainly on the fields of natural and technical sciences; in the last decade, some attention was paid to the “most conspicuously ‘scientific’”, that is mathematized, social sciences (ibid., 1, 7).

To what extent the findings about the scientific culture of the natural sciences are pertinent to the social sciences is an important question, because often the natural sciences in the fields of philosophy and sociology of science, science and technology studies, etc. serve as a normative model of science, in the context of which the social sciences may not even fall within the category of “science” (Bijker et al. 2009, 27). The scientific discourse on boundary work focuses mainly on questions of authority and

credibility and sometimes tends to veer to a quite stark, dramatic tone. For example, Jasanoff (1987) wrote the following[18]:

> *At the same time, exposés of uncertainty and disunity in science undermine public confidence and raise troublesome questions about whether scientists really deserve the symbolic and material rewards they have claimed from society in this century. (198, 9)*

On the one hand, this tone could be a result of the selection of cases discussed, which are quite often controversial issues e.g. the science and politics of climate change. On the other hand, because the focus is mostly on natural sciences, issues of credibility and questions of uncertainty are much more detrimental to the self-perception and the public perception of those disciplines. The social sciences have been marred in different perception "battles", most commonly about their status as part of the sciences, i.e. questions about the validity of their methods and produced knowledge and being nothing more than glorified common knowledge ("so-called research") on the one hand, and questions about the impartiality and disinterestedness of social science on the other. The potential differences therefore could stem from the perception or even knowledge of social scientists that members of the public themselves do not distinguish social science from common sense and indeed believe their understanding as on par with that of scientific knowledge (Evans 1995, 169).

By understanding boundary work as an inherent part of scientific culture which is enacted not just overtly and in response to controversial issues but also everyday practices allows us to analyze the discourse of scientists about public problems, the public as well as their own work as a way of inscribing a certain relationship between scientific and public knowledge.

As can be seen in Burawoy's categorization of scientific labor as well as in the different approaches to the relationship between scientific and public knowledge in the research of science and technology, that the practices that are called and deemed

[18] The article deals with the issue of the regulation of risk – in this case on controversies of carcinogen regulation, but the quote above is a general statement.

public often refer to practices *in public*, that are generally accessible, and that through these practices scientists are not addressing publics, as "discursively acting social categor[ies]" (Splichal 2011, 12), but address their audiences.

While the one-way communication of scientists cannot unilaterally be deemed restrictive or unproductive, since there is a differential of knowledge as well as agency within the public, the scientists' understanding of their own role, the role of the public and the relationship between the knowledge that they hold are important indications of what role they can play in the public sphere.

4 SOCIAL SCIENTISTS AND SUSTAINABLE DEVELOPMENT IN SLOVENIA: A CASE STUDY (OF ENGAGEMENT AND BOUNDARY WORK)

Sustainable development has become in the last decade, at least on a declarative level, one of the key goals in international politics[19]. Yet, as a complex social goal (and also as an object of research) it is extensive and ambiguous, both in professional and public discussions. In public and political discourse, on the one hand, the rate of use of this concept has rocketed; on the other hand, the discussions display an ease and level of simplicity, without regarding sustainable development as a complex social problem.

The research and writing on sustainable development as a case is suitable for several reasons. The goal of sustainable development is an example of a new postmodern social problem; as a complex of the »unintended consequences« of global technological, economic, political and cultural development (Beck et al. 2003, 2) it is not bounded spatially, temporally or causally, and thus less identifiable and controllable (Beck 2002, 4). Reaching the goal of sustainable development requires reflection on priorities and conflicts of interests and, above all, should be considered as a political problem. It thus cannot be the exclusive domain of scientists, decision makers or economic actors. The changing relationships between science, expertise and citizens in democratic societies in the case of such social problems raise the question of promoting the participation of all those who are significantly and/or in the long-term affected by the consequences of the actions of others, whom citizens can not directly influence.

International policy documents portray citizen participation as an essential part of sustainable development. On the one hand, it is important in itself – as an integral part of the pillar of social development or even a separately standing principle (Baker 2006; Murphy 2012; Jacobs 1999). On the other hand, the participation of the citizens is deemed necessary, because achieving sustainable development requires a radical change in attitude towards the environment, social equity and political power.

[19] For a genealogy of the concept of sustainable development see Banjac and Ilc 2012a, Redclift 2005; a more broad history in Elliott 2004.

Participation in the decision-making process would lead to a greater legitimacy of political decisions, a basis for shared responsibility and support for long-term implementation of policies and motivation for lifestyle changes (Macnaghten and Jacobs 1997, van den Hove 2000, Rogers et al. 2007). Advocates of public participation in decision-making processes see it as the only way to achieve effective individual solutions and see gaining a consensus among experts, politicians, various stakeholders and citizens as imperative (Swyngedouw 2007).

However, the primary goal of the inclusion of the public should not be seen merely as a way to gain consensus and thus potentially marginalize conflicts of interests and values implicit in the concept. Public participation must not be supported solely for instrumental reasons – as a way of gaining formal legitimacy and constructing the basis for the delegation of responsibility to individuals. Only an inclusive dialogue can bring about a common understanding of sustainable development, a critical rethinking of the concept and deliberations about policies and their underlying/guiding assumptions (Irwin 1995; Læssø 2007; Walker 2007).

The concept of sustainable development has become a catchword in public and political discourse while retaining a flexibility of meaning. With this plethora of possible interpretations there is a risk of the concept becoming void of meaning. In this context, a struggle for the ownership of the concept is taking place, a struggle for the power, authority, and influence to define the reality of the problem (Gusfield 1981, 10).

In the case of Slovenia, research has found that the prevailing understanding of sustainable development present in the political and economic sphere and (consequently) presented in the media can be classified as a weak conceptualization of sustainable development (Banjac and Ilc 2012b; Vobič et al. 2014, forthcoming). This means that sustainable development is seen as more or less the continuance of the current model of development – characterized by the categorical imperative of continuing economic growth, which is limited only by human ability, not natural resources – with some adjustments or incremental changes, especially in the realm of additional environmental protection through technological innovation and changes in

consumer behavior (Banjac and Ilc 2012b). This is not particular for Slovenia, though, if anything, the appearance and usage of this concept has lagged behind developments in other counties and globally (ibid.). In addition, there is a high occurrence of the "empty" usage of the phrase, that is, mostly adding the adjective "sustainable" into documents, reports, strategies or news items without any reference to its meaning (Vobič et al. 2014, forthcoming; Banjac and Ilc 2012b).

By framing sustainable development in its weak variant the responsibility for reaching it is placed onto the market, technological innovations and individuals as consumers. Moreover, it implies sustainable development as a measurable outcome (in sustainability reports, certificates, benchmarking) which makes it a technical, not a values issue (Banjac and Ilc 2012b, Slaček Brlek 2014, forthcoming). It is thus deprived of the characteristics of the concept as global, holistic, political, and future-oriented, thus depleting the problem of sustainable development of its political character (Hamm, 1999).

A greater variety, including more transformative and radical conceptualizations of sustainable development can be found in Slovenian civil society, in the work and writings of non-governmental organizations (Banjac and Ilc 2012b). Even though environmental NGO's were crucial in ushering in this concept as well as popularizing it, in Slovenia and globally, due to their structurally inferior position, especially in terms of finances, they were not the ones guiding its institutionalization in laws and in key development strategies of the Slovenian state (Vobič et al. 2014, forthcoming).

The question arises, whether the social sciences contribute to this prevalent depoliticized discourse on sustainable development, which excludes the public from debate, or whether they promote different conceptualizations.

The social scientists that substantively add to the research on sustainable development in Slovenia are few and far in between. The sample of scientists[20] that is the focus of the empirical part of this thesis represent the most prolific writers. As Becker, Jahn and Stiess (1999) note, this part of the community has remained on the

[20] The sampling procedure as well as additional information on the sample are included in the appendix. (see Appendix A)

margins of scientific disciplines, where research is done in isolated, environmentally oriented subdisciplines, without significant impact on mainstream social sciences.

While this can be seen in the representatives of the following fields (according to SICRIS[21]): economics (three scientists), urbanism (two scientists), pedagogics (one scientist), forestry (one scientist), theology (one scientist), sociology (two scientists), political science (one scientist), environmental protection (one scientist); this does not hold for the field of geography, which dominates the field of research on sustainable development and consequently also the sample with eight scientists. Their greater numbers in relation to other social science disciplines cannot be written up to just the interdisciplinary nature of their field – bringing together knowledge on the natural environment and knowledge on human activities and interactions. A driving force can be seen in one of the geographers in this sample, who is not only one of the first scientists to write about sustainable development and the most prolific, but has also written programmatic calls for the Slovenian field of geography to work on sustainable development in order to reintegrate the field, raise its social relevance and regain their territory in environmental issues, that have become dominated by the natural sciences (e.g. 40.13., 40.23, 40.28[22]).

This chapter thus aims to answer the following questions: how do these social scientists conceptualize sustainable development and what role within it is given to the public, in terms of either causal or political responsibility. Furthermore, is their discourse on sustainable development homogeneous or fragmented within the social sciences and in the case of the latter, is there a difference between fields of research or are there other dividing factors.

[21] In the SICRIS database (Slovenian Current Research Information System) each scientist is attributed at least one code that denotes their field of study (similar to the OECD Frascati Field of Science and Technology Classification).

[22] In the thesis I have opted to not refer to the scientists by name, because I feel it is not relevant for the analysis itself; it also is a way of ensuring a level of confidentiality for the information generated through the interviews with them. The analysed texts were assigned a unique identification number; references of scientific and media texts are ordered accordingly (in subchapters 9.2.1 and 9.2.2, respectively).

4.1 ANALYZING CONCEPTUALIZATIONS OF SUSTAINABLE DEVELOPMENT: METHOD AND FRAMES OF ANALYSIS

In order to study the different conceptualizations of sustainable development I used the research method of discourse analysis. This method is concerned with the production of meaning through texts, with how discourse inscribes a specific way of understanding (Tonkiss 2004, 373); as a qualitative and anti-essentialist method it is most fitting for the aims and paradigmatic position of this thesis.

This thesis uses the method of discourse analysis – that is, a close reading of the texts, in this case scientific[23], media texts[24] and interview transcripts[25] – throughout, yet the analysis of the conceptualizations of sustainable development is primarily focused on the scientific texts of the Slovenian social scientists in the sample. This relates to the specific social contexts in which the research data was generated and their potential impact – the scientific texts were published over a span of over 15 years, whereas the interviews were conducted in May and June 2013 after a whirlwind of events in Slovenian society, especially growing austerity and large public protests – which limited the possibility of triangulation of data.

In line with the methodological approach the analysis of conceptualizations was informed, but not limited by previous attempts to categorize different discourses on sustainable development.

Most writing on the discourses of sustainable development base their categorization on the "ladder of sustainable development" of Susan Baker (2006), on which she identifies four rungs – the model of pollution control, weak sustainable development, strong sustainable development and the ideal model (28). These four

[23] The scientific texts of the twenty scientists were collected and analyzed in full, except in the case of the three most prolific writers, where an unsystematic sample was chosen in order to reach saturation (all together 255 scientific texts). (see Appendix B)

[24] Media texts, where the scientists were a source in or the author of the text, were collected from the websites of the four main daily newspapers: Večer, Dnevnik, Delo and Primorske novice (all together 151 media texts). (see Appendix C)

[25] Sixteen in-depth interviews were executed and analyzed, thirteen with the final sample of scientists and three additional scientists from the preliminary sample in order to cover all different fields of research as well as employment categories. The interviews were semi-structured and all except one done face-to-face. (see Appendix D)

models are distinguished by ten aspects of sustainable development: normative principles, type of development, nature, spatial focus, governance, technology, policy integration, policy tools, civil society – state relationship and philosophy (ibid., 30-1). Yet, it was developed as a heuristic device "for understanding the variety of policy imperatives" (ibid., 30), where these ten aspects do not necessarily represent variables and as such do not allow for the analysis, but only the classification of other discourses into the four models, which would assume a certain “consonance between different facets of each position” (Connelly 2007, 266).

The typology proposed by Baker (2006) as well as others (e.g. Hopwood et al. 2005; Jacobs 1999; Offermans et al. 2011; Connelly 2007; etc.) were developed primarily for the analysis of policy documents and strategies that include the policy imperatives to be aligned or classified with a certain rung and are not so readily applicable to other types of texts, for example, theoretical or normative scientific writing. The following analysis thus follows a more inductive path, yet informed by these approaches, especially to uncover potential silences within scientific discourse.

The reoccurring aspects of different typologies of discourse and which were also born out in the analysis of the Slovenian scientific texts are: environmental protection, economic growth, social equity and the role of public participation (Hopwood et al. 2005; Connelly 2007; Jacobs 1999). In the remainder of this chapter I present the scientists’ conceptualizations of sustainable development, according to these aspects; but I start this analysis by focusing on two foundational aspects of their conceptualizations that indicate their epistemological position – their treatment, or rather lack of it, of the ambiguity of the concept and their approach to the concept, spanning from more reductionist to more holistic approaches.

4.2 CONCEPTUALIZATIONS OF SUSTAINABLE DEVELOPMENT IN SLOVENIAN SOCIAL SCIENCES

4.2.1 Acknowledging and dealing with differing conceptualizations

One of the foundational aspects of the way Slovenian social scientists conceptualize sustainable development is the way they treat the ambiguity of the concept. This gives an indication of their epistemological position, that is, on the one hand, whether they acknowledge different conceptualizations at all or deem those different to their own as erroneous, or on the other hand, whether they view different conceptualizations as rhetorical claims that are mobilized in discourse. Whether they acknowledge different conceptualizations or not is also related to the nature of their work; in the case of instrumental science more importance is given to the operationalization of one conceptualization, whereas in reflexive science the focus is on the assumptions underlying and shaping different conceptualizations.

Here I will use the differentiation of the ways of treating the ambiguity of the concept of sustainable development put forth by Connelly (2007, 260-263). He differentiates four different ways of dealing (or not) with different conceptualizations: (1) the first way ignores the complexities and ambiguities; (2) another way notes the ambiguity of the term and resolves this by "selecting a specific, preferred interpretation"; (3) the third way of dealing is more analytical and makes the ambiguity of the concept explicit by presenting a typology of conceptions; (4) the last way pursues the understanding of how the concept "is developed and used as a concept", seeing definitions as rhetorical claims and recognizing multiple legitimate meanings (ibid., 260-2). Because not all texts of one author will fall under one category, e.g. a geographer researching environmental degradation would publish papers with more or less discussion surrounding the data, the scientists are grouped according to the most relativistic approach within their whole body of work on this topic.

The first way of dealing with the concept of sustainable development is present in the writings of five of the twenty scientists. They seem to take the precise definition

or conceptualization of sustainable development *for granted* – that is, they do not explicitly or clearly write about what they mean by the term. In these specific cases, though, some treat the concept as normalized – e.g. just referring to sustainable development in the introduction and theoretical part of the text in order to establish context and using sustainable development as the guiding principle underlying their work. Whether this is an indication of their epistemological position or due to the nature of their work is not possible to assess based on only this aspect.

The second, *objectivistic approach* is representative of the writings of eight of the scientists, which makes it the most prevalent way of dealing with different conceptualizations. In their writing they note that there are ambiguities in the term and/or that others understand it in a different and what they deem erroneous way. The former is much more prevalent, though, with scientists writing that it is a vague and fashionable term. One of the interviewees even said that he has refrained from using it, opting for other terms to denote the meaning, because it sometimes includes everything and sometimes nothing at all.

The latter mostly criticize the understanding of sustainable development as sustained growth. They explicitly see this understanding as erroneous, but also note that the "misuses" of the term can to some extent be attributable to the disunity of different fields of expertise (16.3.; 40.96.). In one of the most explicit critiques in this grouping, the scientist points out that there is a need for a more "concrete and useful definition" (39.1., 9), because the vagueness and looseness of definitions plays in favor of capitalists and politicians who subordinate social and environmental aspects to the support for economic competitiveness (39.8.; 39.1.)[26]:

> *we live in an era of development in separated segments, when governments try through the magic of sticking new adjectives to the dogma of development to obscure the view on the negative consequences of the development concept.*[i] *(39.1., 12)*

[26] The block quotations in the following chapters were translated by the author, the original text in Slovenian is included in the endnotes. When there is no endnote, it means that the original was in English. Information gained in the interviews is added, with quotes cleaned in translation of non-verbal utterances and filler words.

Rejecting other understandings as incorrect as well as undesirable, all of the scientists in this group, in the end, “select” a preferred definition, which in the majority of cases is the so-called Brudtland definition or amend it to a lesser extent. This definition, arrived at in the Brudtland Commission (UN Commission on Environment and Development), states that sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987). That this definition is so prevalent is to some extent not surprising, since this report launched the concept of sustainable development into mainstream (international) politics, and is thus seen as the "founding definition" (Connelly 2007, 261; Banjac and Ilc 2012a).

Only three of the scientists take the third approach that takes a more *analytical* and to some extent relativistic view, not only noting the differences between conceptualizations, but in their writing using or referring to a typology of conceptualizations, usually along one axis, e.g. the weak to ideal conceptualization continuum. These also, explicitly or not, choose their preferred position along this (or other) continuum. Here, as well as in the previous groups, it is also possible to discern a difference between different types of texts – in texts relating to empirical research and concrete implementation strategies their preferred definition is much more explicit, or is even directly stated, than in more theoretical texts. While this approach to some extent acknowledges “the intellectual legitimacy of alternative interpretations of the concept”, it does not delve into the ways they are shaped or the underlying reasons for them (Connelly 2007, 262).

The remaining four scientists, who delve even deeper and represent the most *relativistic* of the four approaches, write about how the concept is socially constructed – how it has developed, either in scientific or political texts and connect differences and changes with underlying assumptions. On the one hand, two view the differences in definitions and subsequent operationalization in mainly in historical terms, reflecting the knowledge available and the focus of development questions at a certain time (23.2.; 23.13; 15.23.; 15.3.). On the other hand, two represent a more critical approach, seeing sustainable development as just one of many discourses or strategies and thus as the site of a political battle for hegemony over the concept of

development (8.2., 8.7.; 13.4.). They problematize the muddled rhetoric around sustainable development and do not view the various models as a way or reaching sustainability (8.2.; 13.1.):

> *But the conceptualizations (weak, strong) belong to a context, in which sustainability is an object with its own specific variability, not a paradigm.*[ii] *(13.13., 3)*

4.2.2 From reductionism to holism – the level of interconnectedness of sustainable development

Sustainable development rests on the combination of three aspects or pillars – the environmental, the economic and the social. On a substantive level, differences between conceptualizations stem from the different understandings of the relationship between them – that is, in terms of prioritization and substitutability between the pillars. On an epistemological level they differ in their approach to the concept, spanning from more reductionist to more holistic approaches.

The commonly used tripartite model of the three pillars or the three circles in the Venn diagram depictions are supposed to represent the interdependency of these three and a need for a balanced or holistic approach instead of a sectoral way of thinking and dealing with societal problems, yet the same image reinforces the (constructed) separateness of these three spheres (Littig and Greissler 1006, 67; Connelly 2007). While a few commented in their interviews that the "Venn diagram" understanding of sustainable development is limiting our thinking of all of these aspects at once, the writings of almost half of them follow a reductionist way of thinking. This *reductionist* group, which includes eight of the scientists, despite stating the interdependence or the need to seek a balance between these three pillars, deal with them separately and put much of their attention on the environmental pillar. One of the scientists, which I would include in this group with reservations, stresses dealing with all three equally and simultaneously. In contrast to the rest she gives great emphasis to the interconnections between them through "coincident consideration

and weighing" and "a search for linkages between the included issues or indicators" (15.2., 150; 15.3.; 15.7.).

The *emergentists* group, which includes eleven of the scientists, stresses the importance of ecosystemic approaches. While some of them describe their approach as holistic, their writings are based on the tripartite model, yet aim to deal with them in a comprehensive and in an integrated way (14.2., 28, 30) in order to achieve a dynamic balance (19.1.; 14.2.; 30.2.; 4.1.). They are also critical of reductionist approaches, especially when it comes to issues of implementation:

> *Today we know that the idea of development in sectors needs to be discarded; where the economy is developing with its own objectives, social affairs with its own and consequently the environment with its own. Actual progress and welfare are possible only as a comprehensive process.*[iii] *(39.17., 33)*

Only one of the scientists represents a truly *holistic* approach. His work focuses mainly on the issue of social sustainability and in this context he chooses "sustainability" over "sustainable development" as a paradigm through which he views social issues. Sustainability for him is a way of thinking, not an object of research, a problem or a goal and thus does not lend itself to such segmentation, but is seen as the basis for everything else (13.13.).

4.2.3 The priority of environmental protection and limits to growth

Despite the common tripartite definition of sustainable development, the environmental and economic pillars have become the main dividing aspects of different conceptualizations. The relationship between these two aspects can be seen as definitive in various typologies. While in some it is less explicit and is revealed through the descriptions of types (e.g. Connelly 2007; Baker 2006[27]), in some it represents the main factor, as for example the first fault line of Jacobs' (1999) analysis,

[27] One of Baker's (2006) ten aspects can be seen as, as she designates it, "the philosophical underpinning" of this relationship, that is, the "philosophical beliefs about nature and about the relationship between human beings and the natural world" (28).

which represents the degree of environmental protection, based on the non-/interchangeability of natural and human-made capital (31). Rather than dealing with the economic and environmental pillar separately, analyzing the relationship between the degree of environmental protection and the degree of (limiting) economic growth gives an insight also into the issues of prioritization and substitutability.

In most cases the environment is seen as a limiting factor, not only in the sense of the limited amount of available resources, but also as a case of "trading off" the benefits of one against the other (Jacobs 1999, 31). In order to differentiate them in this respect, I have clustered them according to the level of reform or transformation needed to achieve sustainable development. Here I have used the designations of Hopwood et al. (2005), who mapped different approaches according to level of socio-economic well-being and equality concerns, yet their descriptions of the groupings of status quo, reform and transformation are germane.

According to Hopwood et al. (2005) the *status quo* groups represent those, who "recognize the need for change" but seek only adjustments, not fundamental changes (42). It is otherwise characterized by a focus on technological solutions and simply limiting pollution and waste, which to some degree takes the issue out of social scientists' wheelhouses. This could be the reason that the group is represented by only two of the scientists, who see the carrying capacity of the environment as a necessary limit, but give great importance to economic growth.

For both sustainable development is seen as an upgrade to the classical concept of economic growth, which instead of having negative impacts on nature would accommodate the economy to the carrying capacities of the environment (6.5.; 6.4; 16.5.). Although, as one of them wrote, we need a big change in thinking, economic and social structures, they both subscribe to anthropocentric beliefs, seeing economic growth (within carrying capacity) as taking precedence to environmental protection. On the one hand, one sees competitiveness and economic growth as a condition for sustainable development:

> *The economy does not mean everything in an individual's life, but without the economy all of that becomes nothing. [...] Development includes the use of*

human, physical, natural and financial resources in such a way, to effectively and perspectively meet market demand and other human needs.[iv] *(6.4., 99)*

On the other hand, the other positions the limits to growth very low – in his study of carrying capacities, in order to qualify as sustainable, factors could not threaten the long-term vulnerability of nature (16.1.). Or as he wrote in another article:

The aim of sustainable tourism is the long-term optimal use of available tourism resources, but with lesser and manageable adverse effects on the natural, social and economic environment.[v] *(16.4., 14)*

According to Hopwood et al. (2005) those in the "reform" grouping are more critical of governmental policies and the workings of the economy and call for shifts in policy and lifestyle, but feel that fundamental change is not necessary (43). In the case of Slovenian social scientists two different patterns of discourse emerged that could be classified as such, the first focusing more on reform of the economy, the second on changing societal values.

The *economic reform* group of scientists, which includes six of the scientists, views sustainable development as a balance between the three pillars and acknowledges or stresses the carrying capacity of the environment as its limit. Sustainable development for them is not just an extension of environmental protection. Their writing presents a relationship between economic development and environmental protection that is not necessarily inverse. Economic development is seen as a condition for sustainable development. When looked at in an international context, the focus of the West on the environment is based on the privilege of being developed enough (15.12.). On an individual level, economic power is seen as a condition for environmentally-friendly behavior (19.14.), as well as more generally as the driver of overall development:

Economic development forms the indispensable material base of sustainable development and is the basis for human well-being.[vi] *(19.1., 53)*

For certain, unlimited economic growth is seen as a detriment, being achieved at the expense of the environment (19.1.; 15.12.), but environmental protection is not seen as in conflict with economic development, as long as the latter is moderate – not at the expense of other segments (15.27.; 19.14., 19.19; 3.7.). But where to strike this balance is and will remain an open question. This does not mean that they are satisfied with the status quo; as one of them vividly said, it is like being an acrobat on a string trying to find this balance, but we are currently cutting that same string.

The *value reform* group of scientists, which includes five scientists, is more explicitly critical of the status quo, but does not call for the transformation of the economy, but rather finds the solutions on an individual level. They call for a transformation of values and attitudes in society: from a materialistic to a post-materialistic value system focused on quality of life rather than economic and physical security (25.4., 29), to accepting nature as a value in itself (30.2., 78) and having an "appropriate relationship" with nature and the environment which means:

> *[not as] a **user**, in the worst case an exploiter of nature, a more or less wise **manager** of nature and its resources, an **admirer** of 'pristine' nature, [but one where man] is considered to be an **inseparable** part of nature and the built environment.*[vii] *(27.17., 442)*

On the level of the economy, they base the achievement of sustainable development on reforms of production and consumption patterns. They are critical of the paradigm of unlimited growth, its predatory logic (27.17.), its excessive and unbridled depletion and destruction of the natural balance (30.1.; 25.5.) but do not discuss social and political power structures underlying it. Sustainability is seen as self-discipline, self-restraint and self-denial (23.11) because the limits or carrying capacity is not a limit posited by nature itself – the limits of the environment are the limits of human interest.

The *transformation* group, which includes four scientists, goes beyond that and warns that reform is not enough, since many problems are located within the economic and power structures of society (Hopwood et al. 2005, 45). For them the current structures

and ways of thinking, that have caused our problems, cannot be the one within which we try to solve them (12.2.; 8.14.). What they call for is a radical change in our way of life and thinking (12.2), new institutions and the transformation of current social and political ones (8.7.; 8.12.) and a new economy - radical change in patterns of production and consumption with a shift from the growth paradigm that benefits only the owners of capital (39.5; 39.6).

> *The ecological crisis cannot be averted without changing the mode of production that is changing all living things, including humans, into productive resources. Two paths exist for humanity: a) a continuation of growth until eco-social catastrophe or b) a creative path towards a zero-growth economy.*[viii] *(12.2., 1129)*

As one of the scientists said in the interview, only limiting or lessening growth does not problematize the mode of production, which remains a "silent assumption".The environment here is not seen just as a limit to be tested – our resources are limited and this fact needs to be dealt with if we like it or not. Yet economic and political forces that drive strategic developmental policies do not take the environment into account:

> *in practice the economic aspect went on its own and its sole goal is capital. Capital is not interested in whether you have [enough] to survive, capital is interested only in profit, they are not interested in people; the environment also does not interest them.*[ix]

Into this category I would also position a scientist, who also stresses the need for structural changes in politics and the economy (13.11.), but also that sustainability should not be seen just as an oppositional stance to current circumstances, but a paradigm shift (13.3.). As he noted in his interview, recent developments have shown how sustainability can simply be abandoned as soon as problems arise.

Three scientists need to be set apart from the rest, because they hold two different positions at the same time – a normative and one relating to implementation, sometimes in the same, sometimes in separate texts. Their normative positions are

transformative: because we have reached and gone over the regenerative and neutralizing capacities of the environment (40.8.), we need a radical change and move away from the model that sees progress as domination over nature and focus on quality of life, not profitability (40.6; 40.8.; 36.3.). Our system of values should change to biocentricity, that is, viewing humans as an equal and interdependent part of nature (36.34.; 38.15.).

When it comes to implementation, though, their focus is on reform. Achieving sustainable development is a long-term challenge, a great cultural shift that includes changes in our thinking, behavior, in social life and in the workings of the economy, and could take decades of persistent work to achieve (36.12., 5; 40.8.). Therefore, in the short run, a more gradual approach needs to be taken, e.g. the integration of environmental goals into planning and ecologization of the economy (40.17.; 40.5.):

> *the model of a green economy represents one of the versions of weak sustainability, which is useful for a sustainable transition in the first half of the 21st century, due to necessity to eliminate global poverty and raise the general material well-being of poor people.[x] (40.8., 1148)*

The gradual approach can also be seen in the advice to entrepreneurs in which the scientists' understanding of sustainable development is "adjusted" (38.4.). Abandoning decision-making "on the basis of mainly narrow or short-term economic motives" (38.6., 442), and focusing on efficiency and responsible behavior towards the natural and social environment would ensure the long-term survival and competitive advantage of businesses (38.15., 38.17.). Especially if we consider the feudal quality of today's capitalist system:

> *the market alone can hardly assure SD and a sustainable BS [business system]. Its invisible hand may be powerless […] the visible hand of managerial hierarchies of big transnational corporations has replaced the invisible hand of markets. (38.4., 255)*

4.2.4 The question of equity: implied and not prioritized

One of the aspects of conceptualizations of sustainable development is the inclusion of the question of equity, be it spatially in terms of global resource distribution or intra-country, or generationally for present and/or future generations (Jacobs 1999, 26, 33). In spite of many of the scientists pointing out how unacceptable the paradigm of unlimited growth is, they mainly relate it to the effects on the environment – degradation, exploitation of natural resources and merely mention the questions of equity.

The issue of *intergenerational equity* is not explicitly dealt with, even though it is one of the features of the most referenced definition of the Brundtland report. Here the issue is merely about explicitness; futurity, i.e. "concern about the impact of current activity on future generations" (Jacobs 1999, 26), is a constant across all conceptualizations, with differences in the level of preservation, conservation or investment.

In contrast to many others who follow the "brudtlandian" conception of intergenerational equity, that is, conservation of resources, two scientists stress not just conservation, but how to improve the current situation through investment in the restoration of natural conditions (38.7.) and in the conditions for more qualitative development in the future:

> *The enrichment of present generations is desirable if it stems from the strengthening of the sources of well-being and improving developmental factors, for example infrastructure investments, technological development, human potential.*[xi] *(39.22., 82)*

"The Brudtland definition sets no limits", one of them said, "no time frame, no responsible party and no goal" – it basically says that the next generations should live like ours. In an article and in the interview one of them put it in stark terms: that the question of a healthy environment is not just a question of our own health or courtesy, but about the next generations, he said and wrote: "as if they hate their children and grandchildren, maybe even themselves" (38.7., 28).

If we assume that intergenerational equity is par for the course, discussion on *intragenerational equity* is lacking; eight of the scientists wrote something on this topic, mostly in passing. The most mentioned is the relationship between the global North and South or the developed and developing world. This regards the principle of common but differentiated responsibilities, where the differentiation takes into account the different levels of contribution to the state of the problem and different capacities to deal with it (Baker 2006, 36). In the texts, debates about development were criticized for their silence about the fact that development is based on the exploitation of the natural resources and of workers in the developing world (40.6.; 12.3.; 15.27.). The North has a historical responsibility for development disparities and therefore should be the one transforming its patterns of production and consumption (15.6., 251). Instead, "sustainable development" in the developed world is seen as an "export item" and thus an opportunity for growth (13.12., 258).

A similar dichotomy between the developed and developing can be seen in the discussion about the relationship between urban and rural space. Urban areas cannot (claim to) develop sustainable internally and at the same time export the burdens to the surrounding areas (19.2.; 19.20.). This means that cities need to develop inwardly by upgrading already urbanized areas, not spread out or export industrial activities to their outskirts, resources also need to be more equitably distributed between rural and urban areas (36.11.).

Some aspects of intra-generational equity are evident from the critiques of the current neoliberal model of development, but issues of poverty and the growing disparity between the rich and the poor are mostly just mentioned and rarely discussed. They call for changes in order to decrease social differentiation, for poverty eradication and strengthening social cohesion and a different wealth distribution (12.9.; 15.26.; 27.10.; 40.6.; 40.8.).

In the interviews the question of equity came up relatively more, mostly because the interviews were made at a time of economic downturn with an increase in unemployment and poverty. Whereas poverty or lack of economic power in the

articles is seen more as a consequence of unsustainable development, in the interviews it was seen more as the reason for it. In some cases, they related it to individuals' own behavior:

> *He won't look for quality if he doesn't have. If I have 2 € in my wallet, I cannot buy [something] for 4 €. Finito, here ends any story about sustainable development. And that is because the basics are not set up so that everyone has enough means for a decent life.*
>
> *[…]*
>
> *Not even mentioning the level of certain target groups. That are paid so little that they do not care, even if they have to pour sulfur on the ground, they will, just to survive.*[xii]

Without a certain level of material standard, people are dealing with saving their own skin, not thinking more broadly and are allowing the implementation of unsustainable policies. For now, environmental issues are seen as questions of luxury. This also engenders negative reactions to the engagement of scientists, or "eco-terrorists":

> *"[the crisis] shows: 'who are you to talk about these things, we have totally different problems. We have problems with unemployment, with our existence, not with how much we are surpassing the carrying capacity of the planet'."*[xiii]

4.2.5 The designation of political responsibility

The fourth of the reoccurring aspects of different typologies of discourse on sustainable development is that of public participation. In this section, though, I deal with this aspect only as it relates to the conferring of political responsibility to either citizens or the state; a more in-depth analysis of how the scientists view the role of the public will follow in chapter 7.

By *political responsibility* I am referring to one of the aspects of the "phenomenon of responsibility" put forth by Gusfield (1981), i.e. the conferring of the

obligation to solve or do something about the problem to an individual, institution or office (14). This does not necessarily relate to the question of causal responsibility, which could be inferred from previous sections of this analysis. In the case of some of the scientists the causal and political responsibility do not "match up", for example the cause is seen as global capitalism and the responsibility for achieving sustainable development is put on individuals.

None of the scientists place political responsibility squarely on the shoulders on the *individual*, yet five of them place a lot of focus on them. They stress that future development does not lie only in the hands of decision-makers, but in us all taking small steps:

> *All measures will have limited success if people do not accept responsibility for the welfare of others and the welfare of the planet and its vulnerable ecosystems.*[xiv] *(33.1., 85)*

Here they call on personal responsibility and the role each individual can play by thinking about the consequences of our decisions and actions on a personal level and call for more awareness raising about the consequences of everyday behavior (4.1.; 30.2.; 30.6.; 33.3.; 19.2.). Besides these issues of lifestyle, some emphasize civic responsibility, that is, participating in decision-making processes (33.7.; 30.5; 30.6.).

Eight of the scientists explicitly place political responsibility in the hands of *decision-makers*. While the role of the individual is not dismissed, decision-makers are in their view crucial – on the one hand, it is their role to maintain economic efficiency, social cohesion and protect the environment (6.4.), or more generally, they have the "obligation to maintain the rights of people affected by their decisions" (38.5, 136). On the other hand, they possess the most (financial) power, design development strategies and have the most power and opportunity to influence and mobilize others (12.6.; 12.9.; 39.30.). They criticize the "glorification of the individual's contribution" which plays into the hands of owners of capital and underestimates the importance of macro sociopolitical decisions and policies (12.3., 348; 39.1.). As one of them wrote, individuals should play their part:

> *[h]owever, planning for a sustainable future cannot be based on the enthusiasm of individuals – it requires the careful design of sustainability policies that should be systematically implemented by the government (with the consent of various organizations involved, civil society, etc.). (14.1.)*

Individuals, businesses and non-governmental organizations need support, empowerment and public infrastructure (12.2.; 36.26.; 36.13.; 39.16.). There are initiatives in civil society, one noted in her interview, but until the government does anything changes will only happen among like-minded people.

A third, *activist* group, which includes six scientists, emerges as a combination of the previous two – they emphasize the role of the individual because those responsible – decision-makers – are not doing what they deem necessary. Their inactivity is due to the conflicts of interest between market forces, the interests of capital, between ethical considerations, legal norms and political decisions, which are at the core of unsustainable development (27.4., 4). They write that the time when individuals could count on the state and professional services is irrevocably over (25.7., 201; 40.106.), communities need to take over the process of development (40.6.). They could achieve this through mobilizing and using the force of public opinion to influence economic and political actors (15.3.; 8.3.).

One of the writers is relatively more radical in this context. He writes that active citizenship should not be taken for granted; democratization, decentralization and inclusion need to be fought for (8.1.) and this will change the dynamics of political power. In this context rational debate, the facing off of arguments is not enough:

> *People need to constantly be made aware of unacceptable behavior and processes by non-violent means and with direct action (in the form of demonstrations, theatrical protests, civil disobedience etc.).*[xv] *(8.12., 254)*

4.3 PATTERNS OF DISCOURSE: FIELDS OF RESEARCH, EPISTEMOLOGY AND PROBLEM OWNERSHIP

The protection of the environment is definitive in the conceptualizations of sustainable development of these Slovenian social scientists. As was noted before, the main aspect dividing different patterns of discourse is the relationship between environmental protection and economic growth. Furthermore, because their writing on social equity is not so prominent, and because there is a certain consonance between the ascription of responsibility and the main dividing aspect, the following summary of findings follows the division of conceptualizations into the same four groups – that of status quo, economic reform, value reform and transformation. Due to the methodological approach as well as the ensuing sample size, these four patterns of discourse serve more as a tentative summary and elucidation of the findings.

The *status quo* pattern of discourse emphasizes the importance of economic growth and competitiveness, which are seen as a precondition of furthering sustainable development. Economic growth should be limited by the carrying capacities of the environment – this would ensure that it could be sustained. The approach to the economic and environmental pillar is reductionist, seeing the relationship between them as a tradeoff; the issue of social equity is not mentioned or subsumed under economic growth. Although the political responsibility is placed on decision-makers, this conceptualization does not frame sustainable development as a political issue, but as an issue of (technical) regulation of the economy.

The *economic reform* pattern of discourse views sustainable development as seeking balance between the three pillars, where the relationship between economic growth and environmental protection is not necessarily inverse. The main factor in seeking this balance is the carrying capacity of the environment, which allows for moderate economic growth. Both are necessary, as economic well-being is the precondition for environmental protection, both in terms of the development of states and economic power of individuals. Yet, the current path of unbridled economic growth is leading away from balancing the pillars – the understanding of the term as

sustained growth is erroneous. Here social equity is also subsumed under economic growth. By placing responsibility on the behavior of individuals as consumers, sustainable development is in a sense depoliticized and privatized.

The *value reform* pattern of discourse includes, on the one hand, transformative elements by calling for the transformation of social values from materialistic and anthropocentric ones to post-materialistic and ecocentric ones, as well as for changes in patterns in production and consumption. On the other hand, despite criticizing the paradigm of unbridled growth, exploitation, excesses, destruction of the natural equilibrium, etc. (or its mimicry as sustained growth) it does not delve into issues of social equity, the social and political power structure. The responsibility is placed on the individual as a political actor – thus sustainable development is individualized but not depoliticized.

The *transformation* pattern of discourse calls for radical changes in lifestyle and thinking, for the transformation and creation of new societal and political institutions and a new economy – a fundamental change of patterns of production and consumption, which will no longer serve owners of capital. The focus on social equity is the most prominent in this conceptualization. The approach here is emergentist and the most relativistic of the four, seeing sustainable development as a contested concept. It is understood as a political problem, the responsibility for solving it is thus not placed on the individual as a consumer, but on the state and, in cases of indifference and inactivity, on the active citizen.

Table 4.1: Summary of patterns of discourse

	Social equity	Political responsibility	Ambiguity of concept	Approach to pillars
Status quo	X	Decision-makers	Not ambiguous	Reductionist
Economic reform	X	Individuals – consumers	Not typical	Reductionist and emergentist
Value reform	X	Individuals – activists	Acknowledge different ones	Emergentist
Transformation	Inter- and intra-generational	Decision-makers	Typologies and concept as rhetorical claims	Emergentist

The classification into these four patterns shows that the discourse on sustainable development is fragmented within the Slovenian social science community. The findings indicate two factors that could explain the fragmentation; they are to some extent related, but represent different aspects of scientific work. On the one hand, the patterns differ on an epistemological level. Those with more relativistic and emergentist or holistic approaches call for greater reform or transformation of today's society, and vice versa.

On the other hand, the different conceptualizations reflect the focus of their fields of research. While they confer political responsibility to the citizens or decision-makers, the way they conceptualize sustainable development positions their own fields as "owners" of the problem – those, that have legitimate "authority to define the reality of the problem" (Gusfield 1981, 10). The ownership of the problem is not intrinsic to the nature of the problem, but is a consequence of a process in society, through which dominant interpretations and definitions of the problem are being designated, by consensus or through intense conflict (Gusfield 1996, 9). In Slovenia generally the ownership of sustainable development lies in the hands of economic

actors, as can be attested by the domination of political and media discourse by conceptualizations stemming from the economic sphere (Banjac and Ilc 2012b). While lacking the power and influence to gain (full) ownership, the way the social scientists conceptualize sustainable development can be seen as a struggle to position themselves as the epistemic authority on the matter[28].

Perhaps the struggle for ownership is most self-evident in the case of two of the economists; the third one is quite unorthodox and by his own account ignored by his colleagues. They represent the *status quo* pattern – where the reductionist approach and the importance of economic growth entails economists in the position of authority. Similarly, the four of the scientists that are involved in research on the topic of pedagogics and didactics, represent the *values reform* pattern. By viewing the problem of sustainable development primarily in the value system of society and placing importance on individual behavior, they position the problem into their wheelhouse.

The geographers fall into two patterns of discourse, with four representing the *economic reform* pattern. In contrast to the economists, their approach is emergentist and stresses the importance of balance. Not seeing the relationship between economic growth and environmental protection as a zero-sum-game, positions geographers with the expertise of ascertaining environmental limits as those able to facilitate the balance between the pillars. The other two are stand-outs among geographers, subscribing to the *transformation* pattern. Why they differ from the rest is difficult to ascertain. For one of them it could be due to his self-defined role as a "synthetic" interdisciplinary scientist or related to his former activity in formal politics and current activity in the non-governmental sector. For the other geographer it could be due to her extensive work in Austria, where, as she indicated in her interview, the dominant conceptualization is more transformative.

The last grouping is assembled out of those, whose fields are most commonly associated with "the social sciences" – a sociologist, political scientist and ethicist –

[28] Because some of the fields were represented in the sample by only one scientist, the following elucidation is not comprehensive and is based on the focus of their research, not the designation of their field.

and who espouse the *transformation* pattern of discourse. Besides seeing sustainable development as a political problem, their relativistic approach to the concept is significant in terms of the struggle for ownership. They all delve into the complexities of the different understandings of sustainable development, their underlying assumptions and ways of understanding. As one of them said of his role as a political scientist in relation to other disciplines, it is not for him to delve into environmental phenomena, tax reform, spatial planning, etc., but to understand and reflect their findings, resulting policies and strategies and their consequences.

5 THE ROLE OF SOCIAL SCIENTISTS IN SUSTAINABLE DEVELOPMENT – DIVISION OF LABOR AND ENGAGEMENT

The division of scientific labor, as proposed by Burawoy (2007, 2011), indicates that not all scientists need to address the public directly, or for that matter, delve into issues of public interest. This division is said to reflect the actual practices of scientists, who, regardless of the role in which they envision themselves, engage in the public sphere. In trying to understand the effect they may have on the public, the focus therefore should not be only on those who espouse to be public social scientists, but on all categories.

The aim of this chapter is to ascertain how social scientists see their role as scientists in relation to public issues and in relation to the public. As the calls for more public social science reveal, some categories of scientific work are preferred in certain fields and in relation to certain issues. The question here is, what role the Slovenian social scientists impart on themselves and their field when dealing with sustainable development. Moreover, as public engagement is not restricted only to public social science, it is crucial to gain an understanding of what motivates these scientists to publicly engage, that is, how they understand this engagement in the context of their work and their life.

5.1 THE ROLE OF THE SOCIAL SCIENCES IN SUSTAINABLE DEVELOPMENT

In this section I delve into the understanding of the role of science in the context of sustainable development through the analysis of scientific texts and relate them to the patterns of discourse presented in the previous chapter. The analysis follows the division of scientific labor put forth by Burawoy (2007, 2011) with a focus on the defining dimensions of *for whom* and *for what*.

The first two roles of social scientists presented can be classified as policy social science, that is, the production of instrumental knowledge for extra-academic

audiences. Due to their focus on different audiences as well as their level of engagement with them, they are divided into the *policy informing* and *policy implementation* group. The *policy informing* group consists of three scientists and presents scientists as providers of data for decision-makers. They all emphasize that decision-makers need to have available and make use of excellent, specialty knowledge in order to carefully consider and evaluate their options (6.4.; 19.7.). Only one explicitly forwards a more technocratic understanding of policy making, writing that decisions should be based on critical and expert knowledge and not, as he designates the current state of affairs, on generalized observations, best guesses, rhetoric and emotions (6.1., 88).

The types of data generation they support indicate the production of instrumental knowledge closest (of the two groups) to a Weberian technical rationality[29], that is, focusing on quantifiable and efficient solutions to a given problem, yet they do point out their deficiencies. They are the measurement of development indicators that translate the concept into practical terms in order to set concrete goals as well as measure the impacts of policies (15.8.) and data generated through analyses of carrying capacities or vulnerability studies that inform decisions and planning on the potential encroachment into the environment (16.23.; 19.7.). Here the means define the ends, that is, the methods called for restrict the way sustainable development can be understood – e.g. carrying capacity methods imply a focus on environmental problems and set the bar at conservation levels.

Besides emphasizing the importance of these types of scientific data for decision-making, they point out their deficiencies. In the case of carrying capacity studies they note that where the acceptable level should be set, of what can still be considered sustainable, is not always clear. In the case of the use of indicators to measure the state of affairs one scientist is very explicit about the possible drawbacks. She says that it could be dangerous to be over-confident about them and that they do not suffice for strategic decisions because many important areas of human life cannot

[29] Morrow (2011) points out the vagueness of Burawoys' writing on instrumental knowledge as based on the one hand on Weber's discussion of technical and value rationality and on the other hand describing it as (merely) "puzzle solving" (54).

be quantitatively defined (15.3., 49). In both her texts and the interview she gave the example of GDP as such an indicator. She is quite direct in the critique of her own line of work:

> *When looking for an appropriate indicator for a specific topic we can in the absence of appropriate data resort to using available data. This results in researching what is measurable instead what is actually important. […] In addition [to the incompleteness and diversity of mental models] the understanding and evaluation of phenomena and processes is influenced by different value systems of researchers.*[xvi] *(15.3., 48)*

The second, *policy implementation* group includes five scientists, who place the social scientist on the local level and emphasize their role in the support for implementation – be it in local communities, businesses or other institutions. As with the previous group their work can be categorized as policy social science – instrumental for extra-academic audiences – but with a higher level of engagement. In their view, scientists should bring not only knowledge, but their support and fulfil the role of the "missing link" between theory and practice by collaborating and coordinating, building networks and bringing people and organizations together (4.1.; 15.8.; 36.1.). It is here at the local level that they see the contribution of scientists as most appreciated (15.8.) as well as definitive – only through the iterative process of implementation can sustainable development be really operationalized and therefore defined (5.4.). This is also seen by one of them as "the greatest professional challenge": not only to provide useful data, but "participate in providing clear and politically strong messages to facilitate development towards sustainability" (15.8., 78). In the context of Burawoys' classification this group is thus the most indistinct, centering on policy science, but also including elements of public science. While the iterative nature of implementation indicates the "puzzle solving" understanding of instrumental knowledge, the emphasis on engagement, which means more than just the inclusion of "clients", suggests a measure of reflexivity.

The *critical* group, which is the largest with seven of the twenty scientists, can be seen as the opposite of the previous two – its focus is on reflexive knowledge

produced not only for academic but also extra-academic audiences. In their writings the scientists criticized the role played by science in decision-making, more specifically, analytical and specialized expertise that is narrowly focused, technicized and mathematized (12.2.; 27.17.). Basing decisions on such expertise excludes alternative ideas and approaches and eliminates deliberation (8.13.). Decisions are thus made on the basis of "shallow" policy analysis that does not ask the needed profound questions and does not introduce new patterns of thought (8.12., 252-3; 33.1.):

> *Basic natural sciences are objective. They offer us options – e.g. nuclear weapons of cloning. They are not even interested in whether we choose them […] Even the gulf between technological and biological sciences and morals and ethics are an unpleasant warning that all knowledge does not ensure sustainable consideration of the environment.*[xvii] *(23.4., 10-11)*

Because they see unsustainable development and environmental degradation as the result of current human knowledge and values (38.69., 116), they see the preeminent role of science in, as one of the interviewees emphasized, presenting different possible alternatives and having the courage to stand behind one of them.

This does not mean that this group rejects expertise out of hand, it certainly should inform policy, but the research into details and logical-analytic thinking needs to be coupled with more broad, holistic and ecosystemic thinking and understanding, and inquiry into underlying issues and assumptions (12.6.; 27.17.; 27.5.; 39.10.). As one of them said, we already have huge amounts of data, but not much understanding of the interconnections due to the increasing specialization and elitization of science. Referring to the writings of her favorite author Mary Midgley she said:

> *of course every [science] is like its own street in a city and you have to know it very well, but it is not good if you don't see where among the whole thing it is. She did not advocate neglecting your discipline, you have to go more in-depth, but you have to be aware of all the other relations with others and also of course with values.*[xviii]

In this sense they see critical social science as the conscience of professional and especially policy science; instead of focusing only on the success or failure of certain

policies or researching what is interesting for the economic and political spheres, the role of social science should be in trying to understand the logic underpinning the workings of societal structures.

The last, *public* group, which includes five of the scientists, positions them in relation to society more generally – as teachers of students and the public, in raising awareness and changing the value system of society. As educators, the role of the social scientist is to educate the next generation of decision-makers, experts and entrepreneurs. A key mission of scientists is also to communicate the importance of these issues to the public and raise awareness (4.1.; 30.2.). One of the scientists described this role not only in communicating findings and emphasizing the (possible) consequences, but as a way of engaging in the forming a new collective imaginary and reflecting on the various existing ones.

One of the scientists, who bridges the public and critical group, needs to be set apart and his writings presented more extensively. He has dedicated much of his research on sustainability to the question of the role of the university and has delved into the matter by questioning the underlying understanding of university research, education and science in general. He is very disapproving of the knowledge produced at universities, writing that the paradigm of sustainability, which emphasizes the societal importance of knowledge beyond the economy and politics, is also a critique of current science in itself (13.1.; 13.3.). Science should not be seen as a tool for managing and controlling the world we live in (13.5.), not as a way to increase measurable indicators and build expert competencies in students (13.6.; 13.13.). The education provided by the university now is "incontestably subordinated to market goals": aimed at career education, narrow substantive focus, and awarding qualifications (13.5., 121):

> *In the course of decades of predominantly career education not only ethical dilemmas of the broader social and eco-system have been neglected, but also the essential link between education and responsibility.*[xix] *(13.2., 94)*

Education now leans more towards creating a "thinking machine" and provides him or her with the thinking and the tools to become "an even more effective vandal on this

Earth" rather than a forming a "sentient person", personality, identity and knowledge with responsibility (13.13., 50; 13.1.; 13.6.).

In his writing he also deals with the university itself, not just with its duties to the environment outside. He writes that the paradigm of sustainability also clashes with the institutional and organizational structure, as well as the culture of the scientific sphere[30]. The resistance of scientists to the concept of sustainability, he argues, is based on a culture of competitiveness. On an individual level, sustainability is seen as relinquishing a scientist's territory and working in an interdisciplinary and collaborative way as well as giving up the possibility of career advancement (13.13., 53). On an institutional level sustainability also poses a dilemma:

> *given the prevailing economic and research policies they would have to compete with their knowledge, but the culture of sustainability suggests to most effectively spread and form a critical public, the ability of adaptation and resilience […] and abandon competitiveness.*[xx] *(13.8., 1467)*

5.1.1 Patterns of discourse and the role of scientists and fields

The analysis revealed that the four different roles conferred to scientists relate to the four patterns of discourse presented in the previous chapter. As could be expected, the more the role of science was seen as providing reflexive knowledge, the more patterns of discourse on sustainable development tended towards the transformation of society.

[30] His writing would be pertinent for this thesis besides being an analyzed discourse, yet unfortunately it cannot also form the basis for analysis.

Table 5.1: Patterns of discourse and the role of science

Pattern of discourse	Role of science
Status quo	Policy informing
Economic reform	Policy implementation
Value reform	Public
Transformative	Critical

While the conferred role of science in some instances relates to problem ownership, presented in the previous chapter, as for example the preference of the public role of those researching pedagogics or the policy implementation role of urbanists, the two do not necessarily coincide as they represent two different aspects – epistemic authority and the form of work. This can be seen in the case of the field of geography where they can be found espousing all four different types of work. This is not particular to the field itself, but could be related on the one hand to simply the number of geographers included in the sample; on the other hand it could be related to the fact that sustainable development is not a research topic dealt with on the margins of this field, as it is for example in political science and sociology.

5.2 FROM INTRINSIC TO EXTRACURRICULAR PUBLIC ENGAGEMENT

Irrespective of their preferred roles as public, policy informing, policy implementing or critical scientists, scientists appear in public, be it in more visible (mediated) forms as the "public face" presenting their work (Burawoy 2007, 35) or in other less visible activities that position scientists in a public setting or that include the engagement of the public. It is thus necessary to examine the scope of the public engagement of all of

them, including more or less visible forms of engagement in which they participate outside of or as part of their scientific work.

Most of the previous research into the public engagement of scientists has focused on their activities or rather, their results – i.e. media texts, the procedures and realization of participatory practices, science shops, etc. In the rare studies on the actual engagement of scientists, the studies were quantitative on a national scale and therefore limited to researching engagement in a narrow sense – engagement with the media and popular science magazines (Bauer and Jensen 2011; Bentley and Kyvik 2011; Kyvik 2005). In contrast, this thesis also delves also into less visible forms of engagement. By including other forms it avoids implicitly framing the public as a general (national) public or as an audience as well as framing engagement as a primarily instrumental activity, as a way of gaining attention, recognition, support of financing.

In order not to exclude the public engagement, which is not published, recorded or otherwise accessible after the fact, the findings about the different forms of engagement are based on the data generated through in-depth interviews with the scientists. For them to speak freely and from experience, my questions did not guide them towards a specific type of public engagement, but related to their own activities or what they wrote in their scientific texts[31]. They spoke about engagement more generally as well as about different practices which can be divided into two categories as well as a few which could fit into both.

The first category includes engagement activities or practices outside of their professional work; those who were very active in this sense said, in response to a direct question, that they do not differentiate their role in society as a scientist and as an active citizen. These activities include:

- lectures (to others as well as students outside of classes; presentations in the parliament, for non-governmental organizations, in schools, associations);

[31] The baseline topic guide is included in Appendix E. It was adapted for each of the scientists in reference to their own (recorded) activities in order to establish rapport and to generate data based on their own experiences.

- education for sustainable development (generally on this topic, advice what the public can do etc.);
- awareness-raising projects (exhibitions, urban gardening projects);
- publishing in the news press (Saturday newspaper supplements, Science section, interviews for radio, television, the press);
- activities and membership in (expert) committees not related (directly) to their field of research;
- activities and membership in non-governmental organizations as well as support for (the environmental) movements;
- public debates – round tables, discussions.

Two scientists explicitly pointed out that there is a lack of "public confrontations of scientific knowledge versus scientific knowledge", which would be "the most fruitful and productive"; especially between social scientists – e.g. neoliberal economist versus environmental economist.

The second category refers to engagement within their professional work, on the one hand where it is inherent to scientific practices (in public and engaged with publics), and on the other hand, where public engagement counts towards fulfilling the conditions for habilitation. These activities include:

- field work (including engagement with local populations);
- concrete implementation projects including the public – public participation practices (e.g. in spatial planning);
- public presentation of plans and strategies to be implemented (also informally);
- conferences with broader topics and a wider audience;
- writing handbooks (for schools and teachers), also seminars for primary and high school teachers, projects etc.;
- articles in "expert" publications targeting non-scientific (professional) readers.

A few of the practices mentioned in the interviews cannot be so clearly classified or were mentioned in both contexts:

- (support in) implementation in local communities;
- consultation with non-governmental organizations, consultation and observation of practices in businesses;
- interventions in solving environmental issues and in local projects.

The division of public engagement into these categories, which was arrived at inductively, does not correspond to the role of science they emphasize in relation to sustainable development, which indicates two things. First, it confirms the transient nature of the categories of scientific work, where the focus on e.g. policy social science does not preclude scientists from engaging in public social science as well. Secondly, the scientists who discussed forms of public engagement inherent to their work can be found in all four groups presented above, which bears out the notion that all groups potentially have public aspects.

5.3 MOTIVATIONS FOR ENGAGEMENT IN THE PUBLIC SPHERE

Seeing as most of the interviewed scientists are to a greater or lesser extent publicly engaged[32] it is crucial to gain an understanding of what motivates these scientists to do so, that is, how they understand this engagement in the context of their work and their life. Little research has been done on how the scientists themselves see and what their assumptions are about public engagement more generally and how this impacts their practices (Poliakoff and Webb 2007; Davies 2008; Petersen et al. 2009). One larger study was done by the British Royal Society (2006) through a survey of natural and technical scientists and found the rationales mostly given for public engagement as follows: “explain and promote public understanding of science”, “highlighting the implications, relevance and value of science”, “listening and understanding of the

[32] The extent of their actual public engagement not estimated or compared as, especially in the case of unmediated engagement, the findings are based on self-reporting.

public" (9). Most of them cited time constraints as the main limitation to engaging more, as well as their peers' view of seeing it as bad for your career, not good enough, too "light"(ibid., 10,11). As before, research on social scientists is lacking, some studies, e.g. Kreimer et al. (2011) did very similar research to that of the Royal Society and included social scientists in the sample and found that social scientists are more active than others.

Even in the research on the relationship between scientists and the media the focus is mainly on the editorial policies of media organizations and journalistic practices on the one hand, and the efforts of institutions and scientists to promote their research, precautionary tales and advice on how to deal with the media, on the other. One of the rare studies on scientists' media engagement – the special Eurobarometer survey of the European Commission (2007), which also included social scientists, found that the most reported rationales for engaging with the public are: public accountability - communicating to inform taxpayers; providing information to correct or avoid misconceptions; generating support for further funding; and attracting young people to science (ibid., 7).

In the cases of both the British Royal Society (2006) and European Commission studies (2007), the impetus for public engagement seems to rest on instrumental reasons – in order to gain attention and support as well as stand accountable to those who fund them. Although they are not comparable, the findings in this thesis reveal quite the opposite – the propensity to engage publicly is in the opinion of many of them the result of personal inclinations and related to skills, but is also seen as part of the mission of science.

5.3.1 Motivations on an individual level - personal inclinations and mission

For these Slovenian social scientists, personal inclinations seem to play a pivotal role, as twelve of the sixteen interviewees related it to this individual trait. Some of the scientists explicitly said that their engagement or, for that matter, the lack of it is based on personal attitude or their characteristics. Several referred to it indirectly in

their recounts of personal experiences: “people are just different,” “well, maybe I am just not that type,” or “it’s about personal preferences, beliefs, that is for sure”. One of the more affable statements was the following:

> *Yes, look, it’s like this, this is dependent in different ways on character. I myself am more of a cabinet man.*[xxi]

When discussing the lack of motivation of others, they did not ascribe it to negative character traits or formulate it as an explicit critique, but also wrote it up to personal inclinations. The only one who related it to a specific characteristic when relating to a colleague, said, “I am not the type as […] who likes to be in public all the time […] some like to be exposed and some a bit less. This depends a bit on personality traits.”

Be it through their projects or after-work activities, many said that working with the public does not suit everyone and also that it requires certain skills to do it: “we probably see these things differently,” “some do it gladly, others less,”:

> *actually, no one can cover the entire spectrum. Because if you are a really great theorist, O.K. there is a possibility that you will be engaged somewhere in practice, but this does not suit everyone.*[xxii]

Besides seeing it as a personal characteristic, they related public engagement to a personal inclination, connected to a positive feeling of helping, influencing others and as a way to contribute to the betterment of the environment, society and the world we live in.

> *- That to me is actually quite nice and it seems to me that, I don’t know, I have, not always, but sometimes I have a good feeling that I can really move something... maybe convince one more person.*[xxiii]
>
> *- I don’t know, I have always been… before I started doing research, I was actually part of an association, we had our own environmental association. I have been in this all the time. The motivation, what is behind this… basically, I don’t know, a personal motive for a better tomorrow.*
>
> *[…]*

I think social activity is of crucial importance, if I can as an individual contribute to a better society, then I will do it.[xxiv]

A few of the scientists related this explicitly to sustainable development. They related their motivation to their lifestyle – saying that sustainability is not just what they research, but what they live and consequently want this goal to be realized more generally. They cannot but include sustainability issues in their university or public lectures, as one described it, it is "almost a deformation". They also do not mind being exposed or getting negative feedback, because the important thing is, that this issue gets some recognition in the public.

They also questioned or were surprised that others do not participate in different activities more, even among their counterparts. As will be shown later on, engagement activities, be it work-related or not, take time from other activities. Some of them speculated that it is related to family life and related it to a time of "settling down". The difference that some pointed out was, that they saw research as a way of life, not just a job; that it is something you take home with you and not wait in your office, purse in hand, for the clock to strike four:

I do not know, I actually experience this very... research is not my job, it's a way of life [...] It's very hard to talk about [others]... people experience career paths differently. So, I experience it as a way of life, I don't have an eight-hour workday, because I read articles, scientific, whatever, also in the evening at home, in bed, and then an idea flashes into your mind...[xxv]

They said it is about people who "really research with all their heart", sincerely, doing honest work and having a moral obligation towards those you are trying to help.

I think that if you work on a particular topic, [...] well I am like that. In fact sustainable development is not just some topic I delved into at work, but it's really something in which I believed and I was very interested in. And I followed it and then, it seems to me that, when you reach a level of knowledge you feel a need to also share it.[xxvi]

5.3.2 Engagement as intrinsic to the role of science in society

How they view engagement is also related to how they view the role of science, or themselves as scientists, in society. Many emphasized that science should be "useful", "concrete", "not an end in itself" and criticized those who are "self-sufficing" – communicating in a vacuum – as well as those who instead of engaging more broadly in their work or free time, opt for "writing in their slippers at home": "[t]he purpose of science is not to sit on a pedestal, divorced from the events in society."

Some saw the role of science in not only producing knowledge, but then engaging outside of work, sharing it with others and not just in scientific journals, where it is not accessible to the broader public:

> *at least for me personally, I also find this work more broadly, that is outside of my framework, of research [very important]. That you really try to spread this knowledge that you have to the masses, or at least to wider groups.*[xxvii]

Having more information and data (from research) is a privilege, as one of them said, so sharing it is "quite good". Later he added that he does not mind that people do not want to expose themselves and want to fulfil their professional mission within the narrow scientific circle, but that it is a pity that others do not know anything about what you are doing.

While the above related to "extracurricular" activities, the importance of public engagement was also in seeing actual traces of their work in society. It is not just about informing and raising awareness, or the lip-service of supposedly sustainable strategies. It should be about concrete implementation projects, about applied science. One of them was quite explicit in her critique of those who "compile from books in their warm living rooms". She said that there are many scientists writing about sustainable development in Slovenia, but not much is actually done:

> *when I look at my colleagues, there is no trace is society. Most of the articles are useless, and sometimes you are very happy when you see [an article] title, a promising one, but then when you read it… who will buy this? Is someone* willing

to buy this science*? [...] There has been a boom of writing articles based on some quotes; basically it's just a compilation […] You have nothing to grab on to. And if we made a shift here to write articles based on practice, then we would have something to show. We have a million hits, it's an awful lot, but nothing useful.*[xxviii] *[emphasis added*[33]*]*

Scientists also need to be or provide the link between theory and practice. One of them said that many times (although this has waned with younger generations of researchers) scientists put themselves on a pedestal as if to say: "this is what I figured out, this is my scientific contribution, and you can understand it or not. […] if you need me, if you need my information, you will come to me".

The actualization of research in practice is also seen as being "useful", "this is what we are working for" – they do not want their research to lay in a drawer (or in an article):

- We want to be beneficial, we want to do something which is useful in the end and that has some effect; basically we do not want to work for the sake of it. It's nice on the one hand, I really like this theoretical work. And I regret that I don't have more time; they are super, these models and thinking and reflection. [...] This theory is nice, absolutely, but the question is then, what impact does it have practically. And in the end, if you write an article in English and publish it in a journal, the question is how many people saw it...[xxix]

- I think that it is not okay, if you're as a researcher basically closed off somewhere, producing maybe five articles per year, publishing scientific monographs. This social relevance is a necessity. If not, then science is an end in itself.[xxx]

Without engagement they see science as self-sufficing, as one of them said, it would "almost be a sin, if this stayed closed up in some scientific vacuum." This especially rang true in the case of sustainable development:

[33] Where "emphasis added" is appended it means that it does not necessarily reflect the emphasis on this word or phrase by the interviewee.

> *it probably also depends on what specifically you are researching, what you are dealing with, but precisely the topic of sustainable development is so intertwined with society, that it does not matter at all if we write such good scientific discussions if they do not reach the people.*[xxxi]

While the lack of engagement was seen as a lost opportunity to contribute to the betterment of society, a few also deemed it problematic for scientific research itself. Scientific practices that are not as engaged, e.g. theoretical or quantitative research on big samples in social sciences are thus seen as removed from what they are researching; one calls it "laboratory immunity". Public engagement is therefore seen as a:

> *Corrective for the scientist. It's great working on this research, theory and so on, [...] maybe some things cannot be done otherwise. But often this is then removed from life and the path is too long towards actual use, even though this is not its sole purpose, that's clear. But for me this cooperation with various stakeholders actually means a corrective in the sense that I verify ideas. And if I want to work for others, not for my own pleasure, then I actually want this response.*[xxxii]

So-called "armchair" science is also seen as eschewing public verification: one said that, "honestly", it is sometimes a "defense mechanism, to not face reality and verify the results of their scientific work in application".

Whereas those recounted above saw the role of science as having the obligation to communicate their knowledge and be of use for the public instead of being in the proverbial ivory tower, only two represented a different stance. In their case they spoke about public engagement not as implementation and accountability to the public, but as a way of helping change the imaginary of people and consequently change the ratio of political power towards those who care for the environment.

Whereas many others saw public engagement as a responsibility of scientists, one of them emphasized the need *for* responsibility in public engagement. While it is an expression of respect, he also meant it in a cautionary sense:

In a way there is more responsibility in what you say, than if you write an expert article. I always said, writing, for example a high school textbook [...] takes incomparably more responsibility and effort than writing an article for an expert journal [...] I am not saying that it won't be a contribution to knowledge, it can be a huge contribution to knowledge, but this is a new quality *of how you will, with this knowledge, affect a multitude of people. [...] And now, some have this feeling of responsibility, while others do not [...] and do not see also what the risks and responsibility they are giving and taking on. [emphasis added]*[xxxiii]

5.5.3 The perception of the scientific climate on engagement

As the findings in the previous section show, many of the scientists (nine of the sixteen interviewed) see public engagement as part of the mission of science. Yet, this understanding and ensuing motivation can only be attributed to (these) individuals. As can be attested by the calls for more public social science and by the studies of scientific engagement referenced above, public engagement is often not as accepted or supported in the broader scientific community. In contrast to the opposition towards public engagement reported by natural and technical scientists (British Royal Society 2006, 10, 11), for these Slovenian social scientists the climate among their colleagues is neither oppositional nor supportive.

Although the interviewed scientists themselves support other colleagues in engaging publicly, direct responses of their colleagues are apparently not a frequent occurrence. The responses some of them got were generally positive or indifferent, neither praising nor criticizing, but, at least for one of them, it seemed that public engagement was not appreciated enough. The negative responses reported were either not said directly, or were voiced in more informal settings – over a beer.

The reasons for the negative responses they described can be, similar to their motivations, attributed to either individual traits or the question of usefulness, yet this time for science. On the one hand, they chalked negative responses of their colleagues up to envy or said that apparently public engagement does not sit well with the others:

"There is always an exception, but O.K. that happens everywhere"; "Some just do not feel that it is right."

On the other hand, specifically in relation to public participation processes and implementation projects, some of them reported that their colleagues question the usefulness of including the public: "why would we even do workshops? They [the public] don't know anything and we won't find anything out". Similarly, one described the institution where he works as divided: some, like him, who would like input from future users[34], but just to the point where they do not encroach on his expertise, and some who say "why should we care", "why should we include them, it only means more work and more obstacles". For him specifically the responses of his colleagues were those of pity in the sense "go on, do what you want, you won't get anywhere".

Beyond the question of usefulness, none reported direct negative responses or repercussions. Only two labeled the issue of engagement as "a risk", yet this risk for them does not arise from the inside, from other scientists, but from the outside - in the form of negative public perception, critiques and public disqualifications.

5.4 PERSONAL MOTIVATIONS AND INSTRUMENTALITY

The interviews show that the motivation for public engagement, be it more or less visible, is based on their personal inclinations and interests and relate to the positive feelings of contributing to the betterment of society and the environment. Their engagement also relates to their understanding of the role of science and of scientists in society. The understanding of this role mainly positions social scientists as providers of instrumental knowledge, but is not based on instrumental reasons. While others emphasize the importance of being "useful", of informing, raising awareness and leaving traces in society, only one linked public engagement with (among other reasons) communicating the logic and practices of his field of research to the public.

[34] He distinguished a few categories – the public as the general public reachable through the mass media; the interested public as the public that forms in response to a certain issue or are more impacted by something; users as those who you get to know, you know their structure in contrast to the public.

Not to lecture or impose their knowledge on them, but to explain how things are done, show the complexity and why some solutions (in urban planning) are not optimal, but are a compromise.

The emphasis on personal motivation and obligation contrasts with both the findings of the British Royal Society (2006) and the European Commission (2007). The divergence in results could relate to the structure of my sample more broadly – it includes only social scientists and not natural scientists or a mixed sample; as well as in a more narrow sense: I interviewed a small sample of scientists who are either engaged already or saw it as very important, or both. Another and I would argue, greater factor relates to the system of financing of research in Slovenia. Whereas the findings in many studies as well as theoretical writings relate communicating and engaging with the imperative of gaining or retaining funding, most scientists in Slovenia have relative job security on the basis of their pedagogic work (this is changing, though). Also, media practices are not as heavily managed in Slovenia - in the report of the British Royal Society (2006) they write that the majority of media interactions are managed by their institutions.

The lack of instrumental reasons for engagement in the case of these social scientists can be seen as encouraging. Whether the main motivation was written up to personal inclinations, or the mission of science, the main motivating feature is social relevance. Social relevance is therefore important, perhaps even inherent to their work, however the way in which they understand the role of science in their scientific texts as well as in their interviews indicates that social relevance does not follow from the formulations of social problems in the public itself, but is designated autonomously within the scientific community.

6 POSSIBILITIES AND LIMITATIONS OF PUBLIC ENGAGEMENT – SCIENCE POLICY AND THE MEDIA

In trying to gain a greater understanding of the public engagement of social scientists it is necessary to understand on the one hand the motivations or perhaps aspirations of social scientists to engage and on the other, to gauge the conditions that could affect and shape the decision to engage and the nature of it. The findings in the previous chapter showed that the scientists' understanding and support of their public role is guided by the notion of the social relevance, despite the indifference of their colleagues. In this chapter I focus rather on two aspects outside the scientific sphere, which enable or restrict the work of scientists in the public sphere – science policy and the media. The question therefore is, what possibilities and limitations these two aspects represent for the scientists' public engagement.

Science policy plays an important role in shaping the conditions of scientific work, seeing that the social sciences are largely institutionalized in public or private universities. The requirements of their work as well as the priorities and policies of the universities and funding institutions therefore constitute important factors in directing scientific practices. The first sections of this chapter examine how science policy, especially the envisaged obligations of scientific work and policies of science evaluation, affect the propensity and the nature of the scientists public engagement.

As the principal mediator of science to the public sphere the mass media play an important role as well. The media primarily focus on novelty, the unexpected and negative events and in the context of science, mainly focus on new or surprising findings, »inventions« and disputes within the scientific community and not on interpretations and the understanding of society. The mass media thus represent a major obstacle, which is why the rest of the chapter is devoted to the relationship between Slovenian social scientists and the media and how this affects their work.

6.1 LIMITATIONS OF SCIENTIFIC WORK – UNIVERSITY REGULATIONS AND SCIENCE POLICY

University regulations and science policy impose certain requirements on the work of social scientists, which to some degree shape their practices. On one level, the requirements represent "only" obligations scientists are expected to fulfil, moreover, science policy affects all aspects of scientific work by, on the one hand directing resources to preferred practices and on the other hand framing the role of science, especially its social relevance in a certain way – in the case of Slovenia more towards market considerations.

In the following sections I focus on the aspects of science policy that have an impact on the scientists' propensity towards engaging publicly – especially on the means and rules of evaluation of their work in the habilitation process (tenure), i.e. the envisaged obligation of scientists, and a bit on the research project application requirements of the Slovenian research agency (ARRS) as well as in research projects funded by the European Commission. This focus, though, reflects the structure of the sample of interviewed scientists – only four of the interviewees are employed outside of public universities.

The scientific policies regulating the habilitation process in Slovenia pertain to academic advancement as well as retention of a certain academic title. The habilitation system is determined by individual universities and sets criteria for the attainment of academic titles. An important difference to tenure systems, for example, in the United States is on the one hand, that the majority of Slovenian scientists, employed by universities, are "tenure track", yet their academic title does not necessarily coincide with their employment status. This introduces an element of competition or simply timing into the tenure system. On the other hand, advancement is not a condition of employment – one can remain an associate professor throughout their career by fulfilling lower requirements.

Although the habilitation system includes also qualitative aspects, formal rationality and "new managerialism" have moved the evaluation system from one of peer control, to one dominated by quantification in the evaluation of goals and achievements of scholarship (Kump 2001; Mali 2002). Quantitative criteria are required in order to avoid conflicts of interest, especially in view of the small size of the Slovenian scientific community and the exclusivity of its language (Splichal and Mali 1999). Yet, the conceptions of merit and excellence that are inherent to them relate more to efficiency and productivity than other more substantive understandings of scientific quality.

According to Article 93 of the *Criteria for Appointment to the Titles of University Teacher, Researcher and Associate* at the University of Ljubljana (2011; from here on Criteria for Appointment) the quantitative criteria of the habilitation process set the bar for each title at a certain number of points gained through the scientists' scientific and research activity, i.e. documented publications of scientific and professional work, and pedagogical activity, i.e. textbooks, mentorships and student evaluations.

How publishing for an extra-academic audience is evaluated can be seen in the example of published articles. The points awarded are as follows: from 1 to up to 12 points for peer reviewed articles, depending on citation index; up to 0.5 points for expert[35] and up to 0.1 points for popular[36] articles (Criteria for Appointment 2011, Article 93). Due to the low valuation of expert and popular articles the actual extent of writing for special or general audiences is difficult to ascertain from individual bibliographies as they are often classified to a higher category because of vague definitions of types (COBISS 2011) and the discretion of the author, publisher and bibliographer. In the case of popular articles it is even more so, as many are not bothered enough to submit them. A similar low appreciation for public engagement

[35] The definition of "expert" publications is as follows: "is the presentation of what is already known, with the emphasis on the applicability of original research results and the dissemination of knowledge, while the complexity of the text is adapted to the needs of the users and readers of the professional or scientific journal" (COBISS 2011).

[36] The definition of "popular" publications is as follows: "is an article with the aim of popularizing both scientific and professional findings and the role of R&D in society. As a rule, popular articles are published in newspapers and magazines of general interest as well as journals for the popularization of knowledge" (COBISS 2011).

can be seen in the qualitative criteria, where only one vaguely touches upon it and only in the case of advancing to "full professor" and states as follows: "they have furthered or enhanced scientific and artistic achievements and provide for their application, or have enriched Slovenian and international knowledge and culture" (Criteria for Appointment 2011, Article 55).

The case is similar in the criteria set for the financing of research activities set by the Slovenian Research Agency in the *Rules on the Procedures of the (co)financing and Monitoring of Research Activities Implementation* (2011). Although one of the criteria for social and cultural relevance includes the writing of popular articles, media presence and organizing public events, it represents one of the fourteen indicators of social relevance (and one of 91 of all indicators), couched in between indicators on the number of patents, the founding of spin-offs, promotion of the country abroad and collaboration with corporate experts, to name a few.

Together the low (or no) valuation of practices of engagement and the overall requirements in teaching, researching and publishing, sap the time and other resources and give less incentive for engagement in the public sphere. The following sections present the scientists' perceptions of the conditions set by science policy, focusing on the issues set forth by them in the in-depth interviews. The most prevalent grievance dealt with is the issue of time constraints and the need for prioritization and the related issue of the constraining nature of the habilitation points system.

6.1.1 Personal and professional time dilemmas

Almost all of the interviewed scientists pointed out the dilemma time constraints put them in and which activities they need to juggle. A few even expressed regret or feelings of guilt for not engaging more and sounded exasperated when talking about their obligations – teaching, international projects, conferences, etc.:

> *look, the day has 24 hours; if we want to stay in science, we have to follow these mandatory criteria that we have and then sometimes you run out of energy, will, vigour for the work ahead, for the transfer into the public.*[xxxiv]

The scientists related their and others' time constraints to the "publish-or-perish" pressure in relation to their professional evaluations. The dilemmas that came up were ones of prioritization – whether to focus on gathering points or not, e.g. whether to publish in expert publications or the news press. That this dilemma is not the same for everyone was pointed out by a tenured ("full") professor, who likened the tenured to protected animals, as their appointment is not up for renewal.

Although they criticized the system with which their work is evaluated, how to resolve the dilemma was individualized. Because some of them are engaged outside of their work and although they sincerely saw this as a dilemma, the way some described the options indicates their preferred choice. For example, by saying either you choose to engage "or *they* choose what brings in money, what brings points" [emphasis added]:

> *but when I look at my colleagues, who are still there: it's about achieving… to become an associate professor tralala, you need this many points and this many articles, this many conferences and they are all goal oriented, because of all of this.*[xxxv]

One of the scientists expressed a similar point in discussing the choice of a scientists' "primary mission" – teaching and mentoring on the one hand or research and publishing on the other:

> *Everyone works according to their ability; I don't blame them if they decide otherwise. This is just a personal choice, what you will devote more time to. Like in our profession, [...] we are mostly educators, and you are constantly in a dilemma about what you'll do today: will I deal with students or write an article. Now some of us usually decide for more teaching, others decide for the scientific,* for competition*, for junior researchers, for projects and so on. [emphasis added]*[xxxvi]

The constraints on time were also reflected in the need to prioritize within their research – as one of the researchers pointed out, she faces the dilemma of forgoing theoretical aspects. Even though she personally saw participatory practices as crucial, she regretted that there was not enough time for theoretical models, contemplation and reflection:

> *In the end there are time limits. Now if you are dealing with one area, how much time do you have for another area? For example, in our institute there is maybe an advantage, or perhaps not, that we are always in some way connected to practice. That our projects are actually very applied. But on the other hand, with such projects you tend to run out of time for theoretical work. And sometimes even to go deeper into theory.*[xxxvii]

The involvement in participatory practices also takes time and other resources. Those that are involved in them or, for example, make presentations in primary schools all across the country also pointed out the costs – you need to get there, make the material or signs, rent spaces for it. It takes time and a lot of effort: "I don't need to tell you that this is all free of charge," "There is no profit, this is voluntary work". The constraints of expenses also limit what they can do – in projects they are bound to time and financial constraints and getting the required results and if funders are not interested, even good ideas do not come to fruition.

6.1.2 The constraints of the evaluation (habilitation) system

Although time dilemmas were quite prominent in their answers, the evaluation system, at least for many of them, did not seem decisive in the sense of dissuading them from further engagement. A few even explicitly questioned whether a different system would encourage others. As one of them reflected:

> *There are not just external obstacles. They are one thing, the other is the self-understanding of the identity of the scientist, because for many going into these*

values or things that are not completely measurable or engagement; they don't see it as part of their identity, many a person.[xxxviii]

As said before, none of the scientists faced negative repercussions in relation to their public engagement, but perceived that it is not appreciated more generally within the scientific community. The evaluation system can thus be seen as contributing to what is perceived as a negative climate. As one of them said: "the orientation of the institution can contribute a lot to individual encouragement". Also, their answers on this topic were only partially related to the issue of engagement, but revealed their dissatisfaction with the evaluation system more generally.

What counts the most is the publication in peer-reviewed international journals with a high impact factor, "the higher, the better". In this context, one added, applied science is not considered as scientific enough. Where some mentioned that "expert" and "popular science" articles used to be stimulated and attributed more points and that "social engagement" used to count for something in habilitation procedures, others, referring to a not so distant past expressed that it is getting better:

Moreover, in our work this second segment is not taken into account. As I said, it's better than it was in the past, but still probably too little in relation to how much time and energy it takes for those who are really engaged [...] It was often like this, well now there is less and less of it, like the university does not support this, it is not appropriate.[xxxix]

Although a few of them said that public engagement practices cannot be valued the same as scientific work, as publishing in "first-rate journals", these activities should not be dismissed or underestimated in the evaluation system. They felt that the points that are attributed do not reflect the effort and energy needed to execute them well as well as their importance.

- I think it brings you nothing or something minimal, I don't know, something like 0,1 [points]. Basically, I don't know if it counts for anything. It is true that this cannot be evaluated as scientific work, right, but I think that it should have some bearing.[xl]

- Well, we know that what is "expert" counts for practically nothing and this engagement is expert work. So there is no motivation here. It is, though, if it is a bit more… if you can evaluate it or get it into scientific frameworks, it is publishable to some extent.[xli]

Those that spoke about a different system possibly stimulating more scientists to engage outside of the "ivory tower", though, added specific qualifications.

- Do they [faculties and the university] promote it, this kind of activity and presentations, responsible *activity and presentations of its members or not? [emphasis added]*[xlii]

- I think there should be much greater flexibility. In this sense. Anyone that engages systematically, I emphasize, systematically and measurably. I am using this word deliberately. *In, for instance, the disseminating of the sustainability paradigm; in these lectures in schools and so on, [...] it should definitely mean that you have lower educational or research capacity. [...]*

And then to consider also whether the textbooks are written, or a popular science book on this subject, which has references, quotes, and so on. Is this not also a contribution to that? If it is based on scientific work. *[emphasis added]*[xliii]

Despite their qualms with the evaluation system, during the rest of the interviews some of them often referred to these same criteria – i.e. publication in international, high-impact, peer-reviewed journals – as indicators of research quality. They also expressed the difficulty of evaluating scientific work in a different way, especially in such a small scientific community where within a field all are acquainted with each other's work, where qualitative indicators could (and used to be) subject to arbitrariness: "They need to distinguish us in some way".

On the converse, one of the scientists decried the dependency of scientists on the current system in general, not just the evaluation system, but also what is designated in curricula. He in essence said that there is no more individual initiative, all activities are adapted to the system:

the whole school system has learned dependency. And does not have a lot of initiatives. Simply, it does not need to. We can live at the expense of the current structure, where we depend on some policy [...] It is this subordination of the whole system that is dragging us down the most. And I don't know whether it is possible to develop self-confidence in education overnight. That we have some insights that are important. But without self-confidence it won't happen.[xliv]

Besides the issues of what counts as scientific or what counts at all, the issue of prioritization came up, that is, the focus on the impact of their work within the scientific community and not their impact on students and society in general. First of all, many disagreed with the importance that is put on publishing internationally, in English, rather than nationally, which also has an impact on the specialization of their work and obscures those working in between fields[37]. Secondly, some pointed out that the quality and effort put into teaching is not evaluated and is absolutely underappreciated. The same goes for writing university textbooks:

We were constantly getting angry at the faculty, that if you write a textbook, that is the heritage, that remains, it was not evaluated, had no scientific value, but only educational value. But if you write a useless book that is understood by only two people in Slovenia and in Slovenian, of course this is automatically this many points. This is the reality.[xlv]

The focus on research quality and impact on science is an impediment for those whose envisioned role is not congruent with these various criteria, e.g. one of the scientists in the public social science category, who sees her purpose in "the transfer of science into schools". A further one talked about the impact of his work on society, not on science itself:

Yeah. Now tell me, what is more important: that I as an expert write a text for an international journal in the field of political ecology or organize an exhibition 'Earth from above', which 230 thousand people come to see. Which thing has a

[37] Slovenian scientific journals are generally related to whole disciplines or fields (or more of them) and not specific sub-fields or topics.

greater impact. When I say impact, I am not talking about theoretical production and so on.[xlvi]

6.1.3 The evaluation of engagement in research project applications

Not surprisingly the interviewees who commented on the requirements in project funding schemes where those employed primarily or wholly as researchers at the university, public institutes and businesses. They pointed out that some project funding schemes require either that the applicants demonstrate the impact of their proposed work on society or demand communicating the findings to the public or even invite them to participate. One of the interviewees said that the category of "social relevance" in the application for project funding in Slovenia is quite tricky to fill out:

You never know what to put there, right. But on the other hand, I know why it is in there. That you actually can show that you are somehow embedded in wider society. In this way, science can actually have an effect. Or that you can influence the general public with your findings. So it seems to me that it is not such a bad category, as it is bothersome.[xlvii]

While participatory practices are not part of the requirements for projects funded by the Slovenian Research Agency, the scientists mentioned that other funders are requiring it – work packages devoted to communication and dissemination in projects funded by the European Commission or stakeholder cooperation in applied research projects of ESPON (European Observation Network for Territorial Development).

6.2 SCIENTISTS AND THE MEDIA – THE CLASH OF TWO CULTURES

As the principal mediator of science to the public sphere the mass media play an important role as well. On the one hand, the workings of the media more generally, editorial policy and journalistic work set the conditions of media coverage of science.

On the other hand, the perceptions of these conditions and the relationship between these two spheres of society affects the way scientists approach the media or dissuades them from doing so; in the case of (traditional) public social science, where medialization is inherent to the work scientists do, these conditions may very well shape their own professional work.

The remainder of this chapter is devoted to elucidating how scientists view this relationship and the conditions imposed to their public work, first by reviewing the research on the relationship of the media towards science and specifically towards social science. The next section delves into the understanding of Slovenian social scientists of this relationship and the workings of the media and its effect on their (potential) public engagement, as ascertained through the in-depth interviews. The third section focuses more specifically on the reporting on sustainable development and is based on the data generated through the analysis of the scientists' media texts as well as the interviews.

The analysis of media coverage of science has become a research strand in its own right – this is because the media is seen as an important factor in forming the public image of science amidst concerns about public trust and (above all) funding. In his meta-analysis of research on the relationship between science and the media, Mike S. Schäfer (2012) found that there has been a great increase in the research in this field since the 1990s and in the last 10 years as well, but that the focus of it has been on mainly the natural sciences, Western countries and the print media (also Myers 2003).

The research on the relationship between science and the media often focuses more on the attitude of the media towards science, where the media's focus on novelty, the unexpected and negative events is seen as incompatible with what science wishes to communicate – the media mainly focus on new or surprising findings, "inventions" and disputes within the scientific community and not on interpretations and the understanding of society (Nelkin 1995; Sismondo 2004). This dominant view of explaining the nature of the relationship between science and the media sees it in the

sense of “two cultures” clashing, resulting in, on the one hand the glorification of ”big science” and heroic images of great scientists, and on the other inaccurate, oversimplified or misleading reporting (Nelkin 1995; Gregory and Miller 1998). In relation to journalists there is an expression of understanding of the time and editorial constraints of news work, the recounting of the differences between scientific culture and news values, and a critique of the economic constraints on journalists culminating in sensationalism as well as basically substandard news work. On the scientists’ side there are many recounts of negative experiences as well as recommendations of how to communicate and deal with the media. In general, the research on the relationship between the media and science reflect the approach of the deficit model in the sense that scientific knowledge is seen as superior and the media as an imperfect mediator in the transference of this knowledge to the public (Hilgartner 1990).

A relatively new strand of research, introduced by Peter Weingart, has focused on the concept of “medialization”, which refers to a mutual relationship between science and the media (Weingart 1998, 2005; Franzen et al. 2012). The conditions of the medialization of science are seen in the *extensiveness* of media representation of science, the *pluralization* of media coverage and the *controversial* nature of it (Schäfer 2009, 478). Its proponents argue that the influence of media on public (and political) perceptions of science are such that practices of science communication (of scientists) have adopted to the “logic” of the media system – staging media events, pre-publication of findings, the advent of so-called “visible” scientists (Franzen et al. 2012, 5). Besides changing the communication practices, medialization is seen as having an impact on research itself because of the “demands of the media and the increasing importance for public legitimacy of science” (ibid., 10).

These trends are often ascribed to “science” in general and not specific fields in particular, and although Weingart (2012) writes that that medialization can be more or less intense, depending on the tightness of the coupling between science and the media (30), research on medialization has focused on fields that get a great deal of media attention. As Schäfer (2009) has pointed out, the majority of medialization

studies is on the following fields: stem cell research, cloning, cold fusion, astronomy and nanotechnology (480).

This approach is based on one general assumption – that of the power of the media coupled with a specific idea of public legitimacy and accountability of science due to public funding. In one instance Weingart (2005) calls it a "constitutive dependency" on funding and at the same time on public trust ("konstitutive Abhängigkeit"). On the level of science communication, medialization research does not distinguish well between the practices of institutions and individual scientists, e.g. by pointing out the development of special PR departments within universities. In relation to the communication of scientists as well as research itself, it presumes that an orientation towards the public is a consequence of medialization and therefore only instrumental. Because the research is focused only on what is actually published in the media, processes and changes they relate to medialization are not researched in the fields (and individuals) that do not get or eschew media attention. This concept thus runs in parallel to those of trans-science and Mode 2 science, where the focus on controversial public issues clears other fields of the charge of communicating for instrumental reasons and thus places the blame for this on the media and not on other aspects within the scientific sphere.

6.2.1 The underratedness of the social sciences in the media

> *"(a) no matter what the subject matter of inquiry, some people do and some people don't; (b) the differences aren't very large; and (c) it is always more complicated than that." (Berelson in Goslin 1974, 511; summary of his research of human behavior upon request)*

Despite extensive research on science communication, there has not been a lot of research on the reporting of social science in the media, it "has been scattered, at best" (Siebel and Clegg Smith 2009, 291; Singer and Weiss 1988). Most of the accounts

are not systematic qualitative studies, but mostly relate the social scientists' personal accounts of dealing with the media, and those tend to be about negative experiences and/or relate advice on how to deal with journalists (Haslam and Bryman, eds., 1994; Adler 1984; Best 2004).

The media do not seem to have sufficient interest in the contributions of the social sciences to the debate about public issues or they do not represent the contributions as products of autonomous scientific activity. The difference in the level of coverage is said to stem from the fact that social sciences study phenomena that many or most have, if not first-hand experience, then at least mediated experience with. In contrast to the natural sciences, where most would acknowledge that they are not able to "judge the validity of information", in relation to the social sciences "everyone is a psychologist or sociologist of sorts" (McCall 1988, 92; Goslin 1974). Where some media do employ specially trained science reporters, social science reporters are not called for. Whether this can also be related to the fact that in the social sciences multiple theories on same phenomena exist concurrently in contrast to the natural sciences, would be difficult to argue, but it also means that lay theories often display a certain homology with scientific ones. Besides content, social scientific language, although it is coded to a greater or lesser extent, shares much of the terminology with commonly used language, although with sometimes important differences in meaning (Haslam and Bryman 1994a, 12).

In one of the rare extensive studies Weiss and Singer (1988) report that the social sciences in the media are generally incorporated into general news items, political and business features, and that quantitative studies or data is selected over the qualitative. They also interviewed the scientists quoted or mentioned in the analyzed stories and found that they were generally satisfied with the coverage of their work, with many qualifying their responses by acknowledging the restraints of news work (ibid., 129). When asked about the reporting generally there were a few specific complaints: oversimplification, undue certainty in reporting social science results and fragmentation (Weiss and Singer 1988, 131-4). The stripping away of the complexity and nuance, coupled with a preference for quantitative studies, also

reinforces a positivistic epistemology (Mesny 2009, 686). They also complained about the inadequate scrutiny of the quality of the scientists and their research as well as not explaining the disagreements and inconsistencies between social scientists (Weiss and Singer 1988, 151).

What perhaps is not so specific for social scientists is that the media often expect "a quick 'expert' comment on whatever issue" on the agenda that day (Haslam and Bryman 1994b, 197), yet in contrast to the natural sciences, most of the social science reporting is in this quick expert role and is not *about* their research. At first glance, the same can be said for the Slovenian press - the designated "science" sections, radio and television broadcasts are reserved for the natural and technical sciences and social science is excluded (for similar findings in the Dutch press see Hijmans et al. 2003). Reports on the social sciences are thus not designated as "science" but their contributions are integrated into other sections of the news – as expertise on reported topics and events and as commentaries or essays in the sections and Saturday editions designated for that purpose.

6.3 SLOVENIAN SOCIAL SCIENTISTS AND THE MEDIA: CRITIQUE AND INERTIA

As with the different perceptions in the case of public engagement presented in the previous chapter, that is, quite positive on a personal level and a negative climate and discouraging science policy, the perception of the media discerned from the interviews is two-fold. In this matter, my findings about the social scientists are not much different from those of Peters et al. (2008), who found, in a study of biomedical researchers, that despite the criticism of the media when it comes to science communication in general, that scientists, when they rate their own experiences with the media, are mostly pleased, but not particularly enthusiastic (268) (similarly for social scientists in Weiss and Singer 1988, 73).

6.3.1 The disagreeable terrain of the media

The scientists see the media as an important factor in the informing of the public about science and sustainable development, raising awareness and bringing science closer to "the masses" in order to draw them in. In addition, two of them said that the popularity of the concept was, in part, due to the media. The important aspect of the media for them is its function as a medium *per se* – a way of broadening the scope of the audience, a way of reaching and thus influencing the general public. "Except for education," one said, "I don't imagine any other way of getting into the homes of people". Only one commented that there is a lack of a middle ground between the news and expert (often narrowly focused) journals, a place for more in-depth discussions.

Besides emphasizing the importance of the media in reaching a wide audience, the scientists' assessment of the reporting or lack thereof on sustainable development related to their critique of how the media operate. A few related that these topics around sustainable development are not "really news" – the media are interested in events related to their projects or in specific data, but not in the topic of sustainable development more generally:

> *It is true that the media, I think, they are more concerned to a large extent, with these daily news, with these pressing problems; and this is something that in the current state of society does not seem important to someone because it is a segment of an overall change.*[xlviii]

Those that reported that the media showed interest in them mainly related this to their research on environmental topics, levels of pollution etc.

Some of the topics the scientists felt are very important do not get the attention they think they deserve - the media are only interested in big stories and scandals: "Yes, that's how it is with the media, they need something that explodes, something like that." One also said that there is no interest in a topic, until there is a conflict, and argument:

> *And then I opposed some things and then it was interesting for television, to position us as polemical, which is fine, but there are too many of these polemics. That the media would be interested in some constructive way in schools and sustainable development or the university and its educational process...*[xlix]

A similar notion of differing standards came up in their general critique of media reporting. This is congruent with the findings of the European Commission report (2007) which found that in the scientists' minds "media logic" has the most impact on the quality of science reporting: other imperatives drive the coverage of scientific stories; attention grabbing is a priority, not accuracy; the source is not always the appropriate or most credible, but the most popular (6).

The Slovenian social scientists said that the media sensationalize stories, that they are populist and uncritical. Often they emphasize emotional points, report in a sensationalistic, catastrophic way instead of delving into the real reasons that cause societal and environmental problems:

> *Well, I would say that this media space has in a way narrowed and gone on to some other standards, in which they attempted to be maybe more popular but it then veers towards populism. And for example, these journalists are often very uncritical about what they write, or rather, they write things that do not hold up in terms of expertise. Specifically, in the field of, for example, climate change, the topic is in essence addressed in a sensationalist manner, not objectively. [...] They do not benefit the public with this, because they are not informing them in an adequate way and do not contribute to raising awareness and not even to people realizing that maybe something needs to be done.*[l]

The media should also, in the opinion of some, serve as a motivating force by including more positive reporting. Because the media report on negative stories, negative impacts and sensationalize, the topic of sustainable development does not come through – yet these are "everyday topics" that many could relate to. Media could in this way be more effective in changing people's values: "positive messages that would show the savings that could be made, the health benefits, that being sustainable is 'cool'". Positive stories can set a good example, which are "infectious":

At the same time it would give impetus to those who want to go positive, like this: 'Hey, if he can, we will too'. And it catches on. […] If it is all negative, 'it's not worth it, then it's lame, why would we do it, we won't do it'. At least if we could have this momentum on the basis of positive information, on the basis of good examples, based on concrete things, then they could help a lot in the implementation of sustainability, which would engender a public response.[li]

Yet the interests of the media are different than those of scientists; a few related it to capital – of owners, of advertisers and of others from the outside influencing media coverage. Only one "sympathized" with this, saying that of all the social systems the media are the most under pressure by capital:

The media are now fighting for its existence. [...] Among social systems the media are perhaps in the worst situation. They are completely subordinate. And even if they are not subject to a [political] option, they are subordinate to the public and therefore cannot act as an autonomous factor in society. Although they should.[lii]

6.3.2 The inertia of (dis)engagement with the media

Despite the fact that the interviewed social scientists were all critical of the media in general, their personal experiences painted a somewhat different picture. Only one of the scientists talked very positively about her experience with the media, saying that she really enjoys cooperating with them. Most, though, were more indifferent towards the media, but had had positive experiences. When they invited the media to cover an event, a presentation, they mostly responded, but the media are not seeking them out themselves:

That they would express interest themselves, as in: 'do you have something on this topic' […] you don't see that. It was like this, if we asked if they would, they

always came. The inverse, that they would express interest, there is very little of that.[liii]

Some chalk up the lack of interest to the topic they are researching or that they are not "interesting enough". In some cases there are other scientists in their field that the media most often turn to and consequently others do not even have to think about media engagement. Journalists are also often "self-sufficient", as one of them noted, doing things by themselves and not asking scientists for their views: "now, should we force these issues, start warning about them […] or would it be more sensible that the journalist would find the relevant person?"

Generally, most of them do not turn journalists down when they are contacted, but only a few ventured out and wrote individual articles to be published in the press. The indifference of Slovenian scientists contrasts with the findings of the European Commission (2007) which found that there was "unanimity among scientists that they would like a more continuing and in-depth relationship with the media" (9). This could signal a great change in the attitude towards the media elsewhere in Europe – in older studies (many are over 10 years old) the attitude towards the media was negative: that it may have a negative effect on one's standing, make it harder to maintain credibility etc. which also had the consequence of only older scientists engaging (Cooper 1994; Haslam and Bryman 1994b). The possible reasons for this divergence between the interviewed scientists and the findings of this report could stem from the lack of imperative to gain public support in order to gain or retain funding as was mentioned in the previous chapter.

6.3.3 "Appropriate reporting"

In addition to the aspects of news work that are incompatible with the scientists' work on sustainable development or otherwise and the ensuing lack of interest of the media, the scientists' weariness stems from the fact that dealing with the media carries an element of risk. On the one hand, it is an issue of personal inclination, of

avoiding the risk when "exposing" oneself to the general public: "I do not feel the need to call them myself, to expose myself, and also I write articles when I have something to say." On the other hand, engaging with the media carries the risk of losing control over content. Dealing with the media allows for less or no time at all to prepare in order "not to talk nonsense". It necessitates some effort and planning and in the end, surrendering control to journalists:

> *I think that to work with journalists you need to be, I do not know, brave enough and also have your own plan. You have to know why actually to include journalists, because in a project this is additional work. And now it is not self-evident that you do this extra step, because this is something that is beyond your control. If you write an expert article and publish it somewhere, well you fix it if it is necessary, but in the end it is the message you wished to convey. Maybe it's easier to convey it like that than to just call journalists.*[liv]

The issue of control can also be ascertained in what they consider as a good or appropriate relationship of journalists towards them. The concerns they brought up distinguish the basis for credible information in science, and is expected from the media: checking your sources, not plucking quotes out of context or manipulating with them, being prepared, as well as using authoritative sources.

One of the important aspects of "good practice" that was mentioned is the practice of quote or interview authorization – that is seen as part of a "fair regard" towards the scientists. One of the scientists said that she thinks long and hard before responding, especially in the case of quick telephone interviews, because the journalists do not have background knowledge and often take things out of context. They also often ask her to simplify and sometimes, ask ridiculous questions as for example: "what is the average pollution of the environment in Slovenia?" But, she said that she should not generalize:

> *There are excellent journalists writing texts, who make inquiries, who study up on things, have a long discussion and when they prepare the text, ask you for authorization, or rather, are grateful for the corrections, in the sense of what new things can we all learn, improve and so on. And there is this other side,*

when they call on the phone and want to know only two sentences, preferably as provocative as possible, just to fill in the space that he has to fill.[lv]

Once you have had the experience of being quoted incorrectly, or have been attributed as saying something that you did not say, you tend to have reservations about it, one of the scientists said. It puts you in a situation, where you are not in control of what is published in your name:

Yes, inaccurate paraphrasing and in the end also that of course journalists bundle it into their own context, package, but usually you do not even take, or very often do not take enough time to really listen to you, so you can tell them what your message is. But they have their own framework and take out what they want.[lvi]

6.4 MEDIA ENGAGEMENT AND SUSTAINABLE DEVELOPMENT

The final section of this chapter is dedicated to examining the contributions of Slovenian social scientists in the media and thus represents the intersection between the relationship the media has towards social scientists and vice versa. As was ascertained, journalists do not pay attention to the research of social scientists and its findings – the "science" section in newspapers, television and radio broadcasts about science are devoted to only natural and technical sciences. The mass media thus represent a great barrier; most often, in order to be included, scientists themselves need to engage; and even then it is not framed as "science" or represented as products of autonomous scientific work – the space reserved for them in specific sections and Saturday supplements are devoted to interpretive genres.

Because the analysis is limited only to the reporting on sustainable development, though, the findings could to some extent reflect the ways in which the media report on this topic. In one of the rare cases of research on the media coverage of sustainable development Tammy Lewis (2000) concluded that sustainable development is generally represented in a narrow way, in the framework of dominant

political discourse on development (255), where the main sources of information are government officials, international organizations and NGOs. The few included scientists represented the dominant discourse and were brought in as commentators, the positions alternative to the dominant discourse was represented only by few commentators who were not presented as experts (2000, 244) (similar to the case of media coverage of climate change, see: Boykoff 2009; Boykoff and Boykoff 2007; Olausson 2009).

In the media sustainable development, as well as climate change, is translated into forms deemed more accessible to the public – it is represented in the context of current affairs and as a sequence of events, and through this type of framing, personalization and dramatization of events the media mask the institutional and structural problems and thus avoid comprehensive, long-term analyses of the problem (Boykoff 2009, Weingarten et al. 2000). The question therefore is what role these social scientists play in Slovenian media discourse, that is, are they able to contribute to it in a substantive way.

6.4.1 Scientists as convenient news sources

Weiss and Singer (1988) found that reporters treated social scientists much as they would any other source and incorporated their statements or findings into "the traditional repertoire of journalistic forms" (143). On the one hand, study results were attached to a "hard news peg", to breaking news, or as background for human interest stories as well as to back up their analysis of public policy issues. And on the other hand, when they reported *about* the research itself, they covered releases of studies as events, dramatized "firstness" or "mostness" (e.g. starting with "the most comprehensive review") or emphasized the paradoxical or unexpected (ibid.).

Most of their findings did bear out in the Slovenian media texts, the main exception being that the research of the scientists was referred to less and did not attribute it any superlatives. In most of the articles where these social scientists were

quoted (54 out of 61) the scientists' research does not represent the news peg, they mostly relate to certain events, mostly organized as well as attended by scientists – panels, presentation, festivals and conferences. In essence, this means that in most cases the scientists were not sought out as experts on a certain topic on the initiative of a journalist, but were mostly reports on events to which the journalists were invited. This is not a significant finding in relation to news work in general, but in comparison to reporting on natural sciences indicates different treatment of social scientists.

In contrast to previous studies of natural and social science in the media, the analysis revealed that the media do not report (substantively) on the research of the social scientists, except for a few rare cases. That they are also not positioned as experts, commenting on specific issues or news events could be due to the limiting of the sample to those articles about sustainable development – whether they are solicited as experts in other "hard" news stories or for support of policy analysis is therefore outside of the scope of this thesis.

6.4.2 The exclusion of transformative conceptualizations from the media

Due to the disinterest of the media, the contribution to the media discourse on sustainable development requires the social scientists to engage with the media on their own initiative. While most did not report negative experiences with the media, a few stand out. These stem from their perception that they do not have access to the media – they are blocked and the reasons they give relate to the general critique of the media. This also relates to the research they are doing and the pattern of discourse on sustainable development they subscribe to – their research deals (also) with social and political issues and they all hold a transformative understanding of sustainable development.

One of the rare ones who stated that he has had the experience of sending articles to a newspaper and not being published, said that the media is interested in "big names", those that will have some resonance. For these individuals, he said, what

they say is not so important. “If I had a name,” he concluded, “then I could count on them to listen to me; not because of the topic”. Even one scientist, that is very prominent in the media, said that when he refers journalists to other colleagues who have greater expertise on a certain topic, they do not follow up. For the rest of them their perceived exclusion extended only to a lowered interest of journalists, not in the rejection of their writing.

The reasons they gave for the blockade relate to the ownership structure of the media – private companies that do not want to further propagate ideas against their own interest and the interests of the companies advertising in their newspapers. Here the topic of transformation of the social system towards sustainable development or other topics that would refer to changes in power structures are reportedly blocked. For one of them there was a clear reason that the media were never particularly interested in him – because he has never hidden the fact that he is a Marxist: “for media this kind of thought it not always attractive”.

Two of the five scientists who reported being eschewed by the media, though, have had great access to the media, perhaps just not as much on the issue of sustainability. One of them said that since he has come to the realization that in order to attain the goal of sustainable development “it is necessary to change and rein in capitalism”, the doors have been much more closed for him and other like-minded people. On the one hand, his access is getting smaller because of the influence of capital in the media; on the other hand, he thinks that the journalists and editors themselves do not personally believe there is a viable alternative. The second, while his reasoning was the same, conceded that in his case, this could be due to his writing style – he characterizes himself as a provocateur, not someone who is “reasonable and pleasant”.

Despite the perception of a negative attitude of the media towards transformative understandings of sustainable development, three of the scientists in the *transformation* group represent the majority of the sample of media texts (109 out of 151). This does not indicate a higher interest of the media for these kinds of conceptualizations generally, as a recent study found, only six percent of Slovenian

journalists writing on sustainable development pertain to this understanding (Vobič et al. 2014, forthcoming). Their presence in the media reflects their relatively greater motivation to engage with journalists, write their own articles as well as engage outside of their work, which makes them more well-known. Their motivation relative to others can to some extent be attributed to their understanding of sustainable development, that is, the necessity of a radical change in thinking, institutions and patterns of production and consumption. This means they are more critical of the state of affairs in society or perhaps more impatient:

> *This is a very demanding project and because of that it is necessary to test these theoretical methodological assumptions and often it turns out that the application in life is much slower than we would want in this theoretical methodological field. […] In short, this is about a civilizational revolution, if we call it that, and no wonder we are all a bit impatient with implementation. Of the great idea of sustainability.*[lvii]

7 PUBLIC KNOWLEDGE AND PARTICIPATION AND THE BOUNDARY WORK OF SOCIAL SCIENTISTS

With the rise of the participatory paradigm in science policy as well as in public discourse, coupled with the seeming inherentness of public participation in reaching the goal of sustainable development, it is necessary to examine the nature of the engagement of social scientists. Although the social scientists, included in this research, do not look unfavorably upon public engagement and even support and encourage it, the way in which they understand the relationship between public and scientific knowledge can have bearing on their role in contributing to a vibrant public sphere.

The aim of this chapter is to examine the relationship of social scientists towards the public in order to ascertain whether their public engagement (potential or actual) is directed at the public as a (general) audience, as engagement *before* or *for* the public, or if it includes the aspects of reciprocity and dialogue, as engagement *with* the public. The focus therefore is on the boundary work of Slovenian social scientists, first through the analysis of their scientific texts in which they "prescribe proper ways of behaviour for participants and non-participants" (Halffman 2003, 70) and thus demarcate scientific knowledge from public knowledge. Secondly, the analysis of interview transcripts and media texts delves into the aspect of boundary work that, while demarcating science from non-science, "defines proper ways for interaction between these practices and makes such interaction possible and conceivable" (Halffman 2003, 70).

7.1 PUBLIC AND SCIENTIFIC KNOWLEDGE – DOMINATION OF DEMARCATION

As a topic of research sustainable development is "social at its core", as Becker et al. (1999, 9) wrote. Sustainable development is inextricably bound to the ways societies are ordered and the processes, priorities and relationships within. The engagement of

citizens is thus seen as inherent, whether in and instrumental way as those executing and implementing policies or in a normative and substantive way as a way to lead to a democratic resolution as well as improving mutual understanding. In this context, it is not surprising that of the researched social scientists write on this topic in their scientific writings, some only touching upon it, while others delving into it more extensively. Because most of them are also publicly engaged in various ways, it is important to inquire into their understanding of the relationship between scientific and public knowledge and of the role public participation plays in their conceptualizations of sustainable development.

On the basis of the analysis of scientific discourse[38] – the extent to which public participation is discussed and how it is characterized as well as the rationale and preconditions for their inclusion, five different ways of understanding this relationship can be discerned, which run parallel to the different approaches recounted in STS literature. In the majority of the cases, by distinguishing public knowledge from science, the social scientists construct a boundary between the two. The other examples include scientists who, through their discourse, try to break down the boundary or even explicitly call for a closing of this gap. On the other side of the spectrum lie a few scientists, who mention public participation more in passing and therefore analyzing their writings would lead to conjecture about whether their silence about the public (and in some cases emphasis on the role of science) constitutes boundary work or just a different focus.

7.1.1 Silence as exclusion

Only three of the scientists did not touch upon the aspect of public participation more than in passing in their writings. As public participation is seen as essential, whether only for instrumental reasons or not, I focus here on the most prolific of all the social

[38] Because not all fields of research use the same terminology or ascribe a distinct meaning to the concept of the public or the public sphere, the analysis encompasses all the writing about the public, citizens, Slovenians, the population, etc. as well as other roles in which the scientists interpellate members of the public – users, consumers, stakeholders, etc.

scientists in my sample (109 of the 528 texts collected), who was, in this respect, surprisingly silent. He writes about the public more in passing, and mentions other actors in the context of implementation: individuals, communities, non-governmental organizations; but the majority of his attention is directed at decision-makers onto whom he also imparts the political responsibility for sustainable development.

In comparison to the other two, he responded to the request to be interviewed and through it imparted his understanding of this relationship. His focus on other actors, e.g. decision-makers and business leaders in the texts as well as in the interview are not a reflection of being in principle an advocate of top-down processes, but reflect his "impatience" and focus on the actors he sees as holding political responsibility and being most effective. In discussing his "double" conceptualization – a normative and a political one – he said that the goal is ambitious, but we will get there step by step by the realization of individual projects. As for the public, he supports and is engaged in informing, raising awareness, local projects, visiting schools, giving lectures etc., but:

> *You know where I see the problem. If we had enough time, then my answer would be very simple. Education, sustainability education, environmental ethics, absolutely as the basis. But we don't have time for this, to wait now, not even for your generation, let alone the one which is starting kindergarten now.*[lviii]

His silence on the one hand does not imply boundary work, because it does not characterize public knowledge differently or in contrast to scientific knowledge, he just points out the lack of it in the general public; also he does not designate (a certain type of) knowledge as a prerequisite for participation. On the other hand, the exclusion of the public, though "only" for expedience sake, indicates that what is at stake has already been decided.

7.1.2 Level of knowledge as a precondition

The boundary work in the scientists' writings in the next two sections is based on two distinguishing features, which for most run in tandem: one of them is the focus on the lack of knowledge and the other the value- and interest-ladenness of public knowledge in contrast to scientific knowledge. In contrast to research on the natural and technical sciences, none of the scientists in the whole sample subscribes to the more technocratic form of the deficit model, which presupposes "a continuum of rationality in the treatment of technical and practical problems" – where the presumption is that all (political) decisions can be legitimated through reason (Habermas 1970, 63,4). While agreeing that these kinds of political problems include questions of values, goals and needs and emphasizing the importance of the participation of the public, the writings of the these two groups of scientists (together eight out of twenty) resemble the continuation of the deficit model in the so-called PUS model. Whereas the issue of values is not ubiquitous among them, the question of the *education deficit* is and is the focus of this first section.

The *education deficit* group of scientists stresses the importance of public participation, but establishes (additional) education as a prerequisite for it. In their case the rationale for including the public does not lie in the possible contributions of the public in how to solve sustainability issues, or for that matter, what these issues are for them, but in the publics' contribution in the actual implementation. The focus on education in itself is not necessarily a case of boundary work, as it follows from the division of labor; it is, though, when it is about teaching the right or "appropriate" values, the right or "objective" knowledge, and/or when it is seen as a prerequisite for the public to be included in decision-making.

As many others, the scientists in this group believe that in order to achieve it, sustainable development needs a broad consensus, which can only be reached by an environmentally aware participating public. Broad participation is important, also in decision-making, but, and here the role of education comes in, for "quality" reactions we need to provide "objective information" about the "objective state" because the

publics' perception of the environment "almost never corresponds to the actual state of affairs"[lix] (19.5., 53). It is therefore necessary to expand ecological education and education in general to enable a broader understanding of the interdependencies between different (environmental) elements and of the importance of these relationships and values in decision-making and for "the responsible use of knowledge" (30.7., 204; 19.4.), i.e. an "appropriately" educated and informed general public (30.11., 35).

On the other side, they criticize the "participatory culture", i.e. the "awareness of the significance of including the public" (30.6., 67), in Slovenia or the lack thereof[39]. The public also needs to be included in a timely fashion, not towards the end of the decision-making process in order to fulfil formal requirements, otherwise it feels deceived and powerless and responds negatively to implemented policies and regimes (33.5., 120; 3.1.; 3.10.). They write that through openness and inclusion their distrust in the experts will be mitigated (19.5, 59). Two of the interviewees also said that it is not just a procedural issue – participants are discouraged when they contribute, but their contributions are not even acknowledged.

In the writings we can see clearly the deficit model of the relationship between science and the public at play – trust, support and acceptance are treated as inherent to education and knowledge[40]. Another indicator of this model is that they present an instrumental rationale for including the public – public participation leads to personal identification with the problem and consequently taking responsibility for sustainably oriented development and acting accordingly (3.3.; 30.6.; 19.5.).

An additional important point is made by two of the scientists who point out a crucial lack of knowledge that is the reason the public often does not participate. The public is not aware of the rights and obligations they have in (planning) processes as well as more practical knowledge on the possibilities and ways of participating (33.4.;

[39] Too often decision-makers are averse to this, and as one said in the interview, are surprised if someone actually shows up, because their goal was not actually to have a discussion, but just to fulfill the letter of the law.

[40] Although she was also referring to politicians with low awareness, one of them explicitly said that until the overall level of awareness and educations is raised, scientific findings will not be listened to or taken into consideration.

25.5.). In quite practical terms, this also means that they need to be informed when these kind of opportunities come up.

7.1.3 The “inappropriate” interests and values of public knowledge

Part of the issue of education is not just the lack of knowledge, but also the need for awareness-raising and imparting certain values to citizens. Education would thus instill or foster the “right” values and attitudes e.g. more ecocentric views such as seeing nature as intrinsically valuable (3.2.: 4.4.). This understanding of education also falls under the purview of the deficit model, because it implies that with (scientific) knowledge come a certain set of values and priorities that are congruent with those of the scientists. Four of the eight social scientists subscribing to a deficit understanding of the public, in addition to education, focus specifically on *the values deficit*.

In contrast to previous research on boundary work in natural and technical sciences, we can find two distinct notions of value-ladenness: one in the sense of having the right environmental-protection values, which the scientists hold (and expressed explicitly and freely in some of the texts and the interviews) and the other in the sense of personal interests in contrast to (the appropriate) general or public interest.

The scientists point out the big gaps in the communication and understanding of the lay public, but in order to change their beliefs, values and paradigms of thought (25.2) you need more than just the imparting of content. As said before, education is seen as a fundamental prerequisite, the “only way” to form critical and socially active citizens. But processes that include a “broad mass” of people are not effective, if they are not *appropriately* educated and aware (25.5.; 25.12.; 33.7.). What appropriate means in this case, is not clear, but from other writings we can discern how they view public participation: the public because of a lack of knowledge often forms opinions based on current (individual) interests or just disinterest (33.4., 654) instead of being able to, in an informed way, “define the *right* balance between preservation and development” (25.10., 23; emphasis added; 25.7.; 33.7.). Public participation in

Slovenia is thus said to be marked by total mistrust and baseless rejection of everything, breeds misunderstanding and "a lack of mature and productive solving of problems and conflicts" (33.4., 656; 33.5.; 33.7.).

The most cogent account of the reasons for "erroneous" perceptions of the public was analyzed by one of the scientists, who wrote that their perception is modified by many factors – short-term thinking, deciding according to current needs and self-interest as typified by one of the typical responses in environmental issues - the so-called NIMBY effect (Not In My Back Yard) (19.5). Besides these cognitive processes, the author notes that the understanding of the environment is shaped by personal (emotions and motivations) and socio-cultural processes – i.e. "filters" that influence the "objectivity" of their perception (19.5). This includes age, education, cultural, religious and national background etc. Because individuals can only accept a "limited amount of potential information about the environment" and these mainly are those that add to an already formed image, lessen uncertainty or demand less action, the publics' perception is, as the scientist writes, usually wrong (19.5., 53). They set their own priorities, which are not necessarily based on experts' findings.

In these *education* and *values deficit* groups the rationale for including the public does not lie in the possible contributions of the public to how to solve sustainability issues, or for that matter, what these issues are for them, but in the publics' contribution in gaining a broad consensus and consequently in actual implementation. Education and knowledge are seen as a vehicle towards greater trust, support, acceptance; insufficient knowledge is said to lead to baseless rejection of everything resulting in unproductive, also harmful debates. The role of the public is thus seen in an instrumental manner, in order to gain support for long-term changes in behavior. Through participation the public gains an understanding of the issues at stake, the decisions to be executed gain support, as well as lead to personal identification and consequently taking responsibility for sustainably oriented development and acting accordingly.

As with those subscribing to the PUS model, the discourse of these two groups is based on a few underlying assumptions that withhold the boundary between scientific and public knowledge. First of all, science is seen as authoritative and superior because of its "specific form of rationality" (Felt 2003, 16). Secondly, the responsibility for the bad relationship between science and the public and consequently on the unproductiveness of debates on public issues is put squarely on the public as passive, insufficiently literate and holding vested interests.

7.1.4 Intrinsic value of public participation

The next, *democratization* group includes five of the twenty scientists and argues for the inclusion of the public for normative reasons – the inclusion of the public in decision-making processes is seen as intrinsic to the democratic resolution of public problems. On the one hand, public participation is seen as important in a procedural sense - "in order to protect democratic procedures and the principle of publicity" (12.8., 123), as an unquestionable element of the democratic process. If the common goal is a better quality of life, the criterion of good practices lies in the process, not the result (5.1.; 39.69) – public participation brings transparency, honesty, fairness, and in the end legitimacy to the process (5.1., 5, 9). Not only that, public participation needs to be fought for, new institutions, processes, forms of representation and communication need to be formed in order to systemically strengthen the political power of the public (8.13., 106).

On the other hand, public participation also has a functional role – opening up the political arenas and democratization are crucial for implementing sustainable development, in their view, because it would add important local and tacit knowledge as well as include a variety of perspectives, adding the voices of marginalized groups in particular and the parts of the public, that do not want political authority, in general (8.4., 50; 39.50.; 39.25.). Public participation is important not only to fulfil the "principle of inclusiveness", to thus collect multiple and various views and opinions and secure legitimacy for the final decision, but also in order to allow for collaboration

and mutual learning (5.2., 84). This also means that education is not a condition for entering the process; it is through inclusion and participation that they can develop understanding, empathy and competencies (8.13., 116). The public benefits from these processes:

> *attention is directed at that which is important for people, co-operation and partnerships are promoted, an awareness of strengths and weaknesses of a community forms […] hidden potentials and energy may be discovered (5.2., 85).*

Without a critical dialogue between the multitude of perspectives and individual experiences a common experience and understanding is not possible (8.13, 114; 8.12.; 8.14.). In this context, they criticize the reality of the decision-making process as being displaced by expertise and technology (12.2.) and/or as intransparent, including the public as observers and means of legitimation only at later stages, when "possible changes are already very complicated or practically impossible" (5.4., 39; 5.1.).

Regarding the boundary work of these texts, we can discern different levels within the group. Only one of them emphasizes the importance of public participation procedurally, but draws a boundary between scientific and public knowledge by contrasting disinterested science with the public where interests, needs and offence play a role (12.9., 69). The rest, although they make a (different) distinction between them, do not see it as playing a role in the decision-making process, and thereby narrow the boundary.

This does not mean that this group sees scientific knowledge as equal to public knowledge – this group follows the so-called "decisionistic model", that is based on the separation of the functions of scientists and other political actors, be it politicians or citizens, as well as drawing a boundary between the two by the separation between questions of values, goals and needs and objective and technical knowledge (Habermas 1970, 63, 66).

The division they construct through their discourse is between different types of knowledge. The public is seen here as the bearer of different or particular knowledge, different perspectives as well as values and interests. It is thus seen as

"originators, as identifiers, potential victims or implementing actors" and thus less objectified (Van den Hove 2000, 462; Stirling 2006); also, here the individual is positioned first as a citizen, not a consumer. The public represents a "common-sense perception of the world" and a broader social type of rationality – a pre-conceptual understanding (8.14., 256). It also holds more fragmented, local and experiential knowledge and through participation may gain a broader perspective on societal problems (5.5., 31; 5.1.; 39.69.). Scientists, on the other hand, are distinguished by a limited "highly intellectualized system of ideas" (8.14., 256), yet have less localized, broader perspectives. "In essence," one of them writes, "it is a confrontation between two types of rationality, a broader social one and a limited expert one" (12.5., 800).

While these instances of boundary work in the case of sustainable development are not as problematic, since they are based on the division of labor and couched in discourse on inclusiveness and democratization, this group's understanding of the relationship between science and the public has critical implications. While both types are seen as essential, scientific knowledge is more or less explicitly seen as the precursor. Sustainable development is in their discourse designated as a complex public issue – as a case of "trans-scientific" problems (12.2.) or "complex political decisions" (8.13., 114), where decisions cannot be based on reason alone. It is in these matters riddled with uncertainties, lacking scientific consensus and "when the public interest is not clear or conflicting", that the public must be included (5.1., 7; 12.2., 8.13.):

> *there is no other solution than public confrontation of different views, arguments and values. This is a kind of public learning process of all participants, where in situations of cognitive uncertainty nobody can speak on behalf of incontrovertible facts, the authority of knowledge, objective truth.*[lx] *(12.8., 123).*

Framing more complex issues as "trans-science", where expert knowledge is not enough for "rational decision-making in the name of others" (12.8., 125) and because they are not "value free and ethically neutral" (12.6, 34), then suggests that in cases of

scientific consensus, of so-called "normal" science, the public would have nothing to contribute.

That scientific knowledge is seen as a precursor can also be seen in the way they describe the role of science in relation to the public. Because the public cannot fully understand sustainability and imagine its effects, scientists have the role of "ensuring the knowledge needed and facilitating a discussion" in order to reach a consensus (5.1., 7; 39.22.). The task of discussing values is then imparted on the public after the experts have done their work (12.5.; 12.4.; 8.14.):

> *Expert evaluation […] can be only the first step. Because it is in this case firstly a value and ideological question, it is ever so important that the debate is opened also for the broad interested public, the role of which is precisely the reflection of values.*[lxi] *(8.14., 68)*

As with those subscribing to the PEST model, these scientists agree that the public is not bare of rationality (Felt 2003, 16), that there indeed exists a specific public knowledge that is complementary to that of science. More significantly, the discourse of these Slovenian social scientists echoes the calls for the democratization of science that appeal for public participation (only) in cases of scientific uncertainty or in the case of complex social problems, which explicitly include issues of social values. Thus public knowledge is decisive for decision-making, but it is not seen in the texts as having much bearing on scientific knowledge itself.

7.1.5 Breaking the boundary between scientific and public knowledge

As mentioned in the third chapter, previous theoretical writing and empirical research on boundary work has focused on more contentious instances, when the authority or credibility of science were more explicitly put into question. Therefore, there has not been much discussion or research into the attempts to break down or weaken this boundary. The rare studies focus on interdisciplinarity, for example Scott Frickels' (2004) research on the new interdiscipline of genetic toxicology and Christine Woods'

(2012) research on the making of the field of gender studies, where the boundary is porous and convergence of knowledge, skills and resources is possible. Yet, in contrast to the science-public divide, it does not represent two different social practices and does not include such a division of labor. Whereas in the case of the boundary arrangements between the spheres of politics and science, Robert Hoppe (2005) wrote that convergence between these two spheres is just "public lip service" and designated it as "rather inarticulate or latent" (2005, p. 208). While it perhaps does not warrant such disparaging terms, his observation that the convergence of practices is generally not actualized, holds true. Yet, I would argue that discourse in itself is an enactment of boundary work and holds value even without (physical) actions of scientists.

The last, *critical* group includes five scientists and represents those who do not uphold the boundary between science and the public as universal vs. particular or local, objective vs. experiential or burdened by interests. They reject the false premise of the division between facts and values, which "conceal[s] pre-existing, unreflected social interests and prescientific decisions" (Habermas 1970, 59) and bring a critical reflection to the issues brought up by the needed division of labor between the public and scientists – those of the asymmetry of power and access to information as well as of (veiled) conflicts of interest, assumptions and values.

Similarly to the previous democratization group they emphasize that policy decisions are not made based on "objective knowledge" alone, but are based on values and social processes (27.12). Yet, as with the more recent critical approach to understanding the relationship between science and the public, exemplified by the writings of Brian Wynne (1996; 2008), this groups' understanding of the relationship between science and the public is marked by a weakening of the boundary between scientific and public knowledge and stems from their critique of current scientific practices and the ways in which the public is (or indeed is not) included in the decision-making process. The difference lies in their understanding of scientific knowledge – for them it "suffers" from the same issues as public knowledge – the lack of reflection about (hidden) assumptions, interests and values, as well as the inconsistencies between declared and realized values (27.17.).

Therefore, there needs to be a realization, that what is and can be known is not enough (14.2.). In the face of complexity hierarchical structures that "bluff oversimplification" (38.15., 195) and offer only a choice between "alternative futures" (14.2., 35) need to be replaced by democratic forms of organization. Co-operation and team work is necessary because:

> *you are either a rather narrow specialist, who knows a lot / enough / something about a small fraction of reality, or you know nothing deeply enough. (38.15., 192)*

What they call for is critical thinking, the ability to argument and having empathy for different perspectives and needs as well as the disclosure of conflicts of interest and underlying values (27.8.). Resolving differences in opinions and interests cannot be achieved by destructive criticism or the tendency of trying to win a debate just for the sake of it (27.17.; 27.6.).

Solving public issues has to be based on democratic principles and methods, through inclusive and reflective social learning and reasonable democratic decision-making (27.4.; 14.2.; 13.2.). They advocate what Habermas (1970) called the "pragmatist model" – that is for critical, reciprocal interaction, which must be "rooted in social interests and in the value-orientations of a given social life-world" that determine the practical needs in a concrete situation (86). As one of them wrote, in the end the following is important:

> *We have to be aware of uncertainties and risks. We are more interested in the importance of the questions we ask ourselves than the results, knowing that we cannot propose the 'right' solutions, but just the possible solutions and that our values and social processes play an important role in decision-making.*[lxii] *(27.12., 212)*

Out of the five groups these few scientists are an outlier – while they acknowledge the division of labor they do not see scientific knowledge as a precursor to public debate – either as a precondition for participation or as the authority setting its agenda. The role of the public here has evolved from naïve spectator, witness, supporter and ally or

participant, to partner. In contrast to many calls for the democratization of science, which deconstruct only scientific knowledge and idealize public knowledge as more authentic and reflexive, these scientists point out that both are not beyond contestation. The solution they see is in co-operation and mutual learning. In order to achieve this it is necessary to "remove the severe boundaries between science and society" (13.13.) and to start:

> *thinking differently about a common space of education, about a new relationship between ordinary people and experts and between traditional and untraditional students.*[lxiii] *(13.8., 1475)*

The public should be seen as a partner, not as an object, moreover, scientists should ensure the conditions for its constructive actualization, because it's not just about the "interested public", they need to reach the "disinterested" one as well (23.9., 188, 196).

One of the social scientists in this group focuses on the role of the university in attaining sustainability and puts forth a scathing critique of the state of science that either hides and hoards knowledge or is distinguished by its disconnectedness, one-way discussions, rigidity and concentration of power (13.5.; 13.2.). The university is not doing its part – scientific engagement represents a model of transmission and dissemination of knowledge where scientists turn up their nose at unprofessional informal knowledge (13.13., 126; 13.7.).

On the one hand, the problem can be seen to stem from how scientists view "the public" and how this term has been misused. As one of the scientists wrote:

> *one time a loud, aggressive minority group that has a specific, narrow interest represents itself as 'the public', another time a minority of expertly and ethically aware people acts in the name of 'the public', who do not have in this action any personal gain, but is certain that it represents the interest of the silent and indifferent majority.*[lxiv] *(23.9., 194)*

Consequently the public is not on their mind and not included in their work. They only have to deal with it, when this "amorphous creature" starts protesting and poking its nose into the experts' work (23.9., 194).

On the other hand, the boundary is engrained in scientific work itself, for it is based on the assumptions that it is possible to control the world around us, that knowledge has bettered people and that the lack of knowledge is a solvable problem, even though it is an inevitable part of human existence (13.7., 1915). As two of them pointed out, the agents of the imbalances of the world are the most capable, influential people who went to the best universities in the world (13.6., 24; 14.6., 97).

7.1.6 Boundary work and the role of science in sustainable development

The analysis revealed that the four different roles conferred to scientists, presented in chapter 5, relate to the different understandings of the relationship between scientific and public knowledge. Those that draw a stricter boundary between them, as a boundary between "objective knowledge" and (individual) interests and values and therefore posit the problem of the public as a question of knowledge, or exclude them altogether, see the role of science as providing instrumental knowledge. Those that see the question of values as intrinsic to the resolution of public problems, irrespective of the boundaries they draw, tend to see the role of science as one of providing reflexive knowledge.

Table 7.1: Boundary work and the role of science

	Role of science
Silence	Policy informing
Knowledge deficit	Policy implementation
Values deficit	Public
Democratization	Critical/ Policy implementation

Critical Critical/ Public

The *democratization* group is not as clear cut as the rest. While they agree that public participation is necessary, they differ in focus: those that see their role as a critical one focus more on the shortcomings of scientific knowledge in decision-making; and those that see their role in policy implementation focus on the valuable contributions of public knowledge.

From a normative standpoint, four out of these five understandings have negative implications, especially when most of these scientists are engaged in some way and extent. While the potential consequences of boundary work will be explicated in the conclusions of this thesis, one finding will be pointed out briefly. While present in three of the five groups, some of those who see the role of science in sustainable development as teaching the public, understand the problem of the public in their lack of knowledge and subsequent lack of "appropriate" values. This deficit and top-down understanding is problematic as it sees the role of science in working *before* and not *with* the public.

7.2 RULES OF ENGAGEMENT

As Halffman (2003) argued, boundary work constructs the distinction between science and other practices also through defining the proper way of engaging. In the case of Slovenian social scientists, these rules of engagement are not prescribed or as explicit, due to the absence of regulation of their communication with the public by university and faculty PR departments as well as the limited or no reaction from their colleagues. Also, with the absence of instrumental reasons for their public engagement, the way in which the Slovenian social scientists describe appropriate or worthy engagement represents a form of boundary work that is not agonistic or intentional, but one which inadvertently constructs a desired representation of science in public.

What is considered the proper way of engaging is part of scientific culture and may not be related to a specific department or faculty. This cannot be extrapolated from the data generated through the in-depth interviews, but their comments do display a certain level of homogeneity on this issue. For all of them public engagement in itself does not conflict with scientific authority or professionalism, with the main condition being having a certain level of knowledge. Those who engage should be top-notch scientists, holders and communicators of "authoritative and true information" based on scientific research. Only a few discussed the importance of adapting content and the skills involved as well as the question of authority in the eyes of the public rather than authority based on academic achievement or mechanical objectivity.

7.2.1 Adaptation of form and content – effort, simplification and artistry

One of the challenges the scientists discussed was how to prepare material or knowledge for different publics, be it for a newspaper or an "expert" journal, lecture or discussion. The challenge, though, was not so much in the difficulty of it, but in the time and effort needed for preparation. They point out the effort that is needed in order to bring their contributions "closer" to those for whom it was intended:

> *For example, in this part, when you have these lectures, [...] you need to invest an enormous amount of energy, right. You also have to prepare differently than for a presentation at a scientific conference. There they are short, but very concise. Here you need a completely different approach. Actually, you need to prepare separately for each target group to which you present. Because you say it differently.*[lxv]

The issues some point out about why the public does not understand or is not interested in what scientists have to say are the narrowness and abstractness as well as the specific and coded nature of scientific language and presentations. These are seen as the reasons that many seminars, lectures and workshops did not get a good response in the sense of attendance or (media) attention – the topics are often much too narrow to attract the general public. As a few of them noted, these events are

often “the convinced convincing the convinced” and thus have a relatively low impact. But in the end, these are not “high-flying ideas,” but everyday ideas that anyone who has common sense, thinks logically, can understand.

While some saw the need to adapt in terms of content in order not to “lecture” the public, especially on local issues, one of the scientists related to the adaptations for engagement explicitly in terms of simplification – which runs from theoretical, conceptual writing, including empirical data and, at the bottom of the pile, platitudes aimed at being politically agreeable. Although he has his qualms about quantification, he said that with “a bunch of words” social scientists are not convincing: “I am the most convincing with numbers.”

Only a few of them saw the communication of science to the public as more than just simplification and as a linear model of communication. In order to communicate well with the public a scientist needs certain skills. One of them expressed his utmost respect for those who are “good popularizers”, “have a gift for it”, who know how to explain complicated and technical things that are outside of people’s experience. That is “a real art of writing”. It is not that straightforward, another said, which unfortunately not all realize or are willing to do:

> *Scientists, who produce a way of seeing, are training in a particular type of communication that is completely ousted from today's public space. [...] Then they don’t know how to launch it in a way [...] that the general public is willing to accept. But here, I will say, it is necessary to seek this [different] form and I do not know if scientists are exactly willing to look for these things.*[lxvi]

As they said, it is not just about the content, but the form. While one of them discussed the greater efficiency of art to change values, a few others pointed out the importance of joining more conceptual knowledge and presentations with (first-hand) experience. One of them spoke about it in more concrete terms in relation to public presentations in the case of spatial and architectural planning. He discussed experiential and conceptual presentations and their advantages and disadvantages:

> *with these conceptual ones, you need to think about them or know a particular code, they are more hermetic, you need more time for them. And then people*

don't have the time, the energy, to go in-depth, usually do not even have the knowledge and then it remains more on the surface [...] Experiential ones are those that are more intuitive and closer to everyday perception and these are more efficient and you get something out of them faster. The most effective is a combination of the two, but for these you need some time.[lxvii]

7.2.2 Construction of authority in engagement

As was shown in chapter 6, Slovenian social scientists see the criteria of scientific evaluation as a limiting factor for their public engagement, but at the same time use them to demonstrate their own scientific quality. Similarly this can be seen in their rules of engagement, with the most preeminent one being having a certain level knowledgeability, which is seen as a prerequisite to public engagement in a few ways. For some it represents the drive to engage: "I think that when you achieve a certain level of knowledge, you start to feel a need to share it". For others, it is something that is preferred – that those who engage have "cognitive power". It should be "first-rate" scientists, those with "deep and sound findings", with "excellent knowledge" that engage. They should communicate "authoritative, correct information", backed up by scientific work. One of them who is not very publicly engaged said that he is still wrestling with this topic and would like to do more research, to gain a better understanding, polish up concepts, before venturing outside independently.

In some cases they discussed what is not seen as appropriate engagement. This distinction related to the time dilemma discussed earlier and to the scientists' scientific ability. One expressed her admiration for those who engage, but in the same breath: "then they are lacking elsewhere, you know, what goes around comes around":

If you look at the references of the people who are in the media a lot, at round tables, you will find that they publish very little scientifically, they do not have a lot of points*. This correlation is, as I have noticed, because it seems to me that you cannot be in two places [at the same time]. You cannot write a scientific article and be engaged. [emphasis added]*[lxviii]

One of them went further, saying that some try to establish themselves in "practical engagement", because they have not made a name for themselves with their scientific findings – a researcher who only publishes in newspapers cannot be a *noted* researcher, in his opinion. Another expressed that engagement may be seen by others as a "degradation of scientific work", because it must be simplified:

> *you need to lower scientific criteria to a lower, more common level and this is not always positively accepted. It looks like, for example, that you are not capable to work in another, that is to say, scientific way.*[lxix]

What is considered as "political" activities are also not appropriate – they shouldn't be "promoters", their engagement should be totally apolitical. This was especially emphasized by two researchers who, in the past, held a position or ran for parliament. One of them also signs his articles in the media accordingly – when the message is more political he uses his role in a non-governmental organization, when the message is based more on expertise, is *ethical,* he uses his faculty role[41].

Authority is seen as based on their scientific publications (peer-reviewed) as well as the impact they have within the scientific community. Engagement in their view has no impact on it: "If you are good, then you are good, if you are terrible, you are terrible." Only a few related to authority as attributed by the public: "It all depends on how society accepts you," one of them said: "You can't be an authority to yourself, if society does not accept you." In this context, one of the scientists spoke about the dilemma of being more democratic and losing your authority in the eyes of the public, especially in dealing with the interested public and especially users:

> *I think that the profession loses authority at this expense. Suddenly it happens that the public knows everything, usually better than the experts, because they sometimes confuse you asking them or soliciting their opinions, with you not having a full understanding or a vision, or that you have no clue.*[lxx]

[41] Unfortunately, I failed to realize this and ask him what he meant by "political" during the interview. Although, in 2013 he used his faculty affiliation in an article for the Saturday edition of one of the newspapers and advocated for "democratic ecological socialism" in Slovenia (40.M.17).

7.2.3 Register of scientific writing in authored media texts

The rules of engagement can be seen as running parallel to what the scientists expected of journalists – displaying knowledgeability by basing your media writing on credible information, whether your own research or using authoritative sources. As for most of them simplification of form and content for the purposes of public engagement is par for the course, the question is, how their scientific authority is distinguished in their media texts.

In the articles the scientists wrote themselves, in a few cases in co-authorship, they do not reference themselves as researchers and scientists or indeed their own research, but they do reference other scientists and research findings. In this sense they employ some characteristics of the register of scientific writing to a greater or lesser extent, thereby differentiating themselves as scientists. In terms of their style and approach to writing the differences in register are more difficult to ascertain (than it is in the natural sciences). The writings in the scientific texts of many are not very coded – depending on the field they belong to; for example, those from the field of geography and pedagogics are less so. Besides this difference, the Saturday supplements are more "highbrow" and are generally more complex in terms of content and style.

The articles that stand out, but do not represent the norm, are those that very obviously use the same register or conventions of writing scientific texts: using scientific referencing, as well as presentation (and critiques) of prior research, and the presentation of (for the public) minutia of methodological aspects of their research, as for example the normalization of indicators: "The normalized value of each was multiplied by its weight and combined into three sub-indexes" (4.M.1.).

Their referencing spanned from the basic – attributing ideas to other scientists by name, to the conventional scientific, including the year of publication in brackets, e.g. "according to Lester Brown (2005, 2008)" (40.M.18.). One of the "extreme" cases was a scientist who referenced specific graphs in his text as well as page numbers:

This belief is strengthened by graphs no. 10, 12, 13, 14 in the study Pilot 2006. Environmental Performance Index. Yale University, which shows correlations… (12.M.6)[lxxi]

The continuation of scientific referencing from scientific to media texts indicates a less intentional form of boundary work, as it is not meant in a demonstrative sense, but as a routine practice. As one of the scientists, who includes references within media articles, explained in his interview, he never wants to "adorn himself in borrowed plumes." Referencing, for him, means that "nobody thinks that they have mastered everything. And some imagine that if you don't say anything, that nobody else has researched it."

Those that also stand out require prior knowledge[42] – either of the studies or documents they are referencing, or how e.g. BDP is calculated. Some also include data and information that seems superfluous (in relation to journalistic writing) as e.g. listing the amounts of rainfall in millimeters for many locations or data about hectares of arable land:

- *In western Slovenia, Železniki with its surroundings receive an annual rainfall of 2000 mm, which means the humid type of climate. Further, if we consider that the surface is made from older non-carbonate rocks on which thicker dystric brown soils develop... (39.M.14.)*[lxxii]
- *Even without the temporal aspect of links positive correlations exist between the index EPI and GDP per capita only on a general aggregate level, that is the sum of the scores of all indicators, but not between the points of individual indicators and GDP per capita. (12.M.6.)*[lxxiii]

In the majority of the articles, though, instances similar (or less severe) to these are couched in between more illustrative passages, that explain some of the concepts

[42] Here, admittedly the issue of what demands prior knowledge is colored by my perceptions – not only am I a "native" as a social scientist, I have also to some extent "gone native", especially with this topic and even more with the writings of these scientists.

unlike in the scientific texts – there they are taken for granted to some extent. Some, though, are reminiscent of short scientific articles or report introductions.

7.3 SCIENTIFIC DISCOURSE ON SUSTAINABLE DEVELOPMENT IN THE MEDIA

The concept of boundary work refers not only to the construction of distinctions between science and non-science through discursive practices, but the establishment of epistemic authority, whereby scientists protect their territory and exclude other, less authoritative disciplines or the public, e.g. as was shown with the issue of problem ownership in chapter 4. In this final section, I focus in on the differences in discourse between the scientists' scientific and media texts, especially on differences in their presentation of sustainable development. The question here is, whether their writing on sustainable development in the media conceptualizes it in a way as to include or exclude the participation of the public, whether they are writing *before* or *for* the public or interpellating it.

The analysis focuses more on the articles the scientist wrote themselves and interviews[43] where the scientists had a greater control over the content. According to the classification of the scientists into different groups, all of the different patterns of discourse on sustainable development were represented in the media with one aspect standing out. Those who subscribe to the transformative understanding of sustainable development are all present in the media, as well as represent the vast majority of the articles in this sample in all categories[44]. This is also due to the fact that the three by far most prolific scientists represent this position.

[43] Interview authorization is a standard practice, which gives the scientists control over what is published to a larger extent than when they serve as a journalistic source. In comparison to authored texts, though, the journalists' questions are a form of constraint on what is said – they set the agenda, not the scientists.

[44] This stands out in stark contrast to the general reporting on sustainable development in the Slovenian media, where these types of conceptualizations represent the minority of texts (Vobič et al. 2014, forthcoming).

7.3.1 Sustainable development as a political issue

With regards to their conceptualizations of sustainable development, there were no significant differences between their scientific and media texts. The articles were mostly focused on topics that are (for the scientists) related to sustainable development: the economy, financial crisis and environmental issues, but are not necessarily the focus of their scientific work – e.g. one who writes about the university and ethics wrote two articles in the business supplement applying his thinking to economic issues – the values crisis and ethics in business (among other issues). With many writing in relation to the financial crisis, some issues came up more than in their scientific articles – questions of equity, of ethics in businesses, and a more explicit critique of the current system – neoliberal, unbalanced, polluting, etc. Comparisons (of tone) are difficult because of the smaller number of articles in the press and the diversity of scientific articles in the case of some. For example, one published only a few scientific articles that were more critical and explicit and dealt with the current capitalist system, the rest delved more into measurements of pollution etc., and the former represents almost all of his press articles. This then can then be seen as a difference born out of topicality or related to news values rather than a question of priority.

One important difference between the scientific and media texts can be discerned and also hold for the in-depth interviews: they are more explicitly critical (in tone and content) of the current state of affairs and the question of equity is referenced relatively more. They are also more explicitly critical of the current form of neoliberal capitalism and system of production and advocate its transformation to zero-growth models as well as forms of ecological socialism:

- *Capitalism can persist only by transforming into a new capitalism. That is already something, but it does not represent an exit from the crisis, because it is mainly about changing the form, not the content. Its essence is getting blurred and gives us false hope. (12.M.4.)*[lxxiv]

- *Is it even possible to actualize sustainable development within the framework of the production mode of capitalism, which historically has never been self-constrained or even ethical ('just'), because it counters the nature of its production mode. (40.M.20)*[lxxv]

- *It is a fact that the current crisis of capitalism is not a crisis of its management, but a crisis of the system itself, the crisis is structural. (40.M.17)*[lxxvi]

This explicitness veers into a more "catastrophical" discourse (what others accuse the media of) only in some instances in the writing of one of them. Although, this goes together with his inclination to be a "provocateur":

- *Humanity is acting as someone who fell off a skyscraper and is at the first floor still alive and satisfied. (38.M.9.)*[lxxvii]

- *Will we stop cutting the green branch on which and from which we are living, and therefore change the habits of the last few centuries, or we will ourselves cause humankind to die out. (38.M.12.)*[lxxviii]

- *They are rearranging chairs on the deck of the Titanic, which is approaching an iceberg in the fog, instead of significantly changing course. (38.M.12.)*[lxxix]

Besides the critique of the current situation the scientists present visions and means to change our situation – from techniques like for example ecoremediation, to value transformations of businesses, citizens and humanity. The most holistic is presented in a long co-authored article, published in three pieces that presents on the one hand a critique and a vision for the future and on the other hand is published with the authors' intention to "initiate public expert thinking about what we have to do" (40.M.15., 16., 23.). They propose the redefinition of the division between public and private, collective and individual and propose policies of redistribution and solidarity.

While some see the current financial crisis as a detriment to sustainable development, especially in relation to environmental issues (similar to my interviews); e.g.: "In the crisis people are more focused on solving their existential problems and

the survival possibilities of their children" (19.M.4.); others decouple economic growth and environmental protection and other questions of values:

- *It is necessary to be very cautious about the claim of the ESI [Environmental Sustainability Index] that economic power is the critical factor in addressing environmental challenges. One could conclude that all states need to first become wealthy enough, that is dispose of enough economic power, to successfully cope with the ecological/environmental consequences of this power. (12.M.5.)*[lxxx]
- *The world is not facing just an economic crisis, but a cultural and religious crisis, a crisis of trust and values. […] The economic crisis is the most transparent, because it is practically permanent. Occasional severe jams in the race to dominate are more noticeable because they touch on other areas of life. (13.M.3.)*[lxxxi]

As was shown, these social scientists clearly and more explicitly than in their scientific texts critique neoliberal capitalism and present general visions of how to go forward. Here it is possible to see, that at least for some of them, Revers' (2009) hypothesis that a low rate of public engagement of social scientists is due to fear of political ascription does not hold. These findings also show that when it comes to the causes of unsustainable development the scientists present the issue of sustainable development as a political one. Yet, when writing about specific policy options, some offer individualized or market solutions in the form of lifestyle changes and use of technologies and thus interpellate their audience as users and consumers.

7.3.2 Public participation in media discourse – inclusion and silence

Due to the centrality of the question of the relationship between science and the public it is pertinent to also focus on how the public is referred to in the media texts as well as what role they are given in relation to sustainable development. For most, the media texts do not represent a change in position – either in content or in terms of

focus; which also means that the public and its participation is not discussed extensively or even a lot. Here I will therefore present only two – one whose stands out from the rest in this media sample because of his mentions and discussions of the public and one who is quite silent in his scientific texts and not so in his media texts.

While criticizing the empty promises made in the election programs of political parties in response to "the loud environmental critical public", where in the former sustainable development "does not necessarily mean the same as nongovernmental environmental organizations mean under this term" (8.M.2.), one of the scientists calls for the democratization of democracy (8.M.4). On the one hand, citizens are not allowed to participate in shaping policies and strategies, and on the other, they feel, as individuals, powerless (ibid.). In this media interview he sees art as the best way of raising awareness and bringing people together while not intimidating them through the use of "the scientific form". He said that the issue is not whether citizens trust scientists, activists or politicians, but the very much needed (re-)thinking of our vision, or imaginary, about the good life:

> *It is also necessary to 'build' on the level of society some kind of imaginary, a vision about what for us still is quality of life and what isn't anymore, within which we can judge what is still acceptable and what isn't. This imaginary has not been built. We don't talk about this. (8.M.4.)*[lxxxii]

The second case is the most prolific scientist in the sample, whom I also pointed out in a section above for his silence on the role of the public in his scientific texts. In his media texts the public does not feature to a large extent, but where it does its role is narrowed. For the general public the role designated is mainly in voting and implementation, i.e. changes in lifestyle to achieve sustainability.

In his media texts he does mention active participation, e.g. advocating "indirect democracy, but [with] broad implementation of means of direct democracy" (40.M.17), but his writings indicate that he is writing about "organized civil society", (environmental) nongovernmental organizations, movements and not about other, "ordinary" citizens. To some extent he seems to give up on the general public, which continues to support the old patterns of the neoliberal development paradigm of

quantitative economic growth and the “slim” state (40.M.21.), not despite but because of the impacts of the financial crisis and their fear of an uncertain future. The issue therefore for him is in the level of awareness and the value system:

> *I see the biggest issue in the first substantial field, in the crisis of values. What is important for our life, how to organize political, economic, social life in Slovenia practically without a national consensus on our basic values […]. If those are consumerism, egoistic, competitive values not based on solidarity […] then the story is already over. I am certain that through a tolerant dialogue we could reach a* national consensus *[…]. And now is the right moment for* civil society *to articulate its thinking, when it is not so encumbered by the four-year election cycle." (40.M.27) [emphasis added]*[lxxxiii]

In this interview as well as in a few other articles the role of the public is emphasized in the context of reaching a national consensus. Yet this is not seen in the context of participating in decision-making or contributing to the debate in an intrinsic sense, but in an instrumental sense, for implementation. To reach the goal of sustainable development depoliticized “social capital” is needed, i.e. “cooperation, solidarity, belonging” in order to achieve “broad social consensus and willingness of citizens for greater, but civilizationally unavoidable changes” (40.M.21.).

The exclusion of the “unorganized” members of society and the avoidance of conflict can also be seen in his worries about “solving” problems in the streets with “granite cubes instead of with parliamentary, social dialogue” (40.M.22.):

> *If social and regional differences in Slovenia will continue to grow like this, we will come to solving the problems of the crisis in the streets. This is the prospect we are facing if we do not set out in the direction of greater social justice, because the differences are already too big. The patience of the people will run out sooner or later. (40.M.25.)*[lxxxiv]

Despite expressing a level of understanding for protests, he sees them also as a “defeat of democracy” (40.M.27.), as a rejection of “more tolerant, egalitarian and solidary” dialogue (40.M.23). To be fair, these texts and interviews were done and published before the public protests in the winter of 2012 and spring of 2013 – in the

interview he expressed that young generations are not protesting enough and that protests for social equality are targeting only individuals, the excesses and not the underlying problems of the system.

As the findings in the last subchapter have shown, the discourse on sustainable development in the media texts of the Slovenian social scientists is geared more towards the transformation of the current political and economic system. They thus position it as a political issue, yet their writing on public participation or the lack thereof, and some of the possible (especially technological or market) solutions indicate the exclusion of the public from the decision-making process.

8 CONCLUSIONS

The role of social scientists in the public sphere has not received much attention in theories of the public sphere. Despite the focus on inequalities in power and access in public debates, there has been a shortage of reflection and critique on this matter beyond the issue of bracketing the status of experts. In my doctoral thesis I explored the possibilities and limitations for the public engagement of social scientists as well as their scientific culture in order to ascertain whether and how they contribute actors and issues to the public sphere and whether they contribute to the vibrancy of it.

The normative position in this thesis is based on the (rare) theories of the public sphere that among other factors include the social sciences: John Dewey, Leon Mayhew and (to some extent) Jürgen Habermas. For them normative theories of democracy represent the basis for their analysis of the state of society and its critique and they thus argued for communicative action of the public as the basis of the concept of democracy and the source of legitimacy for political decisions. They delved into the shortcomings of the public sphere and actors within it at different historical moments, yet came to the same conclusions – that the conditions and circumstances in which publics can become autonomous and endeavor to guide the process of political decision-making are severely lacking. Seeing public debate as the basis for building a critical public, in contrast to the other two theorists I review in this thesis, Walter Lippmann and John B. Thompson, raises the question of what the role of social scientists is and should be in this regard.

Habermas (1970), following Dewey, rejects the technocratic and decisionistic models of understanding the relationship between decision-makers, scientists and the public, which rest on a false premise of the division between facts and values, and advocated the pragmatistic model. This model bases the ordering of society on critical, reciprocal interaction between decision-makers and scientists, which must be “rooted in social interests and in the value-orientations of a given social life-world” that determine the practical needs in a concrete situation (ibid., 68; Bohman 1999b).

This model, though, is counterfactual – the relationship between scientists and the public is limited on the one hand by the structural transformation of the public sphere, as discussed by these authors. The independent formation and functioning of the public sphere is inhibited by administrative and business logic, which has confined the space for deliberation in the public sphere to representations in the mass media. In this, mediatized public sphere the public use of reason, which is constitutive for the public, is reduced to a one-way flow of information. Public communication thus loses its political function in steering the decision-making process (McLuskie 2003, 31) and does not provide a basis for public life, as the commodification and professionalization of communication inhibits the construction of the *"*politically socializing *communicative context"* in which the public sphere is based (Habermas 1998b**,** 159).

On the other hand, the relationship is limited by the expanding gap between scientific and public knowledge, which in the 20th and 21st century represents an essential element of the modern understanding of science. The gap between them is not new *per se*, but it did not always automatically entail "a disqualification of the publics' knowledge" (Bensaude-Vincent 2001, 101). The current discourse on science and in science clearly distinguishes public and scientific knowledge and in essence denies the public's capacity to articulate independent concerns and meanings "which cannot be domesticated and controlled by scientific forms of representation" (Wynne 2008, 30.,n.5). By bestowing science with the monopoly on truth, it also denies the public their possession of knowledge based on their own visions and priorities that are different from those based on science (Wynne 2007, 101).

On the whole, contemporary democracies mostly resemble the decisionistic model veering towards the technocratic one, as "politics becomes increasingly driven by discourses of technocratic and economic expertise" (Dahlgren 2009, 23). With regards to the two limitations to the pragmatistic model and the role of social sciences in overcoming them, two issues need to be raised: whether or not social scientists are sequestered from the public and whether their public engagement is possibly contributing or acting against the depoliticization of the public.

Apropos, the role of the social sciences does not lie only in contributing actors and issues to the public sphere, that is, the publicist orientation of actors in the public sphere, but in the critical exposition of social phenomena, processes and institutions, and the creation of new conditions and spaces for articulation and deliberation. This second "self-referential character of practices of communication" is crucial as it provides the basis for a vibrant public sphere, one that has the capabilities to perceive, identify and problematize latent problems and within which publics are able to recognize and actualize themselves (Habermas 1998a, 358, 379). Scientists have greater access to information and have greater power due to the division of labor within society and, as Dewey (1920) pointed out,

> *their specialization can be trusted only when such persons are in unobstructed co-operation with other social occupations, sensitive to others' problems and transmitting results to them for wider application in action. (147)*

However, this self-referential orientation counterfactually requires publicity grounded in public debate; its approximation, in the context of limited resources and a division of labor among scientists, could be achieved through a certain sensitivity to public values, interests and problems as well as reflexivity on the part of scientists about their knowledge, power and status.

In order to ascertain the role of Slovenian social scientists in the public sphere the focus of my research was on the actual practices and culture(s) of a sample of these scientists as well as some of the contexts of their work. Two aspects that impact their public engagement are the possibilities and limitations presented to their work by the mass media and science policy.

The mass media represent a great barrier for the public engagement of social scientists, most often, in order to be included, scientists themselves need to engage. However, the extent to which social scientists actually take on the possibilities offered by different media depend also on the perception of the relationship between science and the media and the attitude within scientific culture towards appearing in the media. Despite seeing the media as an important factor in informing the public, the

scientists' perception of the media is ambivalent – critical of media reporting in general and satisfied with their own experiences. Most did not have negative experiences with the media, but despite that a certain inertia is discernible.

This lack of interest extends to most of the scientists; one small group stands out due to their perception of a negative attitude towards their more transformative conceptualization of sustainable development. Despite their perception of a negative attitude towards transformative conceptualizations, three scientists represent the majority of the media text sample. This does not indicate a higher interest of the media for these kinds of conceptualizations generally (Vobič et al 2014, forthcoming), their presence in the media reflects their relatively greater motivation to engage with journalists, write their own articles as well as engage outside of their work.

In contrast to most previous research on the public engagement of scientists, this thesis also delves into less visible forms of engagement. The motivations for both more or less visible engagements are not based on instrumental reasons, but rather on their personal inclinations and interests and also relates to their understanding of the role of science and of scientists in society. As with the engagement with the media, these scientists do not look unfavorably upon engagement in general. On a personal level they support or even encourage it; the general attitude in the scientific community is not perceived as negative, more as indifferent.

One aspect of the contemporary public sphere was excluded in this thesis, that is, the engagement of social scientists on the internet. The engagement of scientists on the internet, despite its potential, has not been extensive and can be seen in the following ways. On the one hand, they engage, publish and form smaller (scientific) publics online that are to some degree exclusive and thus do not differ to a great extent from scientific or expert publishing. Where the publics are not as exclusive, their engagement resembles the less visible forms of engagement offline. On the other hand, those rare scientists with a greater online presence tend to be the "visible" scientists, who are present across multiple media platforms. If seen from the perspective of boundary work and the findings of this thesis, it is questionable whether scientists will partake to a greater extent in the future. While their visibility may be

enhanced, the inclusivity of the internet and the absence of gatekeepers in comparison to traditional media mean that they are not so distinguishable from others (Dahlgren 2013). Also the deficit understanding of the public of many of them detracts from them tapping the interactive potential of the internet. The engagement of social scientists on the internet also did not factor in my empirical research, because none of those in the sample were engaged online (as scientists).

In contrast to the media, science policy represents a more concrete limitation to their public engagement – more explicitly the time dilemmas that result from the scientific policies regarding advancement which are dominated by quantification in the evaluation of goals and achievements. On the one hand, the focus on publishing, impact factors, as well as other work requirements means that time and financial means are very much limited; on the other, the evaluation of impact does not take into account the impact on publics. On the whole, these systems of evaluation contribute to the negative perception that engagement is not valued; however, some doubted a different system would stimulate more scientists to do so. Science policy imposes certain requirements on the work of social scientists, which not only represent their obligations, but also direct resources to preferred practices and frame the role of science in a certain way. The internalization of these rules can be seen in their understanding of scientific quality – despite their qualms with the evaluation system, some of them often referred to these same criteria – i.e. publication in international, high-impact, peer-reviewed journals – as indicators of research quality.

From my research on this group of scientists it can be discerned that, most of the scientists were engaged in some way or another, the extent of which is hard to determine, especially in the less visible forms. The limitations of scientific policy and media practices are not insurmountable, but are also not stimulative. The dependency on the evaluation system, the disinterest of the media and the lack of encouragement within the scientific community result in a certain level of inertia regarding their engagement.

With the rise of buzzwords such as participatory, civic, public and democratic science, which indicate the rise of a participatory paradigm in science policy and within scientific discourse, the key question is not only whether social scientists are indeed engaging in the public sphere but also what notion of *public* it involves. While the nature of their engagement is to some extent shaped by external factors, it is determined by the scientific culture that informs their work. The way in which they understand the relationship between scientific and public knowledge represents a form of boundary work, which designates a certain role to science and a certain role to the public as well as regulates the interaction between these two social spheres.

Through the analysis of their scientific discourse three ways of understanding this relationship were discerned. The *deficit model* is based on a demarcation between scientific and public knowledge and sees the communication of science as a one-way linear process aimed at the public as a passive mass of consumers of scientific knowledge. The role of the public is thus seen in an instrumental manner, in order to gain support for long-term changes in behavior. The demarcation positions science as authoritative and superior because of its "specific form of rationality" (Felt 2003, 16) and places the responsibility for the bad relationship between science and the public and consequently for the unproductiveness of debates on public issues squarely on the public as passive, insufficiently literate and holding vested interests.

The second, *democratization* way of understanding sees the public as intrinsic to the political process. The public itself is seen to hold specific knowledge – local and tacit knowledge, different perspectives values and interests – and as such complementary to scientific knowledge. Yet, scientific knowledge takes precedence by providing the expertise needed and thereby inadvertently framing the issues. More significantly, the discourse of these Slovenian social scientists echoes the calls for the democratization of science that appeal for public participation (only) in cases of scientific uncertainty or in the case of complex social problems, which explicitly include issues of social values. Thus public knowledge is important for decision-making, but it is not seen as having much bearing on scientific knowledge itself.

The third, *critical* way of understanding this relationship does not uphold the boundary between scientific and public knowledge as universal vs. particular or local, objective vs. experiential or burdened by interests. The decision-making process thus needs the contribution of everyone, a critical approach, the bringing up and critical reflection of issues of (veiled) conflicts of interest, assumptions and values and finding (new) common solutions. Out of all the scientists those subscribing to this understanding are an outlier – while they acknowledge the division of labor they do not see scientific knowledge as a precursor to public debate – either as a precondition for participation or as the authority setting its agenda. This means that both scientific and public knowledge are not beyond contestation.

Whereas the attitudes towards their own public engagement were to a large extent homogeneous, these scientists hold different views on the public and its role in political decision-making, which has implications for the nature of their engagement. In comparison to other studies of science communication that have found that the deficit model is dominant, here in the Slovenian social sciences it represents approximately half of the sample. In addition, my research found a greater presence of approaches based on an interpretive and critical paradigm. Yet, what remains dominant in the case of the Slovenian social scientists is the notion of demarcation between public and scientific knowledge.

The basis for these different understandings can be attributed to some of the factors presented in this thesis. Whether they stem from the different subcultures of particular fields or departments is not possible to generalize, especially because some of them represent, by their own account, the marginalized research within their field. In more general terms the differences are related to the role they advocate for scientists in sustainable development. Those that draw a stricter boundary between them, as a boundary between “objective” knowledge and (individual) interests and values and therefore posit the problem of the public as a question of knowledge, or exclude them altogether, see the role of science as providing instrumental knowledge. Those that see the question of values as intrinsic to the resolution of public problems, irrespective of the boundaries they draw, tend to see the role of science as one of providing reflexive knowledge.

In this sense their understanding of this relationship can be to some extent related to the question of problem ownership and thus to their respective fields, yet it does not map out so neatly. For example, the economists, who represent the *status quo* conceptualization, envision their role as providing data to decision-makers and write about the public more in passing, mostly as users of technologies and services. Those geographers, who conceptualize sustainable development as an issue of *economic reform* and protecting the environment and see their role as providing instrumental knowledge, see the uneducated public as somewhat of a barrier to their work. The focus on the values of the public is typical for those researching pedagogics and didactics, but their understanding of the distinction between scientific and public knowledge is related to their respective fields. Those focusing on the pedagogics of geography, as well as belonging to departments of geography, draw a boundary between them, whereas those who do not, represent a more critical approach, interrogating the values of both sides. The remaining representatives of what is most commonly understood under the heading of "the social sciences", see the inclusion of the public as intrinsic to the democratic process and their own role as critical social scientists, but draw a distinction not in relation to their own knowledge but "expert" knowledge. They see sustainable development as a complex social problem, where the question of values needs to be tackled, yet give precedence to the expertise of those providing instrumental knowledge.

The different forms of boundary work can to some extent be seen in what is considered as the proper way of engaging. A certain level of homogeneity can be discerned among them in that they do not see public engagement in itself as conflicting with scientific authority or professionalism, yet posit knowledgeability and scientific authority as a condition of worthy engagement. The main difference, though, lies in the nature of communication – those who draw a distinction between scientific and public knowledge tend to see science communication as a form of simplification and as a linear, one-way model of communication.

As was ascertained, the Slovenian social scientists, in contrast to recent studies in Britain (British Royal Society 2006) or the European Union (European Commission 2007), are not motivated to publicly engage for instrumental reasons (for funding or recruitment) but are driven by personal reasons and the idea of the mission of science. In both cases the main motivating feature is social relevance, which for some is seen as inherent to their work. This can be seen as encouraging, if considered in the context of the division of labor. However, considering their understanding of the role of science and the public – their boundary work – it can be discerned that, for the majority of them, the notion of social relevance does not follow from the formulations of social problems in the public itself, but is designated autonomously within the scientific community. This can also be seen in the notion of the public good within their understanding of sustainable development, be it sustained economic growth, conservational environmental protection or post-materialistic values. However, if scientists wish to contribute to the public sphere, they must approach relevance differently, not merely as an indicator of autonomous activity. By not incorporating or, for some not even acknowledging, the public's understandings of public problems into their work, their engagement can serve to constrict public debate despite their best intentions.

The scientists' contributions cannot be definitively seen as positive or negative, even in the case of strict boundaries, because their reception in the public is not bound to their intentions. Moreover, whether the public deems science to be credible, authoritative or salient cannot be surmised from the analysis of these texts or from their interviews, because the public understands these attributes of science differently (Cash et al. 2002, 1). Yet, if the findings are judged against the normative position on the role of social scientists in the public sphere, the boundary work enacted by these scientists indicates that their engagement can be problematic, that is, their engagement could impede the (re)vitalization of the public sphere.

On the one hand, the scientists' engagement can be ineffective, if they do not engender trust, which in the public's eye does not stem from mere authority, symbolized by academic titles and achievements, or based on mechanical objectivity. On the other hand, their engagement can be counterproductive. While they contribute

their knowledge, they constrain the agenda and limit or even work against the construction of a common understanding of a certain problem. Through their boundary work they are *de facto* denying the legitimacy and the ability of the public to collectively express independent meanings and problems (Wynne 2008, Weingarten et al. 2000), and thus failing to interpellate the public.

More specifically, in the case of sustainable development, some of the Slovenian social scientists contribute to the, otherwise prevalent, depoliticized discourse on sustainable development, which sees the role of citizens in an individualized and depoliticized way – only or primarily as consumers. In addition, even those who decry the neoliberal model of sustained, limitless growth, by focusing on technological and market solutions indicate the exclusion of the public from the decision-making process.

The importance of (the scientists' understanding of) societal relevance coupled with the domination of demarcation in the views of social scientists also does not bode well in the context of the rise of the participatory paradigm. In the past decade, especially with the rise of the concept of "the knowledge-based society", the necessity to engage with wider society has become an important topic of science policy at the European and national level as well as on the level of individual universities. In this time the attitude towards (media) engagement (in Europe and the United States) has shifted from one where engagement was seen as having a negative effect on one's standing and credibility within the scientific community (Cooper 1994; Haslam and Bryman 1994b) to one where scientists were much more inclined to a "continuing and in-depth relationship with the media" (European Commission 2007, 9).

While the shift in attitude could be seen as a result of changes in science policy, the instrumental reasons for public engagement, as found in the report of the European Commission (2007), indicate that issues of funding were a big factor. The inertia ascertained in the case of Slovenian social scientists (in contrast to Europe as a whole) as well as their more personal motivations for public engagement could therefore stem from the lack of imperative to gain public support in order to gain or retain funding. In this light, the inclusion of public engagement in research project

requirements (especially those funded by the EC) as well as growing austerity in funding of higher education and research could lead to a rise in these practices, yet for the wrong reasons.

As has been shown in this thesis, the focus of research only on practices, their different forms and the scientists' motivations or intentions and not on the underlying assumptions of the scientists is not sufficient for understanding the role of scientists in the public sphere and also could paint a rosier picture. An example of this can be seen in the literature recounting and analyzing the development of different approaches to the relationship between science and the public. Although it deals with these underlying issues and most authors point out the (lingering) dominance of the deficit model, they nevertheless frame these approaches as developments: as a progression towards greater engagement and a rise in participatory practices. This obscures the factors underlying these different understandings and thus the dominance of the deficit model.

The issue of the problematic engagement of scientists has generally not been dealt with in the fields studying science and technology, except for the instances, e.g. of fraud or bad science; here inevitably I am painting with a broader brush. This is due to the fact that they eschew normative positions and judgments (Fuller 2000), which also means that some in these fields withhold the boundary themselves and research science communication through this prism. Consequently, for some even the basic notion that the participation of citizens in democracies is worthy, if not beneficial, does not hold when dealing with public issues. Here it is important to note, that research in these fields mainly does not deal with public problems in general, but with the emphasis on the natural and technical sciences focuses on the issue of the "democratic governance of science and technology" (Chilvers 2010, 29). They are doubtful about the capacity of the public, as was the case for Lippmann, and thus without trying to understand the meanings, priorities and concerns, dismiss them out of hand. Without a normative position, the focus of research is also on a specific understanding of effectiveness. On the side of the scientists the emphasis is on the extent of *visible*

engagement, that produces *tangible* effects, and on the side of the citizens, their ability to participate, grasp more (scientific) knowledge, raise awareness and change attitudes towards science.

Similarly, the research into boundary work has focused more on the intentional strategies, the visible and explicit constructions of distinctions, and not so much on the routine practices of scientists that reflect the "historically resonant discourses" about science (Kinchy and Kleinman 2003, 871, 2, 881). By understanding boundary work as an inherent part of scientific culture which is enacted not just overtly and in response to controversial issues, but also in everyday practices allows us to analyze the discourse of scientists about public problems, the public, as well as their own work as a way of inscribing a certain relationship between scientific and public knowledge. The case of the Slovenian social scientists presented here, in view of the absence of instrumental reasons for their engagement, represents a form of boundary work that is not agonistic or intentional, but part of routine practice or its continuation, yet nevertheless has implications for their role in the public sphere.

One of the reasons for overlooking the boundary work in routine practices is the focus on (scientific) controversies, where the positions of scientists and the public (and politicians) clash. Here boundary work is seen as detached from routine practice and thus appears as resulting from outside factors – as a reaction to the lack of public support or outright rejection or, in the case of the concept of medialization, as an accommodation to the logic of the media system. Furthermore, it could be seen as a result of the focus of research on the natural and technical sciences, on the one hand as the "prototypes" of science and on the other hand due to the development of the more constructivist subfields as counterpoints to the positivism in natural and technical sciences. Due to their objects of research and subject matter, natural and technical scientists perform more explicit boundary work "only" in their public engagement.

As was established, research on the boundary work, or indeed of scientific culture and practices of the social sciences is lacking. In view of the different findings about the scientists' engagement in Slovenia and Europe, United Kingdom and the

United States it cannot be ascertained if some of the divergences found in their boundary work can be attributed to differences between natural and technical sciences and social sciences. Nonetheless, the findings of this thesis revealed two important differences. While demarcation is dominant in the case of these social scientists as well, more acknowledge that the division between facts and values does not hold, yet this does not necessarily mean they are more reflexive about it. The second, and perhaps most important difference is the presence of a critical view of the relationship between public and scientific knowledge, which indicates and calls for the relativization of the boundary. Even though these are mainly present only in discourse and not actualized, they should not be discounted. Discourse in itself is an enactment of boundary work and holds value even without (physical) actions of scientists.

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10 INDEX

APPENDIX A: RESEARCH POPULATION AND SAMPLING PROCEDURE

A.1 PROCESS OF DESIGNATING THE RESEARCH POPULATION

The research population in this thesis are social scientists, who research sustainable development[45]. Because there seem to be so many different definitions of what the social sciences indeed are and because social knowledge cannot be limited by the question of self-identification as social scientists, I follow the understanding of social knowledge written by Camic et al. (2011) and in the interest of clarity quote it at length:

> *By 'social knowledge' we mean, […]* descriptive information and analytical statements *about the actions, behaviors, subjective states, and capacities of human beings and/or about the properties and processes of the aggregate or collective units – the groups, networks, markets, organizations, and so on – where these human agents are situated. In some instances, social knowledge statements may contain significant 'nonsocial' referents (as e.g., in studies of the impact of climate changes on welfare of the population of a certain region), but these referents constitute only one component of those statements. […] we include two further elements as well. These are (1)* normative statements *that draw on descriptive information to recommend or condemn certain courses of human conduct, programs for collective action, and so on; and (2) the* technologies and tools *of knowledge making - that is , the epistemic principles, cognitive schemata, theoretical models, conceptual artifacts, technical instruments, methodological precedures, tacit understandings, and material devices by which descriptive and normative statements about the social world are produced, assessed, represented, communicated and preserved. (Camic et al. 2011, p. 3)*

[45] The designation of the population and sampling procedure will be presented in a quite detailed fashion in the service of research transparency, which is especially important in the case of qualitative research.

In the identification process there were two limitations. The first limitation relates to the designation of “scientist”. When defining my population in an empirical sense, I had to use the “SICRIS” codes (Slovenian Current Research Information System) as an indicator of whether an individual could be considered as a scientist or not. The SICRIS code is an identifying code, attributed to an individual when they get their first grant from the Slovenian Research Agency (ARRS) or when applied for by a research organization. It is not a perfect indicator, but the best approximation available for determining who could be considered a scientist.

The second limitation in determining my research population relates to the designation of “social scientist”. Attributing this label to an individual is less straightforward. Each scientist is attributed in the SICRIS database at least one code that denotes their field of study (similar to the OECD Frascati Field of Science and Technology Classification). These could be somewhat indiscriminate – they are designated when entering a department or new research group (although they can be changed later), another issue is the possibility of choosing different levels of classification, where sub-classifications would indicate the designation of social scientist (e.g. using the code for “Geography” and not the sub-code for “Social geography” versus “Physical geography”). Here I had to cast a wider net and included in my population all scientists who had at least one code which denominates what could be considered as social science. The final decision on whether a scientist would be included in the final sample rested on their work itself – can their writings and research be deemed as social science research.

A.2 SAMPLE OF SOCIAL SCIENTISTS RESEARCHING SUSTAINABLE DEVELOPMENT

The sample of scientists was then chosen in a reverse fashion – through the analysis of the scientific texts on sustainable development. The COBIB.SI (Union bibliographic/catalogue database), i.e. the joint catalogue of the majority of Slovenian

libraries, includes all scientific works of Slovenian scientists (and others)[46]. I pulled all references from this database that had the key word "sustainable development" (in Slovenian "trajnostni razvoj") and because of the different terminology usage in different faculties and departments in the Universities and changes in terminology over time, I included also the key word "sonaravni razvoj". From there on I started a process of elimination also with the help of two other databases – the bibliography database of SICRIS[47] and the research project database of ARRS.

Based on the above limitations I came to an approximate population of Slovenian social scientists who have published something on sustainable development; the "approximate" refers to the possibility of overlooking individual scientists with a very low number of publications (only one or two) on this topic during the elimination stage.

In order to acquire significant research material per scientists I decided to focus on the most prolific scientists; although because of the size of the research space and the specificity of this topic the bar had to be set quite low. Scientists were selected according to the type and scale of writing. Priority was given to writings classified as 2.01 – scientific monographs; 1.01., 1.02. – original and review scientific articles and 1.16. – independent scientific chapters in edited volumes (see COBISS 2011 for type definitions). Attention was also given to research project reports in the ARRS database, so as not to exclude scientists who do research on the topic, but have otherwise not written extensively on this topic. These texts, in the end, were not included in the analysis as they are not published and distributed. Yet the main findings and discussions are usually published in article form or presented at conferences etc. This process yielded a preliminary sample of the top 40 most prolific Slovenian scientists on this topic. For these 40 scientists I proceeded to collect all scientific texts[48].

[46] The National and University Library of Slovenia is included in this union and all Slovenian publishers are obliged by law to submit copies for their archives. The full database is also the basis for habilitation evaluations, which means that scientists also need to submit data on their work in foreign publications for entry into the database.

[47] I need to acknowledge the great help of dr. Luka Kronegger with the SICRIS bibliography data and discussions on the limitations of the databases.

[48] The collection included the following types: 1.01, 1.02, 1.03 – scientific article, 1.04 – expert article, 1.06, 1.07, 1.08, 1.09 – published conference contribution, 1.16, 1.17 – independent chapter in a monograph, 2.01, 2.02 – scientific or expert monograph. Works with the classification 2.12, 2.13 and

The number of scientists included in the preliminary sample was intentionally inflated, since the selection parameters were not precise. The larger sample was whittled down after a preliminary analysis of some of their texts. While the reasons below were key, in order to achieve an as diverse set of discourses as possible, I constructed a sampling matrix, crosschecking field of study, general conception of sustainable development (after preliminary reading), any mention of the public and the authors media presence[49].

The following were eliminated from the preliminary sample: three authors were excluded because their writing could not be deemed as social science (e.g. from the field of physical geography). Eight authors were excluded because their texts only barely mentioned sustainable development or used the phrase only in the title or abstract. For certain in some cases this might be seen as a misuse of the term (e.g. using it only in the title). But, when writing in local/specialized scientific journals authors may take the definition of sustainable development for granted. In those cases, the authors' conceptualization could be discerned from context, i.e. from the way other topics are discussed and theorized in the text, yet to avoid the danger of reading too much into the material, they needed to be excluded.

Two additional authors were excluded to avoid redundancy – both them and their mentors and in many cases co-authors were already included in the sample. Due to time constraints the sample was narrowed down to 20 authors and seven additional authors were chosen, based on the lack of quantity as well as observing the distribution in the sampling matrix.

The following table represents the 20 chosen scientists according to their field classification (not subfield), the focus of their academic work (as reported in SICRIS), i.e. whether teaching or research represent the majority of their employment structure. In the thesis I have opted to not refer to them by name, because I feel it is not relevant for the analysis itself; it also is a way of ensuring a level of confidentiality for the information generated through the interviews with them.

2.14 – research reports and related works as well as conference contributions abroad were excluded due to low circulation in the Slovenian scientific community, as were the unavailable, yet entered works.

[49] The latter was important in order to achieve research symmetry, that is, equal treatment of those engaged in the (mediatized) public sphere and those who are not.

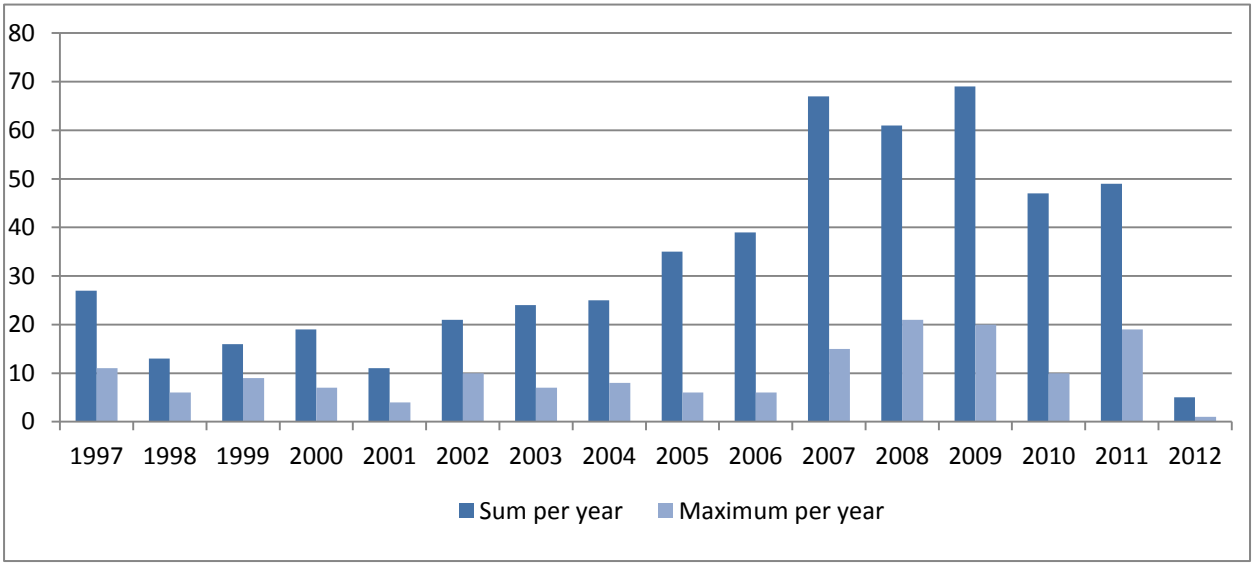
Table A.2.1: Sample of social scientists

Field of research	Educator	Researcher	Retired
6.12. Geography	Vintar Mally Katja	Urbanc Mimi	
	Špes Metka	Mrak Irena	
	Plut Dušan		
	Vovk Korže Ana		
	Kolnik Karmen		
	Resnik Planinc Tatjana		
5.02. Economics	Jurinčič Igor	Kovačič Art*	Mulej Matjaž
5.08. Urbanism		Praper Gulič Sergeja	Šašek Divjak Mojca
5.01. Pedagogics			Marentič Požarnik Barica
4.01. Forestry			Anko Boštjan
6.11. Theology		Mlinar Anton	
5.03. Sociology	Sedmak Suzana		Kirn Andrej
5.06. Political science	Lukšič Andrej		
1.08. Environmental protection		Kovačič Lukman Rebeka	

APPENDIX B: SAMPLE OF SCIENTIFIC TEXTS

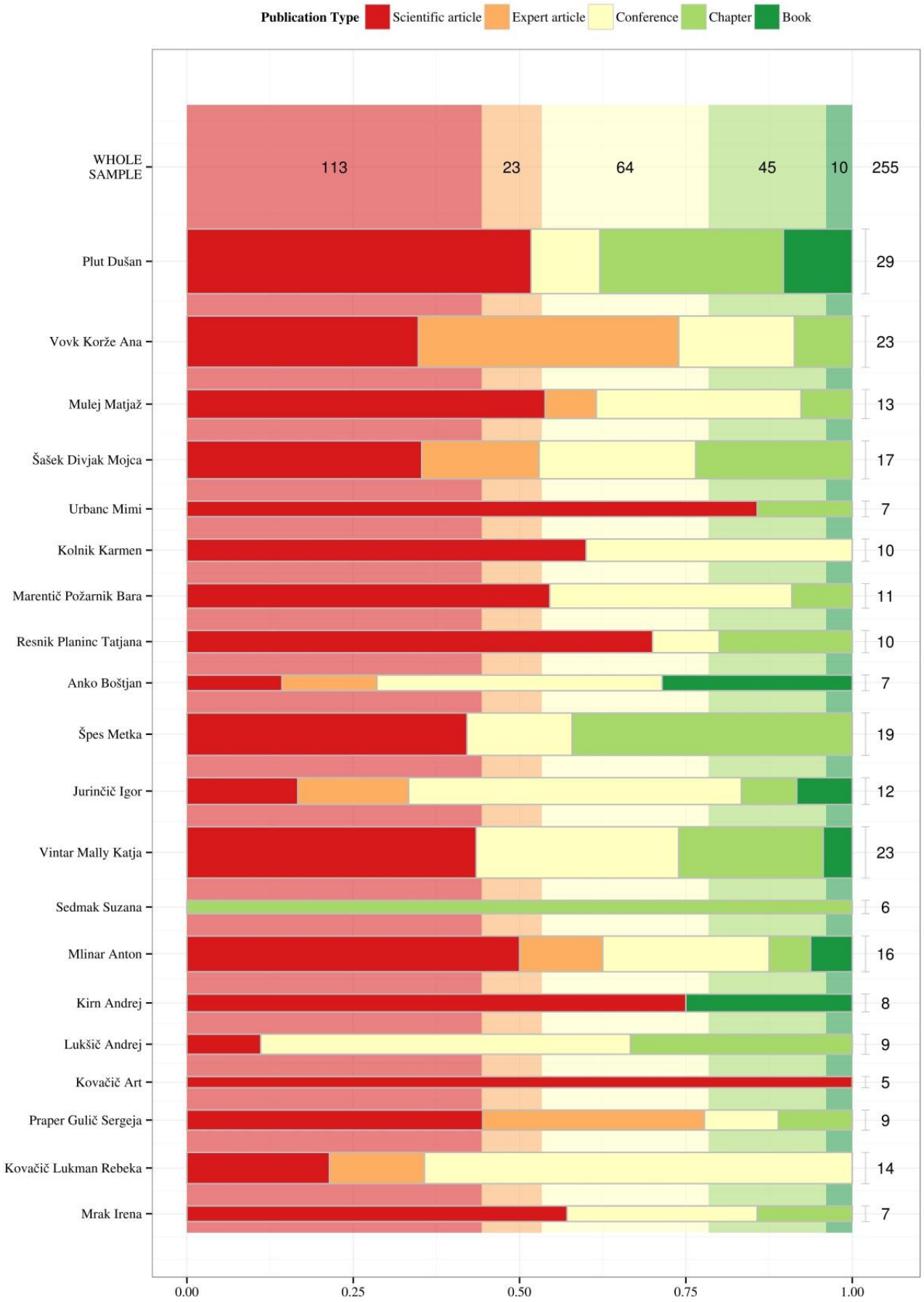
The following is a representation of the structure of the gathered scientific texts. All in all, the sample includes 255 texts. Because the goal was to reach saturation with each scientist, all of the texts were reviewed, but not all were analyzed in their entirety, either because of redundancy or because they were partially not related to sustainable development and/or represented social science (e.g. empirical measurements of pollution levels).

Figure B.1: Structure of sample according to year published



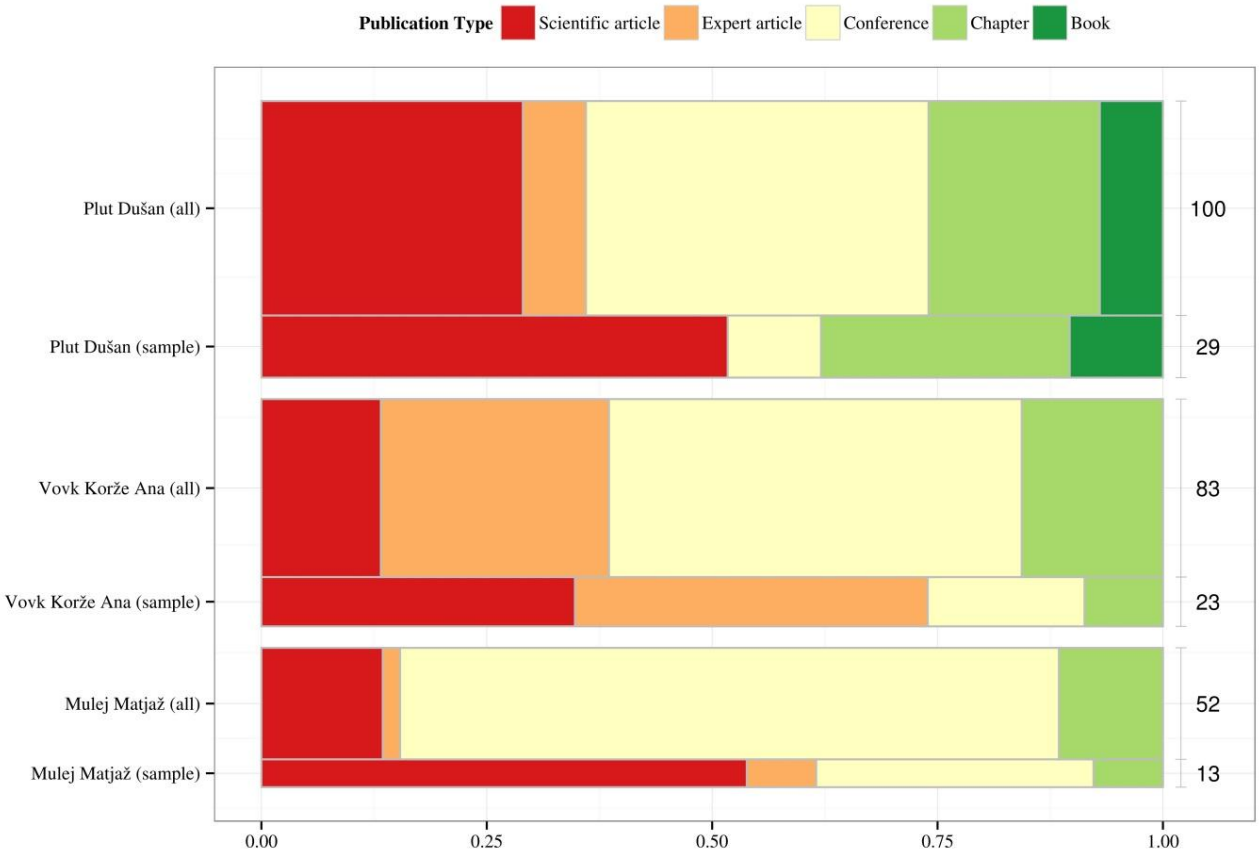
Differences relating to the year of publishing did not bear out in the analysis, the distribution on the level of the scientist is an indicator of length of time of focus on the topic of sustainable development – for some this is an enduring topic, some have entered this field in relation to research projects (or have increased writing in relation to it) or it reflects their entrance into research in the case of younger scientists. The lower frequencies in 2012 can reflect the time needed for entry into the COBIB.SI database, although it was re-checked in May 2013.

Figure B.2: Structure of the sample according to publication types



In the case of three authors their repertoire was too extensive for full analysis, so a sample needed to be made. With the end point of saturation in mind the sample was chosen at first more systematically in order to cover different types of texts and years of publication and later extended to give more attention to text with different topics or focus.

Figure B.3: Sample structure for Dušan Plut, Ana Vovk Korže and Matjaž Mulej



Publication types here are grouped in the following way: “scientific articles” (types 1.01, 1.02, 1.03), “expert articles” (1.04), “conferences” (1.06, 1.07, 1.08, 1.09), “chapters” (1.16, 1.17) and books (2.01, 2.02). The latter three include scientific as well as “expert” publications – in these categories this distinction did not bear out due to the immense variation within them. Although the types are (loosely) defined in the regulations, their designation varies according to field of research and depends on the discretion of the author, publisher and bibliographer.

Although some of the chosen scientists have written scientific or expert books that were captured in the sample, they have not been analyzed in the following chapters separately for a few reasons. Most of them do not focus specifically on sustainable development and if a topic was not explicitly dealt with in the context of sustainable development it could not be included. In those books the related chapters or sections were selected and analyzed. Two of the books turned out to be edited compilations of multiple articles previously published in scientific and other journals, and therefore did not warrant "special treatment". Because only one book dealt with sustainable development in its entirety, it did not warrant a different approach.

APPENDIX C: SAMPLE OF MEDIA TEXTS

For the same 20 scientists I also collected their contributions in the print media, which included mentions, individual quotes as well as full interviews and authored texts. All in all, the sample includes 151 media texts. As in the sample of scientific texts the same three scientists are the most prolific also in the media[50]. The sample was gathered in August 2012 with an additional check in May 2013.

I focused only on the four newspapers of record in Slovenia: Delo, Dnevnik, Primorske novice and Večer. Other media texts were not gathered due to issues of variable access, cost and mode of indexing. Due to these same issues the media sample was gathered through searching internet archives of the newspapers which opens up two issues that need to be brought up. For one, this mode of collecting media texts makes it hard or even impossible to differentiate between articles published in both print and the internet from those which were not printed. Furthermore, the differences in their archives, especially the parameters of search engines and pace of archive digitalization mean that the sample is most probably skewed and does not cover the same year span as the scientific texts. The process of digitalization in these media companies started after 2001: Delo started in 2001, Dnevnik in 1998, Primorske novice in 2004 and Večer digitalized everything published after 1945. There is also no way to confirm whether I had had access to the full cache of texts (quite certain for Delo and Večer, which provide paid access to their archive), in comparison to scientific texts which are carefully compiled in the researchers' official SICRIS bibliography.

[50] In order to take this fact into consideration they are featured in the following figures.

Figure C.1: Structure of the sample according to year published

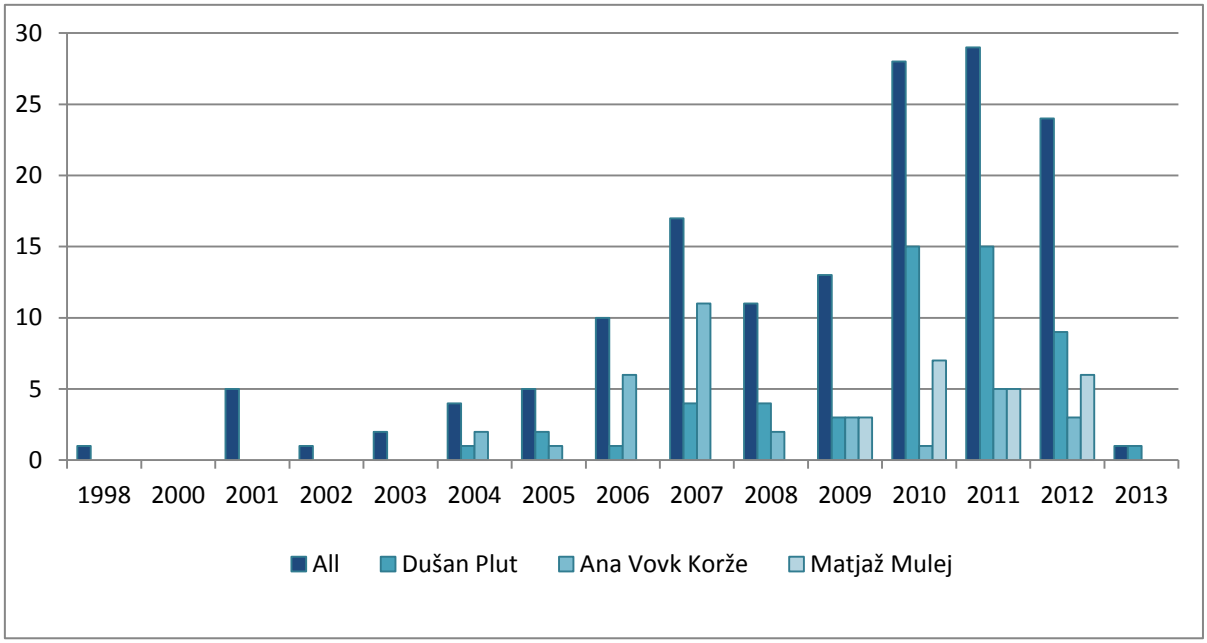
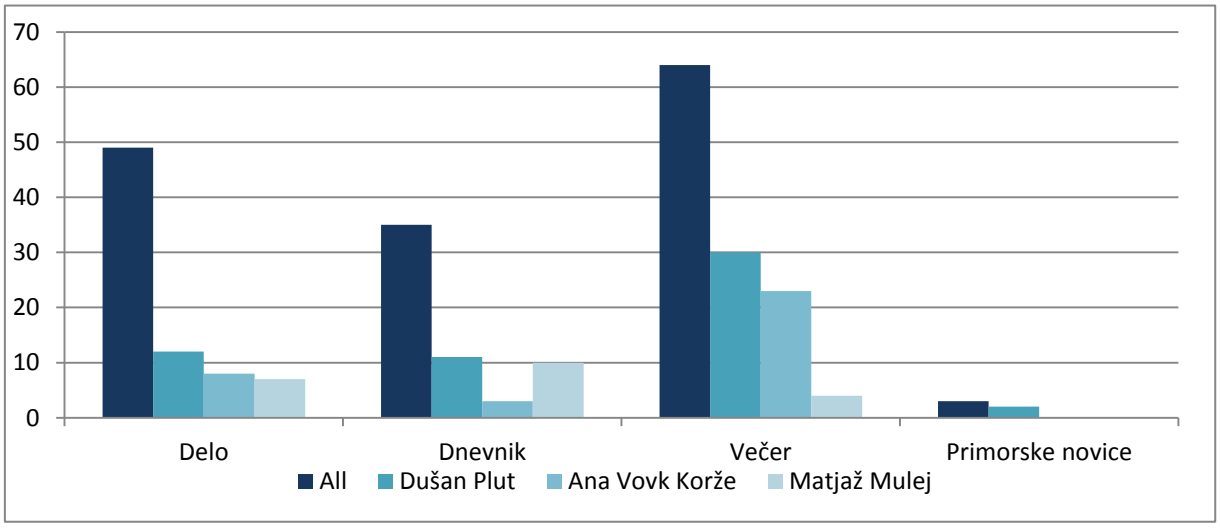


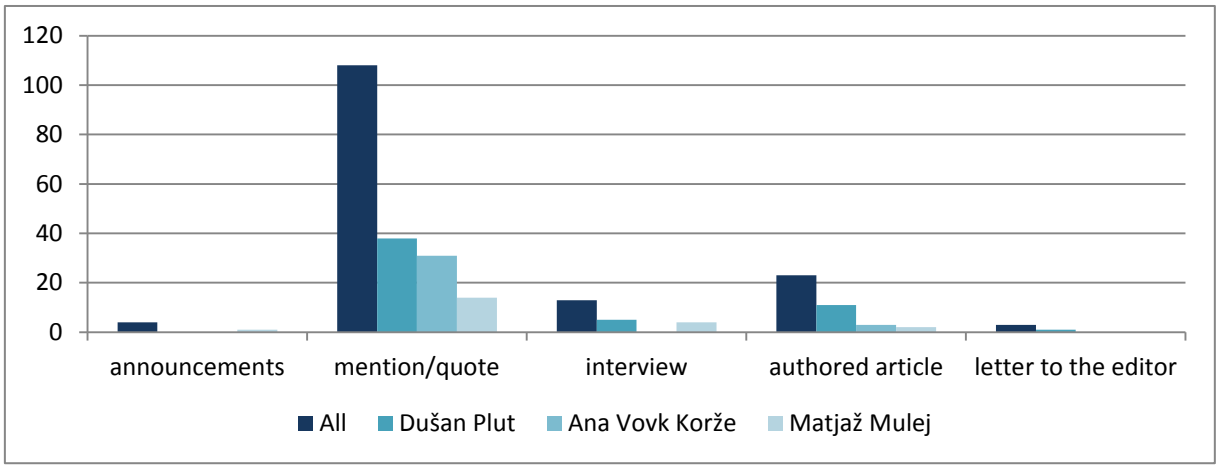
Figure C.2: Structure of the sample according to newspaper



None of the texts in the sample were published in the designated "science" section, while some were published within sections relating to their field of study (environment, business, architecture, education). Almost all of the authored texts as well as interviews were published in the Saturday supplements to the newspapers. One aspect of these supplements, that could explain also the positioning of authored

texts and interviews on these pages is the quite larger quantity of columns delegated to each article. Another could be the (uncompensated) outsourcing of this media space to outside authors.

Figure C.3: Structure of the sample according to authorship



Besides the featured three scientists a few more are more visible generally, i.e. are mentioned, quoted or write their own texts also on other topics in relation to their research (pedagogy, forestry, competitiveness, innovations, environmental issues) as well as other issues (mountaineering, state of affairs at universities, research funding scandal, political parties and social movements they are a part of). This is also to some extent reflected in Figure A.3.1. (especially in articles related to other topics around the anniversary of Slovenian independence and the 2011 elections).

APPENDIX D: IN-DEPTH INTERVIEW SAMPLE

In the time from the 13th of May to the 1st of June 2013 I interviewed 13 of the 20 scientists. The rest either responded negatively due to time constraints or medical issues, or were not responsive or reachable through email and their office telephones. The most prominent were primarily contacted by my supervisor in order to heighten the possibility of getting through. In order to control for differences in field of research and type of employment (I had positive responses of only two researchers not employed at one of the universities) I selected a few additional interviewees from the preliminary sample of 40 scientists. Three responded, and I proceeded to interview two of them, the third, due to her time constraints agreed to answer my queries in writing.

Table D.1.: Additional interviewees:

Field of research	Educator	Researcher	Retired
5.02. Economics		Slabe-Erker Renata	
6.12. Geography		Nared Janez	
5.08. Urbanism	Juvančič Matevž		

Even though the analysis of the data generated by the interviews is inherently not representative, the sample may be skewed in the following sense. Although in my requests for interviews I did not disclose the topic of their views and attitudes towards the public participation of scientists, it is possible that positive responses indicate a higher propensity towards engagement outside of their professional obligations.

The interviews were semi-structured and (all but one) conducted face-to-face, but due to the extent of topics that needed to be covered (and my relative inexperience) were perhaps more structured and did not allow for delving more deeply into each particular topic. The interviews were done with the help of similar topic guides, which were adapted to each scientist, particularly with regards to their scientific and media writing as well as other background information and information regarding their engagement in the public sphere.

APPENDIX E: TOPIC GUIDE [original]

Namen/cilj raziskave: Raziskovanje dela znanstvenikov na temo trajnostnega razvoja (doktorsko delo in projekt)

Soglasje s snemanjem in uporabo intervjuja, zaupnost (zaradi narave njihovega dela ni mogoče zagotoviti, da ne bodo prepoznani)

- pregled tem in trajanje intervjuja

Trajnostni razvoj

- **predstavitev njihovega dela na področju trajnostnega razvoja** (na kratko opis, koliko časa se s to temo že ukvarjajo, empirično in/ali teoretično)

- **definicija** (kako ta pojem razumejo, specifike ali poudarki znotraj njihovega raziskovalnega področja) (v primeru, da se ukvarja dalj časa, ali se je kaj spremenilo)

- **vloga znanosti pri doseganju TR** (kako vidijo vlogo/prispevek znanstvenega raziskovanja k doseganju tega cilja, svojega področja in tudi drugih področij)

Angažiranje v javni sferi – navezava s primerom intervjuvanca (članki v medijih, javna predavanja, televizijske oddaje, ali oblikovanje politik …)

– motivacija za angažiranje v javni sferi – Ali se jim zdi takšno delovanje pomembno in zakaj (prispevanje k javnemu znanju, vključevanje javnosti, področja nadaljnjega raziskovanja, vpliv na oblikovanje politik)

- Kaj še smatra kot javno angažiranje, ali je kaj drugega še delal/a, kako pogosto (informiranje, razumevanje, vključevanje javnosti, delo v medijih, v šolah)

(angažiranje kot znanstvenik ali kot član (zainteresirane) javnosti?)

- javnost – kdo je najpomembnejši **naslovnik** – mediji, šole in učitelji, splošna ali bolj specializirana (zainteresirana) javnost

- **ocena** komuniciranja z javnostjo (izkušnje, s kom se mu/ji je zdelo najlažje sodelovati, s kom najtežje, zakaj, različni forme

Vplivi, podpora ali omejitve, ovire: Kaj bi jih osebno bolj spodbudilo k angažiranju? in Kaj so razlogi, da se ni (bolj) angažiral? // Kaj meni, zakaj se sam in drugi ne angažirajo v tolikšni meri?

Znanstvena kultura:

- Kako meni, da vpliva takšno angažiranje na njihovo **vlogo**, delo (avtoriteto) kot znanstvenika (vpliv na status?)

- Kako meni, da na angažiranje gledajo njegovi/njeni **kolegi**? Ga/jo pri tem podpirajo ali ne, sodelujejo (interna hierarhija med in znotraj ved in vrednote; pritiski/percepcija kolegov, vodstev) – profesionalna stigma (oz. kako gleda na druge kolege)

Dejavniki zunaj:

(nekateri ne delajo na univerzi!) - vloga in poslanstvo univerze – deklarativno je odnos z javnostjo pomemben, kaj je njihovo mnenje o tem

  - predstavljanje znanstvenih dosežkov, približevanje znanosti javnosti,

  - večja legitimnost v očeh javnosti, relevantnost za družbo; odgovornost do javnosti, grajenje zaupanja

- **znanstvena politika**

  - kakšen menijo, da je vpliv znanstvene politike npr. sistema evalviranja znanstvenih dosežkov na raven angažiranja v/z javnostjo? (druge obveznosti, časovne omejitve, potek kariere) (habilitacije in/ali merila za financiranje projektov)

- na kakšen način menijo, da bi lahko tovrstno delovanje spodbudili? (financiranje, spodbude za popularizacijo, strokovno, poljudnoznanstveno pisanje, participativni projekti)

- odnos med mediji in znanostjo (navezava na njihovo medijsko prisotnost)

- Kakšne so njihove izkušnje pri sodelovanju z mediji?

- Kakšne so po njihovem mnenju prednosti in omejitve komuniciranja znanstvenega znanja v množičnih medijih? (doseg, popularizacija, pozornost// prostorske, časovne omejitve, posploševanje, manj nadzora nad vsebino)

- Ali v medijih izkazujejo zanimanje za njihove prispevke? Kakšne so ovire pri objavljanju? (samoiniciativno pošiljanje prispevkov, organiziranje dogodkov ali odziv na prošnje za sodelovanje npr. v intervjujih)

TOPIC GUIDE [translated]

Research objective: Research on the work of scientists on the topic of sustainable development (doctoral dissertation and research project)

Consent to recording and use of interview, confidentiality (due to the nature of their work anonymity cannot be ensured)

- overview of topics and duration of interview

Sustainable development

- **presentation of their work in the field of sustainable development** (brief description, how long engaged with this topic, empirically and/or theoretically)

- **definition** (how do they understand this concept, specifics or emphasis in their field) (if researching for long, any changes)

- **role of science to achieve SD** (the role/contribution of scientific research generally, their field, other fields)

Engagement in the public sphere – relate to the interviewee (media texts, public lectures, television programs, policy-making…)

– motivation for engagement – do they see it as important and why (contribution to public knowledge, participation of the public, areas of further research, impact on policy)

- What else do they consider as public engagement, what else have they done, how often (informing, understanding, inclusion of the public, work with the media, schools)

(engaged as a scientist or a member of the (interested) public?)

- the public – who is it most important to reach – the media, schools and teachers, general or more specialized (interested) public

- **evaluation** of communication with the public (experiences, with whom easiest to work with, whom the hardest, why, different forms)

Factors, support or limitations, restrictions: What would motivate them personally to engage? What are the reasons for not being (so) engaged) // Why do they think they and others are not as engaged?

Scientific culture:

- What is the impact of public engagement on their role, work (authority) as a scientist (impact on status?)

- How do their **peers** view engagement? Support or not, involved (internal hierarchy among and within fields, values, pressure/perception of peers, of management) – professional stigma (or how they view others)

Outside factors:

(some not employed at university!) – role and mission of the university – declaratively relationship with the public important, their opinion on this

- presentation of scientific developments, bringing science to the public

- greater legitimacy in the eyes of the public, social relevance, public accountability, building trust

- **science policy**

- what is the impact of science policy, e.g. system of evaluation of scientific achievements on level of public engagement? (other commitments, time constraints, career path) (habilitation and/or criteria for project funding)

- how could engagement be stimulated? (financing, incentives for popularization, expert, popular science writing, participatory projects)

- relationship between media and science (relate to their media presence)

- What are their experiences in working with the media?

- What are the opportunities and limitations of communicating scientific knowledge in the mass media? (reach, popularization, attention // space, time limitations, simplification, less control over content)

- Do the media show interest for their contributions? Any barriers to publishing? (self-initiative for sending texts, organization of events or in response to requests for participation e.g. in interviews)

APPENDIX F: RESEARCH METHOD

F.1 DISCOURSE ANALYSIS

For a comprehensive understanding of the role of the social sciences it was necessary to analyze the contributions of the Slovenian social scientists in the scientific and in the public sphere as well as the information generated through the interviews by using the method of discourse analysis.

The method of discourse analysis in social sciences denotes “a confusingly wide array of techniques and approaches" (Yearley 2005, 91). There is no standard way of doing discourse analysis and there are no concrete “rules” on how to do it. Here and otherwise I do not ascribe to a specific “school” of discourse analysis; rather I view it in a broader sense, as close readings of the texts. Discourse is “an ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena” (Hajer and Versteeg 2005, 175); therefore attention should be directed to the way key themes are framed by the selection of words and metaphors, the positioning of social actors and invoking particular meanings (Tonkiss 2004, 378).

Discourse analysis is thus concerned with the production of meaning through texts, with how discourse inscribes a specific way of understanding (Tonkiss 2004, 373). This method is therefore anti-essentialist and is appropriate for analyzing the differences in conceptualizations of sustainable development as well as analyzing the practices of boundary work. The key aspects of both were first designated on the basis of theory and then reviewed and added to in the process of analysis. Although they are to a large extent interrelated, the analysis of practices of boundary work is less grounded in the theory which specifies only the principles and intentions of these practices. After a preliminary reading of each of the types of texts separately (scientific, media, interviews), key themes were coded and sorted, with attention focused also on the silences or omissions in the scientists’ discourse.

Because the aim of this analysis was to achieve an in-depth understanding of the variety of conceptualizations and the practices of boundary work in the social sciences, the results cannot be generalized to other scientists, fields or forms of engagement, e.g. participation processes.

F.2 REFLECTION ON RELIABILITY

Due to the differences and changes in the institutionalization and specialization of the social sciences, political regulation and decision-making about science funding in different societies, scientific culture should be considered within a specific time-frame and national context. The same goes for the conceptualizations of sustainable development which are embedded also in specific social context.

Whereas the analyzed scientific texts were published over a span of over 15 years, the interviews were conducted in May and June 2013. The whirlwind of events in Slovenian society in the year prior to the interviews, especially the growing financial crisis, public spending cuts and large public protests in the winter of 2012 and spring of 2013, has had an impact on the approach to the analysis of the accrued data.

On the one hand, the public protests have brought into sharp relief the dissatisfaction, as well as anger, of the citizenry with their exclusion from political decision-making at different levels. Many initiatives rose up in this time, championing local, direct democracy and models of self-governance. Parts of the scientific community participated in these continuing actions in a more or less active role. On the other hand, the impact of public spending cuts has impacted the scientific community in different ways. The effects of the cuts in university (lump sum) funding and research funding can vary greatly, depending on the financial status of the particular faculty or institute, the structure of their work, i.e. ratio of teaching and researching etc.

How these circumstances may or may not have impacted the scientists is difficult to gauge and is unfortunately outside of the scope of this dissertation. Besides

these circumstances the triangulation of data is narrowed due to, on the one hand a difference in focus – the analysis of the texts dealt with their understanding of the role of the public in sustainable development and the interviews more on their perception of their own role in the public sphere (as well as of other scientists). On the other hand, these two forms of discourse were actualized in different contexts and with different constraints - the codes of scientific writing, especially depersonalization, in contrast to a dialogue about their personal views and attitudes.

Also triangulation could only be achieved in those cases, where the scientists responded and were willing to participate in the interviews. This also means that the interview sample could be skewed - those who responded could be more inclined to participate in other activities.

APPENDIX G: QUOTES IN SLOVENIAN FROM TEXTS AND INTERVIEW

[i] "živimo v dobi razvojev po ločenih delih, ko poskušajo vlade s čarovnijo lepljenja vedno novih pridevnikov na dogmo razvoja zamegliti pogled na negativne posledice razvojnega koncepta." (39.1., 12)

[ii] "Toda pojmovanji (šibka, močna) sodita v kontekst, v katerem je trajnost predmet s svojo specifično različnostjo, ne pa paradigma."(13.13., 3)

[iii] "Danes vemo, da je treba zavreči idejo o razvoju po delih, kjer se gospodarstvo razvija s svojimi cilji, sociala s svojimi in posledično okolje s svojimi. Dejanski napredek in blaginja sta mogoča le kot celovit proces." (39.17., 33)

[iv] "Gospodarstvo ne pomeni v življenju posameznika vse, ampak brez gospodarstva postane tisto vse nič. [...] Razvoj vključuje uporabo človeških, fizičnih, naravnih in finančnih virov na takšen način, da se učinkovito in perspektivno zadovolji povpraševanje na trgih ter druge človekove potrebe." (6.4., 99)

[v] "Cilj trajnostnega turizma je dolgoročno optimalno izkoristiti razpoložljive turistične resurse, vendar s čim manjšimi in še obvladljivimi negativnimi vplivi na naravno, socialno in ekonomsko okolje." (16.4., 14)

[vi] "Gospodarski razvoj tvori nepogrešljivo materialno podlago trajnostnega razvoja in je temelj človekove blaginje" (19.1., 53)

[vii] "[ne kot] **uporabnik**, v najslabšem primeru izkoriščevalec narave, bolj ali manj moder **upravljalec** narave in njenih virov, **občudovalec** 'neokrnjene' narave, [ampak kjer] se pojmuje kot **neločljivi del** narave in grajenega okolja" (27.17., 442)

[viii] "Ekološka kriza se ne more preprečiti, če se ne spremeni način produkcije, ki vse bivajoče vključno s človekom spreminja v uporabno surovino. Za človeštvo obstajata naslednje dve poti: a) nadaljevati z rastjo do ekosocialne katastrofe ali b) preiti ustvarjalno k nerastoči ekonomiji." (12.2., 1129)

[ix] "v praksi je ekonomski vidik šel zase in če je zgolj in edini cilj kapital. Kapital ne zanima ali mate vi za preživet, kapital zanima samo dobiček, njih ljudi ne zanimajo, okolje jih tud ne zanima."

[x] "Torej model zelenega gospodarstva predstavlja eno od različic šibke trajnosti, ki je zaradi nujnosti potrebe odprave svetovne revščine in splošnega dviga materialnega blagostanja revnih prebivalcev uporaben v trajnostnem prehodu v prvi polovici 21. stoletja." (40.8., 1148)

[xi] »Bogatenje sedanjih generacij je zaželeno, če izhaja iz krepitve virov blaginje in izboljševanja razvojnih dejavnikov, na primer iz investicij za infrastrukturo, tehnološki razvoj, človeške zmožnosti.« (39.22., 82)

[xii] "Ne bo zdaj gledal kvaliteto, če nima. Če imam jaz 2 € v denarnici, ne morem kupit za 4 €. Fertik, se konča vsaka zgodba o trajnostnem razvoju. To pa zato, ker v koreninah ni pošlihtano, da ma vsak za svoje življenje dostojno toliko sredstev.

[…]

Da se sploh o nivojih določenih ciljnih skupin ne pogovarjamo. Ki so pa tak nizko plačani, da jim je čist vseeno, tud če bi mogli žveplo zlivat po zemlji, pa ga bojo, sam da bojo preživeli, ne.«

[xiii] "to se pozna ne: "kaj nam boš zdej ti govoru o teh stvareh ne, mi mamo čist druge probleme ne". Mi mamo probleme z brezposelnostjo ne, z eksistenco ne, ne pa z tem za kolk zdej presegamo mi nosilne sposobnosti planeta."

[xiv] "Vsi ukrepi pa bodo omejeno uspešni, če ljudje ne bomo sprejeli odgovornosti za dobrobit drugih in za dobrobit planeta in njegovih ranljivih ekosistemov." (33.1., 85)

[xv] "Potrebno je ljudi z nenasilnimi sredstvi in z direktno akcijo (v obliki demonstracij, teatrskih protestov, civilne nepokorščine ipd) nenehno opozarjati na nesprejemljiva ravnanja in postopke." (8.12. 254)

[xvi] "Pri iskanju ustreznega kazalca za določeno tematiko se lahko v pomanjkanju ustreznih podatkov zatečemo k uporabi razpoložljivih podatkov. Rezultat je proučevanje merljivega, namesto tistega, kar je

dejansko pomembno. […]Poleg tega [nepopolnost in raznolikost mentalnih modelov] na razumevanje ter vrednotenje pojavov in procesov vplivajo tudi različni vrednostni sistemi raziskovalcev." (15.3., 48)

[xvii] "Temeljne naravoslovne znanosti so objektivne. Ponujajo nam opcije - npr. jedrsko orožje ali kloniranje. Ali se za to odločimo ali ne, jih pravzaprav niti ne zanima. […] Že prepadi med tehnološkimi in biološkimi znanostmi ter moralo in etiko neprijetno opozarjajo, da vsako znanje še ne zagotavlja trajnostnega obravnavanja okolja" (23.4., 10,11)

[xviii] "vsaka je seveda tako kot svoja ulica v mestu in tisto moraš zelo zelo poznat, vendar hudo je, če ne vidiš, kje v celem tistem se nahaja. Ona ni zato, da svojo disciplino kaj zanemariš, moraš iti čim bolj v globino, ampak moraš še se zavedati vseh teh drugih relacij z drugimi in seveda tudi vrednostmi".

[xix] "V teku desetletij predvsem kariernega izobraževanja so se zapostavljale ne le etične dileme širšega družbenega in eko-sistema, pač pa tudi bistvena povezanost med izobraževanjem in odgovornostjo." (13.2., 94)

[xx] "glede na prevladujoče gospodarske in raziskovalne politike bi morale s svojim znanjem tekmovati, kultura trajnosti pa jim sugerira, naj čim bolj učinkovito širijo in oblikujejo kritično javnost, sposobnost prilagajanja in odzivnost (*resilience*) ter opustijo tekmovalnost." (13.8., 1467)

[xxi] »Ja poglejte, zdej je pa tako, zdej je pa to tud različno odvisen tud od karakterja ne. Jest sem sam bolj kabinetni človek.«

[xxii] "pravzaprav nihče ne more pokrivat celotnega spektra. Ker zdej če ste vi zlo hud teoretik, ne, okay je neka možnost, da se boste angažirali tud nekje potem v praksi, ampak vsem to ne leži, ne. […] čeprav spet seveda ni to vsem blizu…"

[xxiii] »To mi je pa ubistvu čist fajn in se mi zdi, da, kaj jst vem, včasih mam, ne vedno, ampak včasih imam dobr občutek, da recimo res kej lahk premaknem… mogoče kšenga več prepričaš .«

[xxiv] »Samo, ne vem, jaz sem že od nekdaj, še predno sem se začela s samim raziskovanjem ukvarjat, sem že v bistvu bila vključena v društva, imeli smo svoje okoljsko društvo, v tem sem že od nekdaj ne. Ahm, motivacija, kaj za tem stoji je, v bistvu, ne vem, osebni vzgibi za boljši jutri.«

[…]

»družbena aktivnost pa se mi tudi zdi izjemnega pomena ne, če lahko kot posameznik prispevam k boljši družbi, bom pa tudi storila«

[xxv] "Ne vem, v bistvu tako doživljam to zelo … raziskovanje ni moje delo ne, ja način življenja. […] jaz zelo težko govorim pač… ljudje poklicne poti različno doživljamo ne. Se pravi, jaz jo doživljam kot način življenja ne, jaz nimam osemurnega delavnika, ker berem članke, znanstvene, karkoli tudi zvečer doma v postelji in potem se ti utrne kaka ideja …"

[xxvi] "mislim da če se z neko temo ukvarjaš, […] no jaz sem taka, da pravzaprav trajnostni razvoj ni bila samo ena tema, s katero sem se pač ukvarjala v službi, ampak je res neki, v kar sem verjela in me je zelo zanimalo. In sem to sledila in potem se mi zdi da je, potem ko dosežeš eno stopnjo znanja, da se pojavi potreba po tem, da to tudi deliš."

[xxvii] "vsaj meni osebno se mi zdi pa res tud to delovanje, širše ane, se prav izven svojega okvirja, raziskovalnega. Se prav, da res probaš to znanje k ga maš, da ga pač probaš, razširit na množice, al pa vsaj na širše skupine, no, tko."

[xxviii] "ko gledam tkole od kolegov, ampak to ni nobena sled v družbi. Večina člankov so neuporabni, včasih si že zelo vesel, ko kaki naslov vidiš, tak obetajoč, ampak potem, ko to prebereš, kdo bo to kupu, *a je pripravljen kdo tole znanost kupit*? […] se je samo razbohotilo pisanje člankov na nekih citatih, v bistvu to samo neke kompilacije iz ene v drugo, zlo moderno navajanje nekih citatov. Uzadi nimaš ti kaj prijet, ne. In če bi tu naredil neki premik, da piše članek iz prakse, potem bi se kaj poznalo. Tak mamo mi milijon zadetkov, je obupno veliko, če ste gledali, ne, ampak uporabnega nič kaj." [emphasis added]

[xxix] "Želimo bit koristni, želimo narediti nekaj kar je na koncu uporabno in kar ima nek nek vpliv, v bistvu ne želimo delat kar tako. Saj je fajn, po eni strani, meni je zelo všeč, to teoretično delo. In mi je žal, da

nimam več časa, super so ti modeli, pa razmišljanja pa razglabljanja. […] Ta teorija je fajn, absolutno, samo da potem vprašanje pa je, kakšen vpliv ima na konkretno. In tudi na koncu, če napišete en članek v angleščini, ki ga objavite v eni reviji, je vprašanje koliko ljudi po to videlo..."

[xxx] "Men se zdi, da ni vredu, če si ubistvu ti kot raziskovalec samo nekje zaprt, produciraš mogoče pet člankov na leto, objavljaš znanstvene monografije. Ta družbena relevantnost je nujna, če tega ni, je pomojem tud znanost *ubistvu sama seb namen*, ane."

[xxxi] "je verjetno tud odvisno kaj konkretno raziskuješ ne, s čim se ukvarjaš ne, ampak ravno tematika trajnostnega razvoja je tko prepletena z družbo, da čist nič ne koristi, da če mi pišemo še tko dobre znanstvene razprave, če te ne pridejo do ljudi."

[xxxii] "Korektiv za za znanstvenika. Super je delat na tem, mislim to neko raziskovanje, teorijo in tako naprej, […] mogoče enih stvari se sploh ne da drugač, ampak pogosto je to potem oddaljeno od življenja in v bistvu je predolga pot, da bi pride sploh do neke konkretne uporabe, čeprav tudi to ni edini namen, saj to je jasno, no. Ampak za mene je to sodelovanje z različnimi deležniki dejansko korektiv v tem smislu, da preverjam ideje in če pač hočem delovat za druge, ne zdej za svoje lastno veselje, potem želim pravzaprav ta odziv ne."

[xxxiii] "na nek način je to še bolj odgovorno, kaj boš reku, kokr pa, če napišeš, strokoven članek. Jest sem vedno reku, npr. napisati učbenik za srednje šole […] je seveda neprimerno bolj odgovorno in zahtevno mogoče kot pa napisat članek v strokovno revijo […] Sej jest ne rečem, da ne bo to prispevek k znanju, je lahko velikanski prispevek k znanju, ampak to je neka nova kvaliteta kako boš s tem znanjem vplival na množico ljudi […] In zdej, nekateri ta občutek odgovornosti imajo, drugi pa nimajo […] in ne vidijo tud v kakšno tveganje in odgovornost se podajajo in prevzemajo."

[xxxiv] "glejte dan ima pač 24 ur ne, če hočemo mi v znanosti obstat, moramo sledit tem predpisanim kriterijem, ki jih imamo ne in potem zmanjka včasih energije, volje, elana za delo naprej, za ta prenos v javnost."

[xxxv] "ampak ko opazujem kolege ne, ki so še vedno tam, gre pač da dosežejo… da postaneš pač izredni profesor tralala, potrebuješ tolko in tolko točk in tolko in tolko člankov, tolko tolko konferenc in pač vsi so ciljno naravnani, zaradi vsega tega."

[xxxvi]"Vsak dela po svojih zmožnostih ane, jst jih nč ne krivim če se drugač odločijo ne. To je pač osebna odločitev, čemu boš namenjal več časa. Tako kot pač v našem poklicu, […] ki smo večinoma pedagoški delavci, si stalno v dilemi, kaj bom danes delal. Se bom ukvarjal s študenti al grem pisat članek. Zdej pač eni se večinoma odločmo za to da bomo se pedagoško se bolj udejstvoval, drugi se odločjo za znanstveno pač, *za tekmo*, za mlade raziskovalce, za projekte in tko naprej." [emphasis added]

[xxxvii] "omejitve so tud na koncu časovno. Zdej če se ukvarjate z enim področjem je vprašanje, kolk maste možnosti da ste še na nekem drugem. Na primer, pri nas na inštitutu je mogoče ena prednost, al pa tud ne no, v tem, da smo ves čas na nek način povezani s prakso. Da ubistvu so naši projekti zlo aplikativni. Ampak po drugi strani pa, če maste take projekte vam ponavadi zmanjka časa za teoretično delo. Pa tud včasih celo za poglabljanje v teorijo."

[xxxviii] "ampak niso samo zunanje ovire, eno so zunanje, eno pa je to samorazumevanje lastne identitete znanstvenika, ker mnogim to da bi se v te vrednote spuščal, pa v te ne povsem merljive zadeve, in angažma, tega ne gleda kot del svoje identitete, marsikdo."

[xxxix] "Sicer pa pri našem delu ta drugi segment je mal slabo upoštevan. Kot rečeno, boljše je kot je blo v preteklosti ampak še vedno verjetno premalo glede na to koliko časa in energije tisti ki so res vpeti v to, koliko časa pa energije za to porabijo. […] dostikrat je res blo tko, sej zdej je tega vedno manj, kukr da univerza tega pač ne podpira, to se ne spodobi ne."

[xl] "In se mi zdi, prnese ti pa nč al pa minimaln, ne vem kolk, so nekje omenil 0,1 al neki uglavnm, ne vem a se ti sploh šteje ali nič. Res je da to ne more bit ocenjen kot znanstveno delo, ane, ampak, jst mislm, da bi mogl met tud to težo."

[xli] "Tko da, veva tud, da kar je strokovnega ne šteje nič praktično in tako udejstvovanje je strokovno. To da tle neke motivacije, tega ni ne. Je pa, da to, če je mal bolj, če se da ovrednotit al pa spravt v neke pač znanstvene okvire je pa objavljivo do določene mere."

[xlii] "A spodbuja [akademija in univerza], bi reku, tovrstno dejavnost in nastope, *odgovorno* dejavnost in nastope svojih članov ali ne?" [emphasis added]

[xliii] "mislm da bi morala bit bistveno večja fleksibilnost. V tem smislu. Vsakdo če se angažira sistematično, *poudarjam*, sistematično in merljivo. *Zavestno bom uporabu to besedo*. Pri, recimo, širjenju trajnostne paradigme, od teh predavanj v šolah in tako naprej, […] vsekakor bi pa moralo to pomenit da imaš manjše, pedagoške, ali pa raziskovalne zmogljivosti."

[…]

"in da se potem pa šteje zraven tud to, ali so učbeniki napisani, ali je poljudna knjiga na tem področju, ki ima, bom reku tud *navedbe, citate* in tako naprej. A ni to tudi nek doprinos k temu. Če za tem je znanstveno delo, ne." [emphasis added]

[xliv] "cel šolski sistem se je naučil biti odvisen. In nima veliko pobud. Enostavno niti ni treba, ne. Mi lahko živimo na račun sedanje strukture, kjer smo odvisni od neke politike […] Pravim ta podrejenost celega sistema nas najbolj dol vleče. In ne vem tudi, ali je mogoče od danes do jutri v izobraževanju razviti samozavest. Da imamo mi neka spoznanja, ki so pomembna. Ampak brez samozavesti v to ne bo prišlo, ne."

[xlv] "Mi smo se tud neprestano jezil na fakulteti, da pač če napišeš nek učbenik, ne, ki je dediščina, ki ostane, ni bil nikjer ovrednoten, nima znanstven vrednosti, ampak samo pedagoško vrednost ne. Če pa napišeš še tako neuporabno knjigo ki jo razumeta le dva človeka v Sloveniji in bo v slovenščini, seveda je pa avtomatsko tolk in tolk točk ne. To je ta realnost"

[xlvi] "Ja. Zdej mi pa povej, kaj je bolj pomembno, da jst kot strokovnjak napišem en tekst za mednarodno revijo na področju politične ekologije ali nardim razstavo 'Zemlja, pogled z neba', k 230 tavžent ljudi pride pogledat. Ktera stvar ma večji učink. Ko govorim učink, ne govorimo o teoretski produkciji in tko naprej."

[xlvii] "nikol ne veš kaj bi notr dal, ane. Ampak po drug stran pa vem zakaj je to notr. Ker ravn to, da ubistvu ti lahko pokažeš, da si nekako tud širše vpet v družbo. Na ta način ubistvu lahko znanost ubistvu vpliva. Al pa da s svojimi spoznanji ubistvu vplivaš tud na širšo javnost. Tko da se mi zdi da to niti ni tolk slaba kategorija, kokr je sitna."

[xlviii] "Je pa res, da mediji, jaz mislim, da so oni bolj ukvarjajo, v veliki meri, s temi dnevnimi novicami, s temi perečimi problemi, to je pa nekaj kar v bistvu mogoče v trenutnem stanju v katerem je družba se pa nekomu ne zdi pomembno, ker gre za en tak segment spet nekega celostnega spreminjanja, a ne."

[xlix] "In takrat sem enim stvarem oponirala in potem je bilo za televizijo zanimivo, da se nas posadi kot polemično, kar je tudi v redu, ampak preveč imamo teh polemik. Da bi pa tako konstruktivno kdaj kakšen medij zanimal tale šola in trajnostni razvoj ali univerza in njen pedagoški proces…"

[l] "No rekla bi, da se ta medijski prostor na nek način zožil in da je prešel na neke druge standarde, ki so po svoje poskušal biti mogoče bolj poljuden ampak pri tem zahaja v populizem. In tudi recimo ti novinarji so pogosto zelo nekritični do tega kar pišejo oziroma pišejo stvari, ki ne zdržijo recimo strokovno. Posebej govorim tudi recimo o področju podnebnih sprememb, kjer v bistvu se pravzaprav tema obravnava na nek senzacionalistični način, neobjektivno. […] Da v bistvu javnosti s tem ne koristijo, ker jih ne obveščajo na ustrezen način in tudi niti k ozaveščanju ne prispevajo in tudi ne k temu, da bi se ljudje ozavedli, da je treba mogoče nekaj naredit in tako naprej."

[li] "Istočasno bi pa dal zagon onim, ki želi v pozitivno, tak: 'Ej če je on lahko bomo mi tudi'. Pa to je nalezljivo, ne. […] Ker če pa to sam negativno, 'pa se nič ne splača, pa potem brez veze, kaj ti bomo delali, ne bomo delali'. Vsaj, da bi ta zagon uspeli naredit na osnovi pozitivnih informacij, na osnovi dobrih vzgledov, na osnovi konkretnih stvari, da bi lahko veliko pripomogli prav k implementaciji trajnosti, ki bi pa za posledico imeli tudi odziv potem javnosti."

[lii] “Mediji se danes borijo za svoj obstoj. […] med sistemi družbenimi, so mediji mogoče v najslabšem položaju, ne. So popolnoma podrejeni. Pa tudi če niso podrejeni neki opciji, so podrejeni javnosti in torej ne morejo nastopati kot avtonomen dejavnik v družbi. Čeprav bi morali, ane”

[liii] “Da bi pa sami izrazil interes, tko: ‘a mate kej na to temo’, ‘a vas to kaj’, tega pa ni zaznat ne. Tko je šlo, če smo jih mi pozval ‘ali bi?’, so vedno prišli, obratno pa da bi pa oni recimo izrazil interes, tega je pa zlo malo.”

[liv] “se mi zdi, da za delo z novinarji, mogoče moraš biti, ne vem, dovolj pogumen in imeti tudi nek svoj lasten plan zadaj. Moraš vedeti zakaj pravzaprav vključevat novinarje, ker v nekem projektu je to dodatno delo. In sedaj ni samo po sebi umevno, da da narediš ta korak posebej zaradi tega, ker je to nekaj kar je izven tvoje kontrole. Če napišeš strokovni članek in ga nekje objaviš, pač dobro ga popraviš, če je treba, ampak na koncu je tisto sporočilo, ki si ga želel posredovat. Mogoče lažje tako posredovat, kot da pač kličeš novinarje”

[lv] “Obstajajo odlični novinarji, ki spišejo tekste, ki se pozanimajo, ki naštudirajo stvari, ki opravijo dolg razgovor in ko pripravjo tekst, prosijo sami tud za avtorizacijo, oziroma so hvaležni za popravke v smislu, kaj se lahko vsi iz tega še kej novga naučimo, izboljšamo in tko naprej. Je pa tud ona druga plat, ko pokliče po telefonu in hoče vedt samo dva stavka, po možnosti čimbolj izzivalna, samo zato da zamaši prostor ki ga pač mora zamašit.”

[lvi] “Ja, nenatančnega povzemanja in na koncu tudi to, da jasno novinarji to zapakirajo v nek svoj kontekst, paket, ampak po navadi si niti ne vzamejo ali pa zelo pogosto si ne vzamejo dovolj časa, da te zares poslušajo, da jim ti lahko poveš to, kar želiš sporočit ne, ampak imajo pač ta svoj okvir in poberejo tisto kar oni sami želijo, ali nevem.”

[lvii] “Tako da, je to zelo zahteven projekt in zaradi tega je treba te teoretično metodološke predpostavke preizkušat in pogosto se pokaže, da je aplikacija v življenju bistveno bolj počasna kot bi si želeli na tem teoretično metodološkem polju. […]Skratka, res gre za civilizacijsko revolucijo, če temu tako rečemo in, a, nič čudnega da smo potem vsi skupaj malo nestrpni, ane, pri udejanjanju. Velike ideje trajnosti.”

[lviii] “Mislm, mhm, v čem videm problem. Če bi imeli dovolj časa, potem bi bil moj odgovor zelo enostaven. Izobraževanje, trajnostno izobraževanje, okoljska etika, absolutno kot osnova, ane. Ampak časa nimamo zato, veste, da bomo zdej čakal na to ne še na vašo generacijo, ampak šele na tole, ki se zdej začenja v vrtcih.”

[lix] »Percepcija okolja, problemov onesnaževanja ali pokrajinskih sprememb praviloma nikoli ne ustreza dejanskemu stanju.« (19.5., 53)

[lx] »…ni druge rešitve kot javno soočenje različnih pogledov, argumentov in vrednot. To je nekakšen javni proces učenja vseh udeležencev, kjer v razmerah spoznavne negotovosti nihče ne more nastopati v imenu nespornih dejstev, avtoritete znanja, objektivne resnice.« (12.8., 123).

[lxi] "Strokovna evalvacija […] je lahko le prvi korak. Ker gre v tem primeru najprej za vrednostno in ideološko vprašanje, je še kako pomembno, da se ta razprava odpre tudi za širšo zainteresirano javnost, katere vloga je ravno vrednosti premislek." (8.14., 68)

[lxii] »Zavedati se je treba negotovosti in tveganj. Bolj od rešitev nas zanima pomembnost vprašanj, ki si jih zastavljamo, ob zavedanju, da ne moremo predlagati »pravih«, temveč le možne rešitve, in da pri odločanju igrajo pomembno vlogo naše vrednote in socialni procesi.« (27.12., 212)

[lxiii] “drugače razmišljati o skupnem prostoru izobraževanja, o novem razmerju med *navadnimi* ljudmi in strokovnjaki ter med tradicionalnimi in netradicionalnimi učenci.” (13.8., 1475)

[lxiv] "zaradi pogoste zlorabe pojma samega: enkrat se kot 'javnost' predstavlja glasna, agresivna manjšinska skupina, ki ima določen, ozek interes, drugič pa v imenu 'javnosti' nastopa manjšinska strokovno in etično ozaveščenih ljudi, ki v danem nastopu nima osebne koristi, je pa prepričana, da v resnici zastopa interese večine, ki molči in ji je v bistvu vseeno." (23.9., 194)

[lxv] “K to recimo, v ta del, ko maš ta predavanja, […] je treba vložit ogromn energije, ane. Tud je treba prpravt čist drugač kokr pa če maš ti neko, predstavitev na znanstveni konferenci. Sicer tm so kratke,

ampak še zmer zlo jedrnato. Tuki morš tud ti met čist drug pristop ane. Ker ubistvu za vsako skupino ciljno, ki ji predstavljaš, se moraš v bistvu posebej priravit. Ker drugač poveš."

[lxvi] "Znanstveniki, ko producirajo nek način videnja, se trenirajo v nekem tipu komunikacije, ki je v današnjem javnem prostoru popolnoma izrinjena. […] Potem jim [javnosti] pa ti še ne znajo plasirat na način, […] kot jih je širša javnost pripravljena sprejet. Ampak tukej, bom reku, je treba iskat to formo in ne vem če so znanstveniki glih pripravljen, da bi iskal te stvari."

[lxvii] "teh konceptnih ponavad zaradi tega, ker je treba o njih razmišljat, al pa je pač treba poznat nek kod, so bolj hermetične, več časa porabiš za njih ne. In potem tud ljudje tega časa nimajo, nimajo energije, da bi se v to poglabljal, niti nimajo ponavad znanj in potem to tko bolj na površini ostaja […] Izkustvene so pa pač te, ki so bolj intuitivne pa bližje pač vsakdanji zaznavi in te so bolj učinkovite in hitrejš jih iz njih kaj potegneš. Najbolj učinkovita kombinacija obeh, ampak za to rabiš določen čas."

[lxviii] "Če pa boste gledal mal ane reference ljudi, ki se pa velik pojavljajo v medijih, na okroglih mizah, ne, boste ugotovil, da zlo mal znanstveno objavljajo, da majo mal točk. Ta korelacija je vsaj kokr jst opažam, se mi zdi, k pač ne morš bit na dveh mestih. Ne morš pisat znanstvenga članka in ne se angažirat."

[lxix] "mogoče malo te, ne mogoče, da moreš spustit te znanstvene kriterije na nižjo, bolj poljudno raven in to ni vedno, bom reku, sprejeto kot pozitivno. Naprimer, ker potem zgleda, da nisi sposoben ne, na drugačen način, to se pravi, znanstveno delat"

[lxx] "jaz mislm da stroka na ta račun zgublja eno avtoriteto. Kar naenkrat se zgodi potem, da javnost vse ve, boljš običajno kot strokovnjaki, zato ker zamešajo to, da če jih neki sprašuješ al pa če hočeš od njih neko mnenje, včasih se zameša to s tem, da ti nimaš pač nekih izdelanih predstav, al pa neke vizije, al pa sploh, da nimaš pojma."

[lxxi] "Takšno prepričanje utrjujejo tudi grafi št. 10, 12, 13, 14 v študiji *Pilot 2006 Environmental Performance Index*. *Yale University*, ki prikazujejo korelacije med indeksom stanja okolja na eni strani in indeksom konkurenčnosti, človekovega razvoja, vitalnosti ekosistema ter BDP per capita."

[lxxii] "V Zahodni Sloveniji Železniki z okolico prejmejo letno 2000 mm padavin, kar pomeni humidni tip klime. Če dodatno upoštevamo, da je površje iz starejših nekarbonatnih kamnin, na katerih se razvijejo debelejše distrične rjave prsti, je razumljivo, da so se zaradi obilnega deževja nasitile z vodo in se utrgale."

[lxxiii] "Celo brez časovnega vidika povezav obstajajo pozitivne korelacije med indeksom EPI in BDP per capita pogosto le na splošni agregirani ravni, to je seštevka točk vseh kazalnikov, ne pa med točkami posamičnih kazalnikov in BDP per capita."

[lxxiv] "Kapitalizem se lahko obdrži le tako, da se preoblikuje v novi kapitalizem. Tudi to je že nekaj, vendar ne predstavlja izhoda iz krize, ker gre predvsem za spreminjanje oblike, ne pa vsebine. Zamegljuje se bistvo in nam vzbuja lažno upanje." (12.M.4.)

[lxxv] "ali je sonaravno pojmovan trajnostni razvoj sploh možno udejaniti znotraj okvirov produkcijskega načina kapitalizma, ki zgodovinsko gledano nikoli ni bil samoomejitven ali celo etičen (»pravičen«), saj je to v nasprotju z naravo njegovega produkcijskega načina" (40.M.20)

[lxxvi] "Dejstvo je, da sedanja kriza kapitalizma ni kriza njegovega upravljanja, temveč je kriza sistema kot takega, kriza je strukturna." (40.M.17)

[lxxvii] "Človeštvo se vede kot tisti, ki je padel z nebotičnika in je pri prvem nadstropju še vedno živ in zadovoljen."

[lxxviii] "Ali si bomo nehali žagati zeleno vejo, od katere in na kateri živimo, in zato spremenili navade iz zadnjih nekaj stoletij, ali pa bomo zaradi sebe izumrli kot človeštvo" (38.M.12.)

[lxxix] "premikajo stole na palubi Titanica, ki se bliža ledeni gori v megli, namesto da bi korenito spremenili smer potova-nja." (38.M.12.)

[lxxx] "Treba je biti zelo previden do trditve ESI, da je ekonomska moč kritični dejavnik za obravnavanje okoljskih izzivov. Lahko bi kdo sklepal, da morajo vse države najprej postati dovolj bogate, to je

razpolagati z zadostno ekonomsko močjo, da bi uspešno obvladovale ekološke/okoljske posledice te moč" (12.M.5.)

[lxxxi] "Svet se ne spoprijema samo z gospodarsko krizo, marveč tudi s kulturno in versko krizo, s krizo zaupanja in vrednot. […] Gospodarska kriza je najbolj transparentna, ker je tako rekoč trajna. Občasni hudi zastoji v tekmi za prevlado so bolj opazni zato, ker se dotikajo drugih področij življenja." (13.M.3.)

[lxxxii] "Prav tako je treba tudi na ravni družbe »zgraditi« neki imaginarij, neko predstavo o tem, kaj je za nas še kvaliteta življenja in kaj ne več, znotraj katere bomo lahko presojali, kaj je še sprejemljivo in kaj ne. Tega imaginarija še nimamo zgrajenega. O tem se ne pogovarjamo." (8.M.4.)

[lxxxiii] "Največjo težavo vidim v prvem vsebinskem polju, v krizi vrednot. Kaj je za naše življenje pomembno, kako organizirati politično, gospodarsko, družbeno življenje v Sloveniji praktično brez nacionalnega soglasja o tem, katere so naše temeljne vrednote […]. Če so potrošniško, egoistično, tekmovalno, nesolidarnostno zasnovane vrednote tiste […] potem je zgodba že zaključena. Prepričan sem, da bi s strpnim dialogom lahko prišli do nacionalnega soglasja, […]. In sedaj je pravi trenutek, da civilna družba bolj artikulira svoja razmišljanja, ki niso tako obremenjena s štiriletnimi volitvami" (40.M.27)

[lxxxiv] "Če se bodo socialne in regionalne razlike v Sloveniji še naprej tako povečevale, bomo prišli do razreševanja problemov krize na ulici. To je perspektiva, ki nas čaka, če ne bomo krenili v smeri večje socialne pravičnosti, saj so razlike že prevelike. Potrpljenja ljudi bo prej ali slej konec" (40.M.25.)

SLOVENIAN ABRIDGMENT

Vloga družboslovnih ved v oživljanju javne sfere: primer trajnostnega razvoja

Pojem javne sfere se je v zelo kratkem času, vse od objave angleškega prevoda knjige *Strukturne spremembe javnosti* Jürgena Habermasa leta 1989, uveljavil kot "del obče prepoznavnega teoretskega arzenala" v sodobnem družboslovju (Pinter 2005, 10). Med mnogimi premisleki o normativnih vprašanjih o demokratični ureditvi družbe in kritikami sodobnega javnega delovanja pa prepogosto manjka refleksija ali analiza vloge družboslovja samega v javni sferi. V doktorski disertaciji sem raziskovala, kako *družboslovne vede* kot del znanosti prispevajo akterje in teme v *javni sferi* in ali s tem gradijo živahno javno sfero, v empiričnem delu disertacije pa sem se osredotočila na primer raziskovanja *trajnostnega razvoja*. V teoretičnih poglavjih tako predstavim teoretični okvir za razumevanje vloge družboslovnih ved v javni sferi iz normativnega vidika ter vidika diskurza in praks, s katerimi znanstveniki konstruirajo rastoč razkorak med javnostjo in znanostjo. Ker bi dejansko vlogo slovenskih družboslovnih znanstvenikov v javni sferi težko raziskali, se v empiričnem delu osredotočam na obseg in načine javnega angažiranja, odnos znanstvenikov do javnega znanja in participacije javnosti v procesih odločanja na primeru trajnostnega razvoja. V disertaciji tudi analiziram možnosti in omejitve pri delu družboslovnih znanstvenikov, pri tem se osredotočam na znanstveno kulturo, delovanje množičnih medijev in znanstveno politiko.

V javni sferi, področju družbenega življenja med državo in civilno družbo, naj bi državljani brez prisile političnih in gospodarskih sil obravnavali zadeve splošnega interesa, oblikovali politične preference, argumente in predloge ter opozarjali na družbene probleme. V teorijah demokracije, ki javno sfero obravnavajo normativno, komuniciranje v javni sferi razumejo kot inkluzivno javno razpravo, ki je premišljena in razumna ter temelji na racionalni argumentaciji (Habermas 1962/1989, 1996; Bohman

in Rehg 1997; Bohman 1999; Dryzek 2000). Le živahna javna sfera, v kateri se predlogi in preference o javnih problemih oblikujejo na tej podlagi, lahko zagotovi legitimnost demokratičnega odločanja. Vendar ta normativni ideal ni dosegljiv, saj zaradi same velikosti skupnosti, vedno večje družbene kompleksnosti, znanstvenega in tehnološkega razvoja, raznolikosti v pojmovanju dobrega življenja itd. politični procesi vseh pogojev ne morejo izpolniti. Zaradi te "neizogibne" kompleksnosti se politični procesi tako večinoma odvijajo rutinsko, torej jih ne usmerja komunikacijski tok iz javne sfere. Z *normativne pozicije* tako postane pomembno, ali obstajajo *pogoji in priložnosti* za problematiziranje in spreminjanje ustaljenih načinov delovanja (Habermas 1998a, 357, 358).

Čeprav so, zgodovinsko gledano, univerze in znanstveniki bili ključni za oblikovanje (nacionalne) javnosti (Splichal 2011, 122), se je z razvojem znanosti v 20. stoletju, izjemno rastjo in specializacijo, oblikovala miselnost, ki je v *konflikt postavila javno angažiranje in akademsko profesionalnost* in s tem komuniciranje znanstvenikov zamejila v akademski prostor (Calhoun 2009). Zaradi hitre rasti se je znanost razvila v dokaj samoreferencialne, "avtopoetične" sisteme, organizirane tako, da primarno obnavljajo odnose in procese, ki jih ustvarjajo (Splichal 2011, 124).

Navkljub pozivom k demokratizaciji znanosti v znanstveni in politični sferi, torej pozivom k obravnavanju neznanstvenih akterjev kot "partnerjev" (Linskog in Sundqvist 2004, 209), znanstvena sfera vlogo javnosti pogosto obravnava šele pri vprašanju podpore in ne že v fazi identifikacije problema in načrtovanja raziskovanja. Participacija je pogosto razumljena v precej omejenem pomenu (Lele 1991; Walker 2007) in vključuje predvsem komuniciranje znanosti kot poučevanje in prepričevanje javnosti (Burgess in Harrison 1998; Davies 2002). Morebitne participativne aktivnosti so (pogosto) vnaprej zamejene, saj onemogočajo odpiranje in problematiziranje širših strukturnih vprašanj, uokvirjanja problema samega in interpelirajo posameznika v vlogo uporabnika, potrošnika ali deležnika.

V kontekstu sodobne javne sfere, ki je zamejena na reprezentacije v množičnih medijih, zreducirana na enosmerni tok informacij in ki jo dominirajo poklicni strokovnjaki, se odpira vprašanje, kakšno vlogo bi družboslovni znanstveniki morali in

kakšno bi lahko igrali v javni sferi. Njihov prispevek je potrebno kritično preučiti, saj posedujejo moč, ki temelji na delitvi dela v družbi in asimetriji dostopa do informacij, kot tudi iz tega izhajajoč status in vpliv.

V empiričnem delu disertacije se osredotočam na primer raziskovanja trajnostnega razvoja v Sloveniji. Trajnostni razvoj je v zadnjem desetletju postal, vsaj na deklarativni ravni, eden od ključnih ciljev v mednarodni politiki, vendar pa je kot družbeni cilj (in tudi kot predmet raziskovanja) obsežen in dvoumen tako v strokovnih kot javnih (političnih) razpravah. V javnem in političnem diskurzu je po eni strani opazna inflatornost rabe tega pojma, po drugi strani pa lahkotnost in enostavnost razprav, ki doseganja trajnostnega razvoja ne obravnavajo kot kompleksen družbeni problem na različnih ravneh in v katerega so vpete različne vrednote in interesi.

Trajnostni razvoj postaja javni problem, kar pomeni, da sta potrebna identifikacija in vključevanje različnih javnih prioritet in pomenov (Wynne 2008, 29, 30). V tem kontekstu se pri trajnostnem razvoju odpirajo tradicionalna vprašanja teorij demokracije. Nekateri participacijo javnosti vidijo kot nujno za zagotavljanje družbenega konsenza in s tem formalne legitimnosti, s tem pa marginalizirajo vprašanja interesov in vrednot, ki so del tega problema. Drugi pa vidijo rešitev v inkluzivnem dialogu v javni sferi, skozi katerega bi lahko prišli do skupnega razumevanja koncepta trajnostnega razvoja, kritičnega premisleka koncepta in do deliberacije o politikah in v njih vključenih (ali prikritih) predpostavkah.

Metodologija

Raziskovalno delo v disertaciji sledi paradigmi t. i. močnega programa transdisciplinarnega področja študij znanosti in tehnologije (Science and Technology Studies – STS), za katerega je značilna konstruktivistična epistemološka pozicija in relativistična ontološka pozicija. Na splošno je za raziskovanje na tem področju značilno razumevanje znanja kot so-konstruiranega, to je, spremenljivega, odvisnega od konteksta in odprtega za različne interpretacije, perspektive in uokvirjanja (Irwin 2008, 586; Jasanoff 2004). Metodološko študije znanosti in tehnologije “sledjo

akterjem" (Irwin 2008, 584) in uporabljajo kvalitativne in anti-esencialistične metode raziskovanja. V disertaciji tako uporabljam metodo analize diskurza – natančno branje tekstov, tako znanstvenih in medijskih kot tudi prepisov intervjujev z znanstveniki, pri čemer sem se osredotočila na produkcijo pomenov in upovedovanje specifičnih načinov razumevanja skozi diskurz (Tonkiss 2004, 373). Aksiološko ne sledim večini na tem področju; zanjo je značilen določen "odpor do normativnih sodb" o njihovih ugotovitvah, o predpostavkah in odnosih moči (Fuller 2000). Osnovo za moj kritičen pristop predstavljajo normativna razumevanja demokratičnega odločanja in bolj kritične perspektive s področja študij znanosti in tehnologije.

V analizi diskurza znanstvenikov v njihovih znanstvenih in medijskih tekstih sem se osredotočala na različne ravni konceptualizacij trajnostnega razvoja, predvsem na vlogo družboslovnih ved in javne sfere v njih ter na diskurzivne procese razmejevanja znanosti od drugih sfer delovanja. Cilj poglobljenih intervjujev je bil priti do razumevanja o motivaciji znanstvenikov za angažiranje v javni sferi in ugotoviti, kako razumejo odnos med znanostjo, mediji in znanstveno politiko, ter kako ta percepcija vpliva na njihovo delo.

Raziskovalna populacija, torej slovenski družboslovni znanstveniki, ki se ukvarjajo s trajnostnim razvojem, je bila določena v dveh korakih. Za določanje slovenskih družboslovnih znanstvenikov je bila uporabljena baza SICRIS, kjer je vključenost predstavljala najboljši dostopen indikator statusa znanstvenika, ARRS klasifikacija pa področja raziskovanja. Določitev populacije je nadalje potekala v obratni smeri, torej s pregledom slovenskih znanstvenih tekstov o trajnostnem razvoju (in sonaravnem razvoju zaradi različne uporabe terminologije) in eliminacijo avtorjev, ki niso zadoščali zgornjim kriterijem. Zaradi nenatančnosti kriterijev[51] je bilo za določitev končnega vzorca sprva izbrano večje število najbolj prolifičnih družboslovnih znanstvenikov. Končni vzorec dvajsetih znanstvenikov je bil določen po preliminarni analizi tekstov z uporabo matrike za vzorčenje, da bi tako bil v analizo vključen najbolj raznovrsten nabor diskurzov o trajnostnem razvoju kot tudi za doseganje raziskovalne simetrije – vključevanje tako bolj in manj vidno angažiranih (v medijih).

[51] Vključen je bil širši obseg ARRS kod za področje dela; parameter "ključna beseda" v bazi COBISS išče po celotnem tekstu vpisa in tako lahko poda "lažne" rezultate.

Za namene analize so bili zbrani znanstveni teksti znanstvenikov, ki so bili analizirani v celoti, razen v primeru treh najbolj prolifičnih, kjer je bil izbran vzorec, ki zaradi cilja doseganja zasičenosti ni bil sistematičen (vse skupaj 255 znanstvenih tekstov). Za namene analize znanstvenega diskurza v medijih so bili zbrani teksti, objavljeni na spletnih straneh štirih največjih časnikov: Večer, Dnevnik, Delo in Primorske novice (vse skupaj 151 medijskih tekstov). Zaradi različnih stopenj v procesu digitalizacije, dostopnosti in načinov arhiviranja vzorec lahko ne odseva objav v tiskanih časnikih. Opravljenih je bilo šestnajst intervjujev, s trinajstimi iz vzorca in tremi dodatnimi znanstveniki iz prvotnega širšega vzorca za namene zagotavljanja pokritosti različnih področij in kategorij zaposlitev. Intervjuji so bili pol-strukturirani in, razen enega, izvedeni osebno.

Ugotovitve - teoretične osnove

Ne glede na različne pristope in konceptualizacije je vloga (družboslovnih) znanstvenikov v javni sferi, njenem nastanku ali vplivu na javno mnenje le redko obravnavana. Univerzitetni profesorji v 19. in v začetku 20. stoletja so se pogosto uveljavili kot pomembni mnenjski voditelji, vendar se v teorijah javne sfere le redko pojavljajo kot relevanten "sestavni del" (Splichal 2011, 122). V disertaciji sem se osredotočila na te redke primere: med klasičnimi teorijami javnosti avtorja Johna Deweyja (1920, 1927/1991, 1938) in Walterja Lippmanna (1921/2007, 1927/2009, 1955), med modernimi teorijami mediatizirane javne sfere avtorja Leona Mayhewa (1997) in Johna B. Thompsona (1995, 2005), ki predstavljajo dve različni razumevanji vloge javnosti v političnem odločanju in posledično vloge znanosti.

Za Deweyja in Mayhewa normativne teorije demokracije predstavljajo osnovo za analizo in kritiko stanja v javni sferi, torej zagovarjata komunikativno delovanje javnosti kot ključno konceptu demokracije in kot izvor legitimnosti političnih odločitev. Čeprav sta v svojem pisanju obravnavala pomanjkljivosti javne sfere in akterjev v njej v dveh različnih zgodovinskih obdobjih, sta prišla do istih zaključkov – da v javni sferi ni pogojev in okoliščin, v katerih javnost lahko postane avtonomna in učinkovita v

usmerjanju procesa političnega odločanja. Zato prispevek družboslovnih znanosti ne leži v zgolj prispevanju akterjev in tem v javni sferi, v polni publiciteti, ki bi zamenjala prikrivanje, pristranskosti, zavajanje in golo nevednost (Dewey 1927/1991, 209); družboslovni znanstveniki ne smejo delovati ločeno ali oddaljeno od javnosti, prispevati morajo tudi k ustvarjanju novih pogojev in prostorov za artikulacijo in deliberacijo.

Lippmann in Thompson pa nasprotno vidita normativne teorije kot nedosegljiv ideal in jih zavrneta kot osnovo analize. Tako kot Dewey in Mayhew poudarjata pomen publicitete in kritičnega osvetljevanje družbenih pojavov, procesov in institucij, vendar je njuna obravnava javnosti individualizirana, koncept javnega pa je zreduciran na zgolj vprašanje vidnosti. Njuna analiza stanja v javni sferi brez upoštevanja normativnih vidikov se tako osredotoča le na publicistično funkcijo akterjev v javni sferi, kjer javna raba uma postane zgolj tok informacij, ki ne izvira iz komunikativne moči javnosti.

V disertaciji predlagam izpeljavo normativnih idealov, ki sledi pragmatističnemu modelu, kot ga predstavi Habermas (1970), ob upoštevanju delitve dela v družbi kot tudi v znanstveni skupnosti. Pragmatistični model, v nasprotju s tehnokratskim in decizionističnim, ne sloni na napačni predpostavki delitve med dejstvi in vrednotami. V njem ureditev družbe sloni na kritični in recipročni interakciji med političnimi odločevalci in znanstveniki, ki mora biti zakoreninjena v "družbenih interesih in vrednostnih orientacijah določenega življenjskega sveta", ki določajo praktične potrebe v konkretnih situacijah (Habermas 1970, 68; Bohman 1999b).

Kot opozarja tudi Habermas, pragmatistični model ni dosegljiv – odnos med znanstveniki in javnostjo je na eni strani omejen zaradi strukturnih sprememb v javni sferi, na katere opozarjajo zgornji avtorji. Neodvisno formacijo in delovanje javne sfere omejuje administrativna in ekonomska logika, ki je prostor za deliberacijo v javni sferi zreducirala na reprezentacije v množičnih medijih. S komodifikacijo in profesionalizacijo javno komuniciranje tako izgubi svojo politično funkcijo usmerjanja procesov odločanja (McLuskie 2003, 31) in ne predstavlja osnove za javno življenje. Na drugi strani je odnos med znanstveniki in javnostjo omejen z rastočim razkorakom med znanstvenim in javnim znanjem. Ta v 20. in 21. stoletju predstavlja nujen element

modernega razumevanja znanosti. V 19. stoletju je ta vrzel bila razumljena kot posledica razlik v načinu argumentacije, formalizacije in matematizacije znanosti ter kasneje profesionalizacije; in kot taka ni povzročala "avtomatične diskvalifikacije" javnega znanja (Bensaude-Vincent 2001, 101, 106). Sodobni diskurz o znanosti in v znanosti jasno razlikuje javno in znanstveno znanje in s tem zanika sposobnost javnosti, da samostojno artikulira interese, prioritete in pomene, "ki jih ni mogoče domesticirati in nadzirati skozi znanstvene oblike reprezentiranja" (Wynne 2008, 30., op. 5; 2007).

Odnos med odločevalci, znanstveniki in javnostjo v sodobnih demokracijah je torej bližje decizionističnemu modelu oziroma se bliža tehnokratskemu, saj "politiko v vedno večji meri usmerjajo tehnokratski in ekonomski diskurzi" (Dahlgren 2009, 23). V kontekstu omejitev pragmatističnega modela in vloge družboslovnih ved pri njihovem premagovanju se odpirata dve vprašanji: ali so družboslovni znanstveniki res izolirani od javnosti in ali njihovo javno angažiranje zavira ali prispeva k depolitizaciji javnosti.

Vloga družboslovnih znanosti tako ne leži le v prispevanju akterjev in tem v javni sferi, torej v publicistični orientaciji akterjev v njej, ampak tudi v kritični ekspoziciji družbenih fenomenov, procesov in institucij ter ustvarjanju novih okoliščin in prostorov za artikulacijo in deliberacijo. Ta druga "samoreferencialna značilnost komunikativnih praks" je odločilna, saj predstavlja osnovo za živahno javno sfero, takšno, ki ima sposobnost zaznavati, identificirati in problematizirati latentne probleme in v kateri se javnosti lahko prepoznajo in aktualizirajo (Habermas 1998a, 358, 379). Vendar je v kontekstu omejenih resursov in delitve dela znotraj znanstvene skupnosti težko dosegljiva javna debata, skozi katero bi se ta druga funkcija komuniciranja lahko aktualizirala. Približek k temu bi znanstveniki lahko dosegli z zaznavanjem in upoštevanjem javnih vrednot, interesov in problemov ter z refleksivnostjo o svojem znanju, relativni moči in statusu ter o svoji izoliranosti v določenem družbenem okolju in načinu mišljenja.

V disertaciji obravnavam tudi različne pristope k razumevanju odnosa med javnim in znanstvenim znanjem; kljub vedno večji prisotnosti pristopov, ki izhajajo iz interpretativne paradigme, torej relativistične ontološke in subjektivistične

epistemološke pozicije, kot tudi nekaterih, ki izhajajo iz kritične teorije, ostaja dominanten model deficita javnosti. Ta je osnovan na razlikovanju med znanstvenim in javnim znanjem in razume komuniciranje znanosti kot enosmeren linearni proces, pri katerem je javnost razumljena kot pasivna množica potrošnikov znanstvenega znanja in tehnologij.

Kaj razmejuje znanost od drugih družbenih sfer in praks, pa niso bistvene lastnosti znanosti same. To razliko konstruirajo znanstveniki skozi procese razmejevanja, ki se izražajo v diskurzivnih praksah, s katerimi znanstveniki poizkušajo pripisati izbrane lastnosti znanosti in s tem zarisati "retorično razmejitev med znanostjo in neko manj avtoritativno, subsidiarno ne-znanostjo" (Gieryn 1999; 4, 5). Procese razmejevanje je potrebno razumeti širše kot le namerne "ideološke strategije" v namen zagotavljanja akademskega ugleda in "maksimizacije znanstvenega profita" (Bourdieu 1975, 22, 23). Te procese je potrebno razumeti tudi kot rutinske prakse, ki odsevajo zgodovinske, samoumevne diskurze, predvsem o znanosti kot politično nevtralni, ločeni od vrednot, interesov in mnenj, o znanosti kot javnem dobrem in o primernem obnašanju znanstvenikov (Kinchy in Kleinman 2003, 871, 2, 881). Tako se ti procesi ne odvijajo le epizodično in niso nujno namerni ali agonistični, saj razmejevanje ne izključuje komuniciranja, sodelovanja in pogajanj.

Ugotovitve – empirična raziskava

Ker bi dejansko vlogo družboslovnih znanosti v javni sferi bilo mogoče empirično izmeriti le v delu, ki se tiče publicistične funkcije komuniciranja, sem se v empirični raziskavi osredotočila na prakse in kulturo slovenskih družboslovnih znanstvenikov in na nekatere kontekste njihovega dela. Dva dejavnika, ki vplivata na njihovo javno angažiranje, sta delovanje množičnih medijev in znanstvena politika.

Kot glavni mediator znanosti v javni sferi pomembno vlogo igrajo množični mediji. Dosedanje raziskave poročanja medijev o znanosti ugotavljajo, da se mediji osredotočajo predvsem na nove ali presenetljive ugotovitve, "izume" in spore v znanstveni skupnosti in ne na interpretacije in razumevanje družbe (Nelkin 1995;

Sismondo 2004). Ta dominantni pogled na odnos med znanostjo in mediji ga razume kot trčenje "dveh kultur", kar ima za posledico po eni strani poveličevanje "velike znanosti" in heroične reprezentacije pomembnih znanstvenikov, po drugi strani pa nenatančno, poenostavljeno ali zavajajoče poročanje (Nelkin 1995; Gregory in Miller 1998).

Tovrstne raziskave se primarno osredotočajo na naravoslovne in tehnične znanosti; redke raziskave poročanja o družboslovnih znanostih pa izpostavljajo, da se družboslovno znanje v medijih pojavlja večinoma kot le strokovno mnenje ali komentar na teme in dogodke v novicah (Weiss in Singer 1988, Haslam in Bryman 1994). Novinarji ne namenjajo pozornosti samemu raziskovanju in njegovim rezultatom – rubrika "znanost" v časnikih ter televizijske in radijske oddaje o znanosti so namenjene le naravoslovnim in tehničnim znanostim. Za prisotnost v medijih morajo pogosto poskrbeti družboslovni znanstveniki sami; njim so namenjene določene rubrike in sobotne priloge, ki so namenjene objavljanju interpretativnih zvrsti (glej tudi Hijmans et al. 2003).

V kolikšni meri pa družboslovni znanstveniki uporabljajo možnosti, ki jih ponujajo različni mediji, pa ni odvisno le od delovanja medijske sfere, ampak tudi od percepcije odnosa med znanostjo in mediji ter odnosa znanstvene kulture do pojavljanja v medijih. Intervjuvani znanstveniki vidijo medije kot pomemben faktor pri informiranju javnosti o znanosti in trajnostnem razvoju, pri ozaveščanju in približevanju znanstvenega znanja "masi ljudi". Najbolj pomemben vidik pri tem je funkcija diseminacije – kot načina doseganja in tako vplivanja na splošno javnost. Kljub priznavanju pomena medijev, imajo znanstveniki ambivalenten odnos do njih - zelo so kritični do medijev, ko je govora o komuniciranju znanosti na splošno, pri opisu svojih izkušenj pa so večinoma zadovoljni, a ne pretirano navdušeni (tudi Peters et al. 2008; Weiss in Singer 1988, 73).

Kritike medijev so se večinoma nanašale na način delovanja medijev. Trajnostni razvoj oziroma s tem povezane širše teme medijev po mnenju znanstvenikov ne zanimajo; ti se zanimajo za novosti, dogodke in specifične podatke, predvsem o okolju in onesnaževanju. Pri tem ne gre le za vprašanje drugačnega pogleda na novičarske

vrednote, temveč za vedno večji senzacionalizem, populizem in nekritičen pristop medijev. S tem je povezana tudi večja odprtost medijev "velikim imenom", ne glede na vsebino njihovega prispevka. Skozi personalizacijo in dramatizacijo poročanja se mediji izognejo poročanju o resničnih vzrokih za družbene in okoljske probleme in posledično zakrivajo institucionalne in strukturne probleme (glej tudi Boykoff 2009; Weingart in drugi, 2000).

V odnosu do lastnega sodelovanja z mediji vlada nekakšna inercija – kljub večinoma pozitivnim (oz. nenegativnim) izkušnjam se znanstveniki sami večinoma ne angažirajo. Družboslovni znanstveniki v vzorcu se odzovejo na prošnje novinarjev za sodelovanje, bolj redko pa se sami angažirajo – le nekaj jih je objavilo samostojne prispevke v časnikih. Angažiranje v medijih je zanje vprašanje osebne inklinacije, vendar je pri tem potreben tudi vložek energije, truda in časa za vzpostavitev in ohranjanje odnosa z mediji, za priprave in načrtovanje.

To pomanjkanje zanimanja za angažiranje v medijih velja za vse različne tipe konceptualizacij; potrebno pa je izpostaviti eno skupino znanstvenikov s percepcijo posebej negativnega odnosa medijev do znanstvenikov, tistih, ki zagovarjajo bolj transformativne konceptualizacije trajnostnega razvoja. Vrata medijev naj bi za njih postajala vedno bolj zaprta zaradi uredniških politik in zaradi lastniške strukture medijev. Mediji kot zasebna podjetja ne želijo širiti idej v nasprotju s svojimi interesi ali interesi oglaševalcev. V tem kontekstu pisanje o transformaciji družbenega sistema v smeri trajnostnega razvoja in o drugih temah, ki kritizirajo strukture moči, ni dobrodošlo.

Kljub percepciji negativnega odnosa medijev do transformativnih konceptualizacij trajnostnega razvoja, trije tovrstni znanstveniki predstavljajo večino vzorca medijskih tekstov (109 od 151). To sicer ne nakazuje zanimanja medijev za tovrstne konceptualizacije v splošnem, saj večina medijskih prispevkov ne obravnava trajnostnega razvoja kot takega, temveč se osredotoča na novice. Njihovo večjo prisotnost v medijih lahko pripišemo njihovi relativno večji motiviranosti za angažiranje z novinarji, pisanje samostojnih (in neplačanih) medijskih prispevkov in za angažiranje zunaj svojih službenih obveznosti. Njihovo razumevanje trajnostnega razvoja, ki

poudarja nujnost radikalne spremembe načina mišljenja, institucij ter načina produkcije in potrošnje, nakazuje, da so bolj kritični do trenutnega stanja v družbi.

Večino dosedanjih raziskav o javnem angažiranju znanstvenikov predstavljajo kvantitativne raziskave, ki na nacionalni ravni preučujejo aktivnost znanstvenikov in so posledično zamejene na analizo medijskih vsebin ali na anketiranje znanstvenikov (Bauer in Jensen 2011; Bentley in Kyvik 2011; Kyvik 2005); prav tako je več pozornosti namenjene t. i. javnim intelektualcem. Tovrstno zamejevanje družbene vloge znanstvenikov na javno kot vidno je sicer z vidika raziskovanja bolj praktično, vendar po eni strani javnost implicitno razume le kot splošno (nacionalno) javnost ali kot občinstvo in uporabnika, po drugi strani pa angažiranje implicitno uokvirja kot instrumentalno delovanje, kot način pridobivanja pozornosti in s tem prepoznavnosti, podpore ali financiranja.

V disertaciji javno angažiranje obravnavam ne glede na stopnjo njihove vidnosti – intervjuvani znanstveniki se po eni strani angažirajo v javnosti in z javnostjo skozi svoje poklicne dejavnosti (npr. delo na terenu, pisanje v strokovnih publikacijah, implementacijski projekti, javne predstavitve ipd.), po drugi strani pa tudi izven obsega delovnih obveznosti (npr. okrogle mize, projekti ozaveščanja, sodelovanje z in v društvih in drugih nevladnih organizacijah ipd.), pri čemer bolj aktivni ne ločujejo med svojo vlogo aktivnega državljana ali znanstvenika.

Iz intervjujev z znanstveniki sledi, da motivacija za bolj in manj vidno javno angažiranje ne sledi iz instrumentalnih vzgibov. Motivacija za angažiranje pri večini izhaja iz njihovih osebnih teženj in interesov in je za mnoge tudi povezana z njihovim razumevanjem vloge znanosti in njih kot znanstvenikov v družbi. Mnogi so poudarili, da mora znanost biti "uporabna", "konkretna", ne biti cilj sama sebi; pri tem ni pomembno le informiranje in ozaveščanje, potrebno je tudi pustiti konkretne sledi v družbi. Družbena relevantnost njihovega dela je zelo pomembna, nekateri jo razumejo kot inherentno svojemu delu, vendar je razvidno iz njihovega odnosa do javnosti, da pri večini razumevanje družbene relevantnosti ne izhaja iz formulacij družbenih problemov v javnosti sami, temveč je določeno avtonomno, znotraj znanstvene sfere.

Podobno kot pri odnosu z mediji znanstveniki na angažiranje ne gledajo odklonilno, kot nevarno ali težavno, kot je v primeru naravoslovnih znanstvenikov ugotovila Sarah Davies (2008). Na osebni ravni angažiranje v javnosti podpirajo, nekateri celo spodbujajo, odnos do angažiranja na splošno v znanstvenih krogih pa ni ocenjen kot negativen, bolj indiferenten. Neposrednih negativnih odzivov kolegov pri večini ni bilo. Javno angažiranje zanje ni v navzkrižju z znanstveno avtoriteto ali profesionalnostjo. Vendar so iz njihovih odgovorov razvidna nekakšna "pravila" sprejemljivega angažiranja v javni sferi, ki konstruirajo zaželeno predstavitev znanosti v javnosti. Najbolj pomembno pravilo je posedovanje določene ravni znanja, da so tisti, ki se angažirajo vrhunski znanstveniki, nosilci in sporočevalci "avtoritativnih in pravih informacij", osnovanih na znanstvenem delu. Le redki pa so izpostavili pomen prilagajanja vsebine in sposobnosti približanja svojih ugotovitev javnosti ter vprašanje avtoritete, in sicer ne avtoritete vzpostavljene s strokovnim in znanstvenim delom, temveč avtoritete, ki jo imajo v očeh javnosti.

V primerjavi z mediji znanstvena politika predstavlja bolj konkretne omejitve za javno angažiranje znanstvenikov – največkrat izpostavljena ovira so časovne omejitve in s tem povezane dileme, ki izvirajo iz politik, ki urejajo napredovanje znanstvenikov. Te dominira kvantifikacija in evalvacija ciljev in dosežkov. Po eni strani se s poudarkom na objavah, faktorjih vpliva in drugih kvantitativnih ocenah dela zamejuje količina časa in drugih sredstev; po drugi strani evalvacija učinkov dela ne upošteva njihovega morebitnega vpliva v javni sferi. Gledano v celoti, sistem evalvacije prispeva k negativni percepciji, da javno angažiranje ni cenjeno; kljub temu so nekateri dvomili, da bi bil drugačen sistem bolj stimulativen. Znanstvena politika nalaga določene obveznosti družboslovnim znanstvenikom, obenem pa usmerja resurse k želenim dejavnostim in uokvirja vlogo znanosti na določen način. Ponotranjenje teh pravil je razvidno v njihovem razumevanju znanstvene kvalitete – kljub dvomom in kritikam evalvacijskega sistema, mnogi navajajo te iste kriterije (npr. objavljanje v mednarodnih, recenziranih revijah z visokim faktorjem vpliva) kot indikatorje kvalitete raziskovanja.

V teku raziskave se je izkazalo, da se večina obravnavanih znanstvenikov javno angažira na različne načine, obseg angažiranja pa je težko oceniti, predvsem v primeru manj vidnih oblik. Znanstvena politika in delovanje medijev ne predstavljata

neposredne ovire angažiranju, vendar tudi nista stimulativna. Zaradi odvisnosti od evalvacijskega sistema, nezainteresiranosti medijev in manka podpore znotraj znanstvene skupnosti vlada inercija neangažiranja.

S porastom izrazov, kot so participativna, državljanska, družbena in demokratična znanost, ki nakazujejo vzpon participativne paradigme v znanstveni politiki, je tako ključno vprašanje ne le ali se družboslovni znanstveniki angažirajo v javni sferi in z javnostjo, temveč kakšno razumevanje koncepta *javnega* to vključuje. Čeprav naravo njihovega javnega angažiranja do neke mere sooblikujejo zunanji faktorji, jo v veliki meri determinira znanstvena kultura. Njihovo razumevanje odnosa med znanstvenim in javnim znanjem je sestavni del procesov razmejevanja, ki pripisujejo določeno vlogo znanosti in določeno vlogo javnosti ter urejajo interakcije med tema dvema družbenima sferama. Na podlagi analize znanstvenega diskurza sem razpoznala tri načine razumevanja tega odnosa.

Polovico vzorca predstavljajo tisti, ki (slab) odnos med znanostjo in javnostjo vidijo kot posledico *deficita javnosti*. To razumevanje je osnovano na razločevanju med znanstvenim in javnim znanjem ter obravnava komuniciranje znanosti kot enosmeren linearen proces. Razmejevanje pozicionira znanost kot avtoritativno in nadrejeno, ker predstavlja "specifično obliko racionalnosti" (Felt 2003, 16), javnost pa naj bi bila odgovorna za slab odnos z in do znanosti in posledično za neproduktivne razprave o javnih problemih. Kljub poudarjanju pomena participacije javnosti mnogi izpostavljajo njeno pasivnost in manko znanja ter zagovarjajo dodatno izobraževanje in osveščanje kot pogoj za participacijo. Vključevanje javnosti torej ni videno kot možnost prispevanja k skupnemu razumevanju ampak instrumentalno za namene implementacije. To instrumentalno razumevanje vidi participacijo državljanov kot podlago za deljeno odgovornost, za podporo dolgoročnih sprememb vedenja in implementacijo. Za to javnost potrebuje "objektivne" informacije in mora biti "primerno" informirana, skozi participacijo pa se bo identificirala s problemi in prevzela odgovornost. Izobraževanje in osveščanje bo podalo in vcepilo tudi "prave" vrednote in

preusmerilo delovanje in razmišljanje na podlagi osebnih interesov ali nezainteresiranost v delovanje v javnem interesu.

Druga skupina kritizira takšne individualistične pristope, ki zamejijo premislek o vlogi institucij in politične moči ter posameznika postavijo v vlogo uporabnika in potrošnika in šele nato državljana. Vloga javnosti je v tej skupini intrinzična političnemu procesu, javnost pa videna kot nosilec specifičnega znanja – lokalnega znanja, drugačnih perspektiv, vrednot in interesov. Znanje javnosti je tako videno kot komplementarno znanju znanstvenikov; znanstveno znanje predstavlja določeno osnovo, vendar ne celovito ali ustrezno podlago za politično odločanje. Participacija javnosti je tako ključna pri kompleksnih političnih odločitvah, ne le za doseganje inkluzivnosti, transparentnosti in legitimnosti procesov odločanja ampak tudi za sodelovanje in doseganje medsebojnega razumevanja. Diskurz teh znanstvenikov je tako soroden pozivom za *demokratizacijo* znanosti – v obeh primerih zagovarjajo vključevanje javnosti v primerih znanstvene negotovosti ali v primerih kompleksnih družbenih problemov, ki eksplicitno vključujejo vprašanje družbenih vrednot. Z ohranjanjem delitve med dejstvi in vrednotami tako dajejo prednost znanstvenemu znanju; javno znanje je tudi pomembno pri oblikovanju politik, vendar nima vpliva na znanstveno znanje samo.

Tretje, *kritično* razumevanje tega odnosa ne razmejuje znanstvenega in javnega znanja kot univerzalnega ali partikularnega in lokalnega, objektivnega ali izkustvenega in obremenjenega z vrednotami in interesi. Za odločanje so torej potrebni prispevki vseh, kritični pristop, odpiranje in kritična refleksija vprašanj (prikritega) konflikta interesov, predpostavk in vrednot. Reševanje družbenih problemov tako ne more biti osnovano na izboru med alternativnimi "pravimi" rešitvami, ki jih pripravijo eksperti, temveč na skupnem razumevanju družbenih problemov. To kritično razumevanje ni osnovano na razmejevanju – čeprav ima znanstveno znanje določene prednosti v kontekstu delitve dela v družbi, ga ne vidijo kot osnovo za javno razpravo, niti kot pogoja za participacijo niti kot avtoriteto, ki določa definicijo problema. To pomeni, da za njih niti znanstveno niti javno znanje ni imuno.

Kljub prisotnosti kritičnega pristopa v pisanju slovenskih družboslovnih znanstvenikov je razmejevanje med znanstvenim in javnim znanjem dominantno, pristop, ki (slab) odnos vidi predvsem kot posledico deficita javnosti, pa predstavlja polovico vzorca. Ti procesi razmejevanja so povezani z njihovim razumevanjem vloge znanstvenikov v trajnostnem razvoju – večji razkorak je značilen za tiste, ki vlogo znanstvenikov vidijo kot prispevanje instrumentalnega znanja, in manjši pri tistih, ki jo vidijo kot prispevanje refleksivnega znanja, kjer je vprašanje vrednot videno kot ključno za razreševanje javnih problemov – in do neke mere z razumevanjem vloge svojega raziskovalnega področja.

Zaključki

V kontekstu družbene delitve dela lahko ugotovitve o pozitivnem odnosu do javnega angažiranja in motivaciji znanstvenikov na podlagi družbene relevantnosti razumemo kot vzpodbudne, vendar je dominacija razmejevanja med javnim in znanstvenim znanjem problematična. Če upoštevamo njihovo razumevanje odnosa med znanostjo in javnostjo – procese razmejevanja – je lahko razbrati, da za večino vprašanje družbene relevantnosti ne izvira iz formulacij družbenih problemov v javnosti sami, temveč je določeno samostojno znotraj znanstvene skupnosti. To je razvidno tudi pri razumevanju javnega dobrega v konceptualizacijah trajnostnega razvoja, naj bo to trajna gospodarska rast, ohranjanje narave ali post-materialistične vrednote. Vendar, če želijo znanstveniki prispevati k (oživitvi) javne sfere, ne smejo družbene relevantnosti razumeti kot zgolj indikatorja avtonomne dejavnosti.

Pomembnost družbene relevantnosti skupaj z dominacijo razmejevanja v pogledih družboslovnih znanstvenikov je problematična tudi v kontekstu vzpona participativne paradigme v znanstveni politiki. Večji obseg javnega angažiranja ne pomeni bolj refleksivnega angažiranja znanstvenikov in s tem prispevanja k oživljanju javne sfere. Če znanstveniki ne vključijo v svoje delo ali vsaj zaznajo drugačnih razumevanj družbenih problemov znotraj javnosti, njihovo javno angažiranje lahko zameji ali zaduši javno razpravo ne glede na njihove namere. Poleg tega lahko s svojim

javnim angažiranjem zamejijo ali celo preprečijo konstrukcijo skupnega razumevanja določenega družbenega problema. S procesi razmejevanja *de facto* javnosti odrekajo legitimnost in sposobnost kolektivnega in samostojnega izražanja in je potemtakem ne interpelirajo.

Vprašanje problematičnega angažiranja znanstvenikov večinoma ni obravnavano v področjih, ki raziskujejo znanost in tehnologijo. Zaradi manka normativne pozicije se osredotočajo na specifično razumevanje učinkovitosti. Pri raziskovanju angažiranja znanstvenikov je poudarek večinoma na obsegu bolj vidnega angažiranja, ki ima konkretne učinke, pri raziskovanju javnosti pa na sposobnosti sodelovati, razumeti, na ozaveščanju in spreminjanju odnosa do znanosti.

Podobno se raziskovanje procesov razmejevanja osredotoča bolj na namerne strategije, na vidne in eksplicitne konstrukcije razlik, in ne toliko na rutinske prakse znanstvenikov, v katerih se odsevajo zgodovinski diskurzi o znanosti (Kinchy in Kleinman 2003, 871, 2, 881). Razumevanje procesov razmejevanja kot inherenten del znanstvene kulture, ki se odvija ne le očitno in kot odziv na javne polemike, ampak tudi kot del vsakdanjih praks, nam omogoča, da analiziramo diskurz znanstvenikov kot način upovedovanja odnosa med znanstvenim in javnim znanjem. Primer slovenskih družboslovnih znanstvenikov ob odsotnosti instrumentalnih razlogov za javno angažiranje predstavlja procese razmejevanja, ki niso agonistični ali namerni, ampak del rutinske prakse; kljub temu pa nosijo implikacije za njihovo vlogo v javni sferi.

Med raziskavami znanstvene kulture in praks ter bolj specifično procesov razmejevanja je opazen manko raziskav o družboslovnih znanstvenikih. Čeprav se ugotovitve o angažiranju znanstvenikov v Sloveniji ter Evropi, Združenem kraljestvu in Združenih državah Amerike razlikujejo, ni mogoče teh razlik pripisati razlikam med naravoslovnimi in tehničnimi ter družboslovnimi znanostmi. Kljub temu pa je ob zaključku potrebno izpostaviti dve glavni razliki. Čeprav je razmejevanje dominantno tudi v primeru teh družboslovnih znanstvenikov, jih več zavrača delitev na dejstva in vrednote, vendar to ne pomeni, da so o tem bolj refleksivni. Druga in morda

najpomembnejša razlika pa je prisotnost kritičnega razumevanja odnosa med javnim in znanstvenim znanjem, ki nakazuje in poziva k relativizaciji razmejevanja. Čeprav je to razumevanje večinoma prisotno le v diskurzu, ga ne smemo zanemariti. Diskurz sam po sebi je realizacija procesov razmejevanja in je pomemben ne glede na (fizične) prakse znanstvenikov.