OFF THE BEATEN TRACK

EXPLORING THE ORCA PASS INITIATIVE AS A COLLECTIVE EXPERIMENT FOR DEMOCRATIC EDUCATION THROUGH A COMPLEXITY LENS

BOOK I

Henriette Bastrup-Birk

Dissertation offered to obtain the degree of Doctor of Educational Sciences (PhD)

Supervisor: Prof. Dr. Danny Wildemeersch

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TO MY DEAR FRIEND LINDA

SUMMARY

Starting from a general concern about our present socio-ecological predicament, the present thesis pursued two main aspirations. The first was to contribute to the way democratic education is thought about in the context of collective experiments. The author was particularly interested in gleaning insights regarding conditions propitious for bringing about significant shifts in ways of thinking about and responding to intricate and uncertain sustainability issues. Drawing on a conception of democratic education, revisited in the light of Rancière and of the two complexity strands of emergence and enaction, she constructed a heuristic framework tentatively linking the three concepts of interruption, pedagogic subjectivation and bifurcation.

The second aspiration was of a practical, issue-oriented nature, as the author wished to apply the heuristic framework she developed to a concrete case. Launched in the late 1990's by a coalition of non-governmental environmental grass roots organisations based in respectively the State of Washington and the Province of British Columbia, the selected case, called the Orca Pass Initiative (OPI), stood out as a promising experiment for democratic education as revisited. Its purpose was to promote the establishment of a marine protected area spanning the Canada/US border to halt the alarming decline of marine species and the degradation of marine and coastal habitats in the Inland Sea known as the Salish Sea. Through her empirical research, the author hoped to generate insights of value for practitioners in the Salish Sea Region - as well as elsewhere - seeking to address the challenging issue of sustainable governance of sea-basins shared by several countries. Since the OPI offered an opportunity for indigenous and Western, science-based perspectives to rub shoulders, she hoped in

particular to highlight promising potentialities that might result from bringing together distinctively different ways of thinking and doing.

Equipped with the heuristic framework she developed, the author embarked on a proto-exploration of the OPI. Insights reaped from this inquiry led to the tentative conclusion that while, even in its heyday, the OPI did not bring about what she would consider *radically* novel ways of thinking about and carrying out governance of marine commons, her analysis nonetheless suggested that the vision that informed the OPI underwent qualitatively significant shifts over time with respect to ethics and shared governance across the border. Since the analysis also suggested that representatives of Coast Salish Nations emitted messages with significant interruptive and differentiating potential during transboundary meetings and fora relevant to the OPI, she felt able to claim that the OPI had nonetheless made noteworthy moves in the direction of embodying a space for democratic education 'new style'.

The empirical exploration furthermore brought in its wake insights of theoretical relevance regarding educational processes embedded in informal, collective experiments. These insights pertained, among others, to the potential of such spaces to act as 'hatcheries' for fresh thinking about our relations to each other and to the more-than-human world, for reframing the dissensus and the perennial tension between distinctiveness and interconnectedness, between difference and construction of a common cosmos. Other relevant insights pertained to the role of external pedagogical interventions versus largely self-driven efforts to push back limits as well as to implications that, relinquishing of the conventional distinction between process and outcome, might have for the way education is thought about. The research arguably also brought a conceptual and methodological contribution as well as insights of relevance for the field of practice. Lastly, it identified a set of fresh questions for future research to address.

SAMENVATTING

Met als uitgangspunt een algemene bekommernis omtrent onze huidige sociaal-ecologische probleemsituatie, had deze thesis twee belangrijke aspiraties. De eerste was bij te dragen tot de reflectie over democratische vorming binnen de context van collectieve experimenten. De auteur was vooral geïnteresseerd in het verzamelen van inzichten inzake de voorwaarden die nodig zijn om betekenisvolle veranderingen teweeg te brengen in manieren van denken over, en het geven van antwoorden op ingewikkelde en onzekere duurzaamheidskwesties. Vertrekkende van een concept van democratische vorming dat een nieuwe invulling kreeg onder invloed van Rancière en van twee noties uit de complexiteitstheorie, te weten 'emergence' en 'enaction', ontwikkelde ze een heuristisch kader waarbij de concepten van onderbreking, pedagogische subjectivering en bifurcatie op voorlopige wijze aan elkaar werden gekoppeld.

        De tweede aspiratie was eerder praktisch en toepassingsgericht van aard, in de mate dat de onderzoekster haar heuristisch kader wilde verbinden met een concrete casus. In de jaren negentig lanceerde een coalitie van niet-gouvernementele basisorganisaties, respectievelijk in Washington State en in de provincie van British Columbia, het 'Orca Pass Initiative' (OPI), dat zich aankondigde als een beloftevol experiment van democratische vorming 'nieuwe stijl'. De bedoeling ervan was de inrichting te bepleiten van een beschermd maritiem gebied op de grens van Canada en de Verenigde Staten, teneinde de alarmerende terugval van mariene soorten en de degradatie van zee- en kusthabitats tegen te houden, in de binnenzee die bekend staat als de 'Salish Sea'. De auteur hoopte, met behulp van empirisch onderzoek, inzichten te ontwikkelen die waardevol zouden zijn voor de betrokkenen bij de Salish Sea – maar ook elders – waarbij de uitdagende kwestie van het duurzaam beheer van zee-bekkens die zich in veel landen aandient zou

worden aangepakt. Aangezien het OPI kansen bood dat westerse, op wetenschap gebaseerde, en inheemse kennis elkaar konden inspireren, hoopte ze in het bijzonder de beloftevolle mogelijkheden in beeld te kunnen brengen, van het contact tussen uiteenlopende manieren van denken en van handelen.

Met behulp van het door haar ontwikkelde heuristisch kader begon ze met een proto-exploratie van het OPI. Inzichten die ze afleidde uit dit onderzoek brachten haar tot de voorlopige conclusie dat, zelfs tijdens de hoogdagen, de OPI niet resulteerde in wat zij beschouwde als *radicaal* vernieuwende wijzen van denken over en het realiseren van het beheer over de 'marine commons'. Niettemin suggereerde haar analyse toch dat de visie die ten grondslag lag aan het OPI kwalitatief significante veranderingen heeft ondergaan inzake aspecten van ethiek en van gemeenschappelijk, grensoverschrijdend beheer. Aangezien de analyse ook duidelijk maakte dat de afgevaardigden van de Coast Salish Naties, tijdens de grensoverschrijdende bijeenkomsten en fora die verband hielden met het OPI, boodschappen uitstuurden met significant interrumperend en differentiërend potentieel, vond ze voldoende aanleiding om vast te stellen dat het OPI toch op noemenswaardige wijze had bijgedragen tot het ontwikkelen van een ruimte voor democratische vorming 'nieuwe stijl'.

De empirische verkenning bracht verder ook nog inzichten over de theoretische relevantie van vormingsprocessen als onderdeel van informele, collectieve experimenten. Deze inzichten hadden onder meer betrekking op het potentieel van dergelijke ruimtes om te functioneren als 'broedplaatsen' van vernieuwend denken over onze relaties met elkaar en met de méér-dan-humane wereld, van het geven van nieuwe betekenissen aan dissensus en aan de spannende relatie tussen uniciteit en verbondenheid, tussen verschil en de constructie van een gemeenschappelijke cosmos. Andere relevante inzichten hadden betrekking op de rol van externe pedagogische

interventies, in contrast met overwegend zelfsturende inspanningen om de grenzen te verleggen, alsook op de effecten van het opgeven van het vertrouwde onderscheid tussen proces en product voor de wijze waarop we over vorming nadenken. Het onderzoek leverde ook een bijdrage op methodologisch en conceptueel vlak, alsook inzichten voor de relevantie ervan voor de praktijk. Tenslotte formuleerde het ook enkele nieuwe vragen voor verder onderzoek.

ACKNOWLEDGEMENTS

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List of abbreviations

BC: The Province of British Columbia
CS: Coast Salish
FSJ: Friends of the San Juans
FNs: First Nations
GSA: Georgia Strait Alliance
MPA: Marine Protected Area
OP: Orca Pass
OPI: Orca Pass Initiative
OPISA: Orca Pass International Stewardship Area
P4PS: People for Puget Sound
S&S Coalition: Sound and Straits Coalition
TEKW: Traditional Ecological Knowledge and Wisdom
TBMPA: Transboundary marine protected area
WA: Washington State

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INTRODUCTION

(i) Rationale for undertaking the research

The starting point for our research project was the Millennium Ecosystem Assessment carried out between 2001 and 2005 at the request of the United Nations Secretary-General Kofi Annan. The purpose of this study was to assess consequences of ecosystem change. It was to analyse options available for enhancing conservation and sustainable use of ecosystems while contributing to human well-being. Pointing to continued decline in biodiversity and alarming degradation of habitats throughout the planet, it deemed this all the more worrisome that human communities continue to depend heavily on healthy natural systems, processes and functions for lasting well-being. It also noted that, despite the biosphere's capacity to evolve and adapt to new conditions, and despite remarkable technological breakthroughs, there is a real danger that continuing on the present course of economic growth as an end in itself might eventually push biosphere degradation beyond a threshold compatible with human survival[1].

The State of the Planet Declaration entitled "Planet under Pressure: New knowledge towards solutions", issued in the context of Rio+20[2] (2012), confirmed this sombre diagnosis. It pointed out that "(W)ithout urgent

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[1]While this report obviously made a lasting impression on us, informed by Latour's distinction between 'matters of fact' and matters' of concern' (2004b), where the former are seemingly indisputable while the latter remain subject to debate, we were also aware that, as with any other issue characterised by uncertainty, issues such as those evoked by the Millennium Assessment report and similar studies are far from uncontroversial. As the on-going debate about climate change makes abundantly clear, the borderline separating fact from judgment, science from ethics, exact science from humanities and means from goals remains deceptively thin. Doubt thus persists in several quarters about the soundness of alarmist projections. Likewise, voices are heard denying gloomy outlooks for the planet on the grounds that technological solutions can be found to most of our problems.

[2] http://www.planetunderpressure2012.net/pdf/state_of_planet_declaration.pdf

action, we could face threats to water, food, biodiversity and other critical resources: these threats risk intensifying economic, ecological and social crises, creating the potential for a humanitarian emergency on a global scale." At the same time, however, emphasising increasing interconnection and interdependence of economic, social, cultural and political systems worldwide, it underlines the potential this interconnectedness offers for new ideas to spread quickly, creating momentum for a major transformation in the way humanity envisions its role on this planet.

As the recent Occupy and 'Los Indignados' movements illustrate - along with transboundary environmental activism, notably in relation to climate change - formal policies presented as democratically-grounded responses to social and ecological problems are increasingly contested. All too often, the logic by which governments and their teams of experts are abiding is found inappropriate for addressing intricate and uncertain problems[3].

Our own experiential background played an important role in directing our gaze to certain issues. More than 10-year involvement in multi-agency endeavours which addressed threatened marine and terrestrial areas brought us to witness examples of top-down, often centralised, planning by governmental agencies and their teams of experts with little, if any, citizen involvement at the stage of conception. Study tours conducted in North America in the same time span made us increasingly sceptical about public consultation as part of consensus-building strategies. We thus witnessed proposals presented as initial ideas but which, in effect, were closer to pre-sealed decisions. We were at times left with the impression that a number of

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[3] Yet, for all their international outlook and their recognition that the scope of the challenges they are addressing, more often than not, extends beyond national boundaries, these movements tend to pay less attention to how these boundaries divide up ecologically coherent units and, particularly when associated with tight border controls, get in the way of citizens in neighbouring countries joining forces.

decisions, taken in the wake of public consultation, were in effect closer to pre-sealed decisions. Against this backdrop, we increasingly wondered if citizen-driven initiatives within which unconventional ways of thinking could come to expression as safely and freely as possible, and where distinctively different perspectives could be brought to a shared problem, might be shown to be more propitious for generating novel ideas and options for action, in the same stride breathing new life into the practice of democracy. We wondered in particular if initiatives with a transboundary scope might act as laboratories for experimenting with ways of tackling borderless socio-ecological challenges.

In line with the interest that KU Leuven's Laboratory for Education and Society has developed over recent years in exploring connections between different epistemologies, we shall contend that moving towards a more just and sustainable world requires harnessing a multiplicity of worldviews and ways of knowing. No longer can we afford the luxury of dismissing perspectives, which do not fit into a familiar or adhered-to mould. Instead there is, we claim, an acute need for enlarging frames of reference so as to leave room for a diversity of approaches into which we might tap as we face unprecedented challenges. What is more, we also need to be attentive to the creative potential of friction between diverging and even antagonistic modes of knowing and consider how they might be brought into productive conversation.

(ii) Formulating the central research question

Our attention was drawn to one particular informal, grass roots-driven initiative known as the Orca Pass Initiative (henceforth abbreviated to OPI). This initiative offered, among others, an opportunity for indigenous and Western science-based perspectives on governance of marine commons to rub shoulders. Informed by a Rancierian outlook on democracy, we began

by asking whether this initiative could be shown to enact a democratic space which not only brought indigenous perspectives in "from the cold" but also provided a platform for their challenging principles and practices informed by a logic differing starkly from their own. As we looked more closely at Rancière's notion of democracy, we found that it did not limit itself to individuals or groups stepping forward to express objections to a certain socio-political order and to the logic underpinning it. It also pointed to ways in which "new modes of political construction of common objects and new possibilities of collective enunciation" could be called forth (Rancière, 2009a). Directly derived from Rancière's thinking about democracy, Biesta's and Simons' and Masschelein's unconventional conception of democratic education spoke to us by establishing the clear linkage between education and experimentation calling forth new ideas, concepts and options for action. This seemed a far cry from conceptions of education implying internalisation of pre-set norms, reproduction of established knowledge and acquisition of particular competencies and skills. This focus on newness in turn directed our attention to two other, relatively recent strands of thinking about education. Both informed by a complexity perspective, these strands were centred on the notions of emergence and enaction. Bringing together these strands and a Rancierian conception, we developed a heuristic framework built around and linking the three key concepts of interruption, pedagogic subjectivation and bifurcation. Through this framework we hoped to throw light on what was to become our central research question: to what extent could the OPI be shown to have fulfilled the potential we tentatively ascribed to it for embodying a space for democratic education, that is to say, a space that witnessed questioning of a prevailing logic as well as emergence of radically novel visions regarding a matter of public concern? Through this effort we not only hoped to anchor an unconventional notion of democratic education to a concrete case, hence putting to the test its relevance and

usefulness in an empirical context. We also hoped to generate insights of practical value for practitioners - mainly in the Salish Sea Region but possibly also elsewhere - currently seeking to address the issue of sustainable governance of sea basins shared by several countries.

(iii) How we dealt with the central question

In order to reply to the question at the heart of our research, we began by breaking it down into four research questions derived directly from our heuristic framework. Pertaining to the OPI as a whole, the first research question asks to what extent the vision that emerged from this initiative could be shown to have undergone one or several bifurcation events. Pertaining to messages expressed by Coast Salish (henceforth shortened to CS) representatives during transboundary meetings, the second and the third research question ask, to what extent these messages could be ascribed interruptive or differentiating potential. The fourth research question asks if some, if not all, of these messages could reasonably be argued to have afforded radically novel shifts in the successive visions that emerged from the OPI.

In an attempt to reach at least tentative replies to these research questions, and in line with the experimental attitude we adopted throughout the research process, we opted for the format of a proto-exploration rather than a fully-fledged study of the selected case. Accordingly, we subjected a deliberately limited body of documentary material to a seven-step analytical procedure, combining recursive logic with the open-endedness advocated by the logic of emergence. This procedure also borrowed from hermeneutic phenomenology and Geertz's interpretive ethnography, both of which we deemed compatible with complexity's epistemological principles.

In accordance with the complexity perspective to which we anchored our heuristic framework, the overall conclusion reached with regard to the central research question could only be tentative, partial and provisional. A preliminary understanding suggesting that what we saw emerge from the OPI could hardly be considered radically novel concepts, ideas and options for action tempted us to conclude that this initiative did not actualise the potential we ascribed to it as a space within which a democratic education process unfolded. However, further reflection prompted us to nuance somewhat this initial conclusion. It invited us to argue that both the intermediate and the ultimate vision that emerged during the OPI's heyday seemingly displayed sufficiently consistent and qualitatively significant shifts, notably with respect to ethics and shared governance across the border, so as to suggest that the OPI was well on its way to engendering visions breaking for good with prevailing ways of addressing marine depletion and degradation. It also led us to speculate that, had favourable 'internal' and 'external' contextual conditions continued and had CS Elders opted for engaging more consistently in the OPI, this initiative might have come to illustrate, within a reasonably short time span following the period we studied, a space within which a full-blown democratic education process gave rise to radically novel perspectives and options for action.

(iv) How we organised the thesis report

Two separate books make up this thesis report. Containing the main report, **Book I** is divided into seven chapters. After reviewing literature relevant to the concerns that prompted our research project, Chapter 1 offers an impressionistic picture of the OPI and provides an introduction to features of the Coast Salish culture particularly relevant for the issue of governing marine commons. Chapter 2 begins by presenting a revisited conception of

democratic education derived from Rancière's ideas on democracy. Turning next to the two complexity strands of emergence and enaction, it discusses how their take on education might fruitfully complement the Rancierian conception. This discussion places the three concepts of interruption, pedagogic subjectivation and bifurcation at the core of a heuristic framework to be applied to the selected empirical case.

Prior to investigating the case study *per se*, implications of conducting empirical inquiry from a complexity-informed attitude are brought to light. Chapter 3 thus discusses meta-theoretical principles underlying this attitude while Chapter 4 outlines a research strategy and methodology arguably abiding by these principles. Chapter 5 outlines how we went about dealing with each of the four research questions we derived from our heuristic framework. It next presents understandings relative to the first three research questions that resulted from applying the seven-step analytical procedure described in Chapter 4. Moving on to RQ.IV, it discusses the extent to which these understandings warrant the linkages that our heuristic framework tentatively established between interruptive acts, moments of pedagogic subjectivation and shifts that might be understood to denote a bifurcation event. Lastly, it discusses the overall conclusion we derived from the proto-exploration. Chapter 6 reviews challenges and constraints encountered during our inquiry. After a summary of the main landmarks of the research process, Chapter 7 is dedicated to presenting and discussing the contribution that our research arguably brought to the theoretical conversation on democratic education, notably in the context of intricate socio-ecological problems, as well as how it might have brought useful methodological and conceptual insights as well as some worthwhile clues for the attention of practitioners. It also raises a few fresh questions that our research effort invites future research to address.

In addition to providing an overview of initial and contextual conditions we deemed relevant for respectively the early, the intermediate and the ultimate vision that emerged from the OPI as well as for perspectives adopted by Coast Salish representatives, **Book II** presents the minute demonstration of how the selected primary sources were processed via the seven-step analytical procedure. Besides displaying our primary sources, the annexes enclosed in this book illustrate how, under Step 2 and 3 respectively, we processed the text segments we retrieved through thematic framework analysis and how we commented on them. This book also demonstrates in detail how we went about gauging shifts in the intermediate and ultimate visions, in preparation for our attempt to provide a credible reply to RQ.I as well as how we dealt with the other three research questions. It thereby provides background information for readers wishing to check in detail how we arrived at the understandings from which we drew a tentative conclusion regarding our central research question.

CHAPTER 1: BACKGROUND FOR RESEARCH AND INTRODUCTION OF EMPIRICAL CASE

Introduction

In this first chapter we begin by presenting the scholarly readings germane to the concerns that prompted our research project. Next we introduce the empirical case that we singled out as a promising illustration of how a citizen-based, transboundary initiative might call forth novel ways of thinking and novel courses of action in relation to a socio-ecological matter of public concern. As we introduce our case, we devote particular attention to perspectives likely to be held by Coast Salish (henceforth abbreviated to CS) protagonists who directly or indirectly engaged with the OPI. At the end of this chapter we had a first go at formulating broad research questions that would guide our research.

1.1. Review of relevant literature

The literature we reviewed appeared to warrant our perception that citizen-driven, local initiatives, instigated outside the spheres of higher-order governments, might embody spaces with potential for bringing about novel ways of thinking and doing in relation to intricate and uncertain matters of public concern. We thus found a number of authors to point to the potential in that respect arrangements and practices outside official governmental spheres. In his discussion of late modern politics, Beck, Giddens, and Lash (1994) elicits fora - that he dubs 'sub-political' as they unfold outside the political and corporatist system - as frontrunners for exploring the "themes of the future" (1994, p. 19). For him, the sub-

political sphere offers an opportunity for the civil society to "take its concerns into its own hands in all areas and fields of action of society" .(1997, p. 104). It marks the birth of a "self-creation society starting from *below* (1994, p. 23) as it 're-invents' everything, 'except that it does not know how, why and with whom" (1997, p. 103). He also expects sub-political agents, often grass-roots-oriented, extra-parliamentary, untied to classes or parties and organisationally or programmatically diffuse, (1994, p. 19) - and hence less subject to bureaucratic and political constraints - to have more latitude for responding as circumstances require.

Osberg (2010b, p. 164) echoes this when arguing that experimentation is easier to conceive in the absence of obligation to make decisions about the future. Heifetz (1994) makes a similar proposition when he suggests that fora with no formal authority offer more room for asking harder questions. More specifically, Ostrom's work (1990) identifies local communities oriented towards sustainable use of natural resources as demonstrably capable of instituting new distributive practices by inventing their own modalities for governing the commons. She also found that voluntary regimes often proved more adequate than top-down regulation. In an article she co-authored (Dietz, Ostrom, & Stern, 2003), she points out that new adaptive rules are best devised through experimentation in small-scale ecologies with regular face-to-face communication and dense social networks. Particularly with respect to sustainability issues fraught with uncertainty, Bavington (2002) sees a specific role for initiatives in which practices striking a reasonable balance between human and non-human interests, while remaining attuned to the unpredictability and complexity of biophysical processes, can be experimented. Such practices would replace the top-down, expert-driven governance practice he calls 'managerial ecology'. The latter practice often

posits unpredictability and complexity as 'problems' to be reduced and pays little attention to ethical considerations.

Evoking the twin mottos of "We are the ones we have been waiting for" and "We need to be the change we want to see", Žižek (2010) too expects the citizenry to be able to bootstrap itself into inventing and experimenting new rules and into taking the lead for exploring new pathways without waiting for governments to find 'solutions'[4]. He insists that the most pressing issue is to redefine the terms in which problems are formulated and to elaborate concepts allowing fresh questions to be raised. For him, only by developing a new language incomprehensible under the prevailing logic can proposals making a genuine difference be devised[5].

Whilst more often inspired by rebellious or anti-establishment acts performed by bold individuals rather than by collectives or social movements[6], what attracted us in Rancière's thinking was the anti-authoritarian, anti-hierarchical axiom at its core. This axiom posits that, regardless of background, origins or other attributes, each and every one of us is equally endowed with intelligence allowing us as individuals (or as a group), on equal footing with others, to speak out against the existing socio-political order (or police[7]) and to come up with proposals as to how

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[4] These considerations and those that follow are also based on personal notes taken during a lecture that Žižek gave in Brussels in November 2011.

[5] Following Bohm (1992), we would be inclined to add that, for such language to be brought into the world, parallel endeavours are required to open the locks limiting our thought processes and hence our capacity for invention.

[6] An example of such bias is found for example when he writes (1998, p. 93): " This is also to say that there is no collective power independent of the power through which individuals pull themselves out of the infra-world of obscure noises."(*our translation*). We nonetheless understand his axiom of equal intelligence also to apply to collectives and groups.

[7] For Rancière the police is the order (or set of rules) that defines the allocation of ways of doing, being and saying and that assigns a particular place and task to those included in a given society" (1999, p. 29). It as an order "of the visible and the

to improve the current state of affairs (Rancière, 2006). The axiom of equality posits the possibility for anyone to raise her voice, engage in public affairs and contribute to redrawing the common world without leaving it to others to make things happen (Ruby, 2009, p. 96). This thinking invites approaching spaces in which the citizenry challenges existing practices and imagines new options for governing the commons as potential laboratories for democracy. Rancière goes to great lengths to convince us that " the consensual self-regulation of the multitude" or " the reign of a sovereign collectivity based on subordinating the particular to the universal" (Rancière, 2010, pp. 56-57) has nothing to do with what democracy ought to stand for. By extolling inclusiveness, a consensual approach to democracy on the contrary transforms the political community into an ethical community gathering, "a single people in which everyone is supposed to be counted" (Rancière, 2010, p. 189). This is all the more problematic that the order springing out of consensus divides the population into pre-given shares, places and functions (Simons & Masschelein, 2010, pp. 591-592).

By contrast, as he defines democratic politics in terms of modes of acting that question arrangements or ways of thinking imposed by the existing socio-political order, Rancière (2003) makes dissensus the hallmark of democracy. For him, democracy remains an empty concept as long as it is not enacted and verified through acts of contention on the part of those with hitherto little say in "taking care of common problems and the future" (Rancière, 2010, p. 58). In other words, democracy comes to expression - or is verified - during moments where interruptive acts help redraw the boundaries that separate those complying with the rules dictated

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sayable that sees that a particular activity is visible and another is not, that this speech is understood as discourse and another as noise."(op. cit.*)*

by the existing socio-political order (or establishment) from those whom an entirely different logic prompt to call these rules into question (Rancière, 1998). Rancière's notion of dissensus thus implies emergence, within a determined, sensible world, of something heterogeneous to it, that is to say, a way of acting and being that cannot be conceived within its logic and, in that way, does not yet exist as a possible way of being and speaking (Biesta, 2010, p. 12). Having nothing to do with conflict of interests, preferences and specific identities within a given collective (Simons & Masschelein, 2010, p. 592), dissensus comes to expression through *breaks* between what certain categories of people are expected to see, think and say and what they actually come to see, think and say. As he elaborates on Rancière's thinking, Biesta (2011) gives further clues regarding how 'democracy' can be understood. Neither a regime nor a state, democracy is an open-ended experiment involving ceaseless re-invention through courageous and imaginative acts.

Others insist on the democratic potential of heterogeneous spaces in which matters of public concern can be addressed through constructive interaction between diverse perspectives and types of knowledge, each contributing to creative responses to changing conditions (Fenwick, 2003). Funtowicz and Ravetz (1993, p. 754), for their part, point at peer communities encompassing multiple cultural perspectives and worldviews within which an unconventional form of science (that they call 'post-normal') can be practised in direct support of the democratic value of diversity or pluralism. This practice, they argue, would interrupt the hegemony of a single worldview based on a particular vision of science and, by extension, of what constitutes valid and legitimate forms of knowledge. Their work found local people to imagine solutions and reformulate problems in ways that accredited experts did not find 'normal'

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within their professional paradigms. When, so their reasoning goes, diverse knowledge bases are placed in a broader context allowing a plurality of equally legitimate perspectives to be harnessed, better justice can arguably be done to multi-dimensional and multi-faceted phenomena and processes. _ENREF_124 echoes this when he proposes that, particularly with regard to uncertain sustainability issues, time has come to welcome a multiplicity of ontologies (or modes of existence) and to consider less familiar forms of knowledge as just as legitimate as those generated by conventional, 'modern' science. Haggan et al. (2006, p. 9) goes even further by suggesting "… it is the synergy (…) when different knowledge systems communicate after decades of silence or conflict that leads to quantum jumps in knowledge". For Bouwen and Taillieu (2004), spaces, where protagonists holding different perspectives rub shoulders in a sustained manner, can help birth novel relational qualities, notably in the form of recognition of interdependence. As they provide a container within which sustained interactions between different perspectives can help unveil hitherto unsuspected complementarities, these spaces can be perceived as offering a fresh model of democracy where 'otherness' no longer is something to be 'integrated' or 'reduced' (Bouwen & Taillieu, 2004, p. 147). Since 'otherness' is now considered a value in itself, the tension between interdependencies and difference is allayed.

All in all, the writings just reviewed seem to a large degree to vindicate our experience-based decision to give special attention to citizen-driven initiatives as promising fora for experimenting with and developing novel democratic practices. We nonetheless noticed that most of them only pay scant attention to the transboundary dimension. If Bouwen and Taillieu (2004) are indeed attentive to settings in which different levels and scales of agency are represented, they appear to give less attention to settings

spanning national borders. So does Rancière [8] as well as the other contributors to fresh thinking about democratic practices. This motivated us all the more to look for an empirical case which, in addition to presenting seemingly promising potential in terms of citizen-based experimentation informed by different worldviews, also had the peculiarity of spanning an international boundary.

1.2. Brief presentation of the context of the Orca Pass Initiative (OPI)

The case of the OPI caught our attention on at least two counts. First, its scope was clearly transboundary since it addressed a marine area, bisected by the Canada/US border, which came to be called the Orca Pass International Stewardship Area[10] - henceforth abbreviated to the OPISA - (*fig. 1*). This area was located at the heart of the Inland Sea, along the North American continent's northwestern coast, formed by Puget Sound, the Strait of Juan de Fuca and Georgia Strait that used to go under the composite name of the Puget Sound/Georgia Basin but which, since end 2009 [11], is officially called the 'Salish Sea'. The area of interest encompassed most of the San Juan archipelago in Washington State /US

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[8]An exception is perhaps Rancière's allusion to the need to contemplate extending the figure of the demos beyond the stage of the nation-state in order to "meet the demands of a time when politics must be thought in cosmopolitan terms" (2010, p. 61) Another notable exception that springs to mind is Arturo Escobar's notion of transnational meshworks forming part of the alter-globalization movement. http://p2pfoundation.net/Alterglobalization_Movement_-_Meshwork_Aspects - consulted April 4th, 2013.

[10] This designation reflects the observation that pods of mostly resident orcas (or killer whales) use the straits and passages included in the OPISA for their seasonal migration.

[11] Even if it was not officially recognised prior to the US and Canadian Geographical Names services' formal decision in November 2009, for the sake of simplicity, we settled for this appellation throughout our inquiry since it was already used informally at the time of the OPI.

(henceforth abbreviated to WA) and the southern Gulf Islands in the Province of British Columbia/Canada (henceforth abbreviated to BC). As shown in *fig. 2*, it covered most of the shared waters linking the Juan de Fuca Strait and the northern portion of the Puget Sound to the Strait of Georgia.
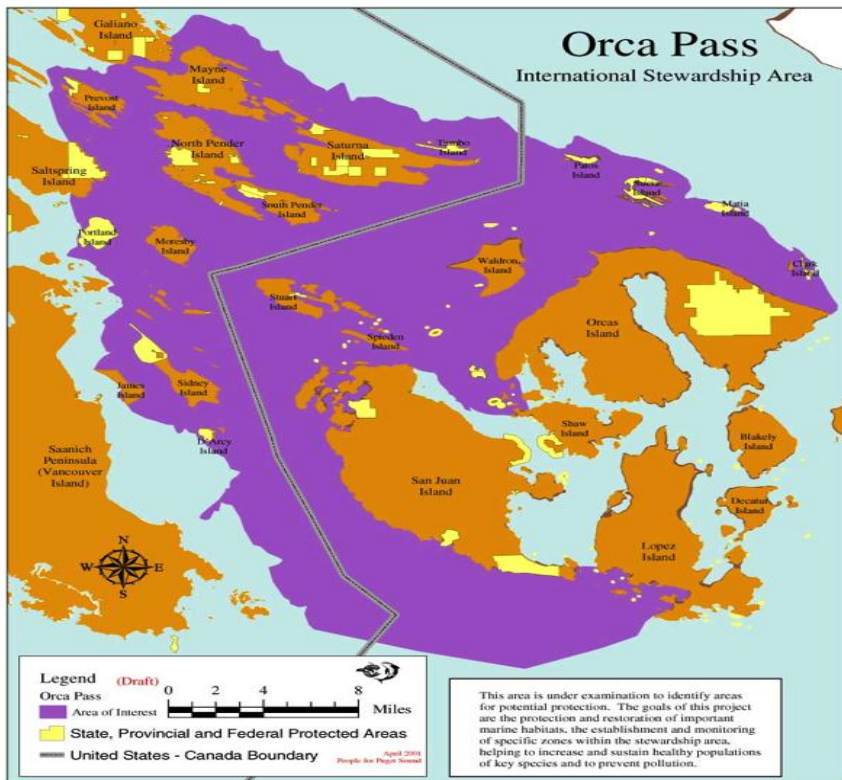
Fig. 1: The OPISA
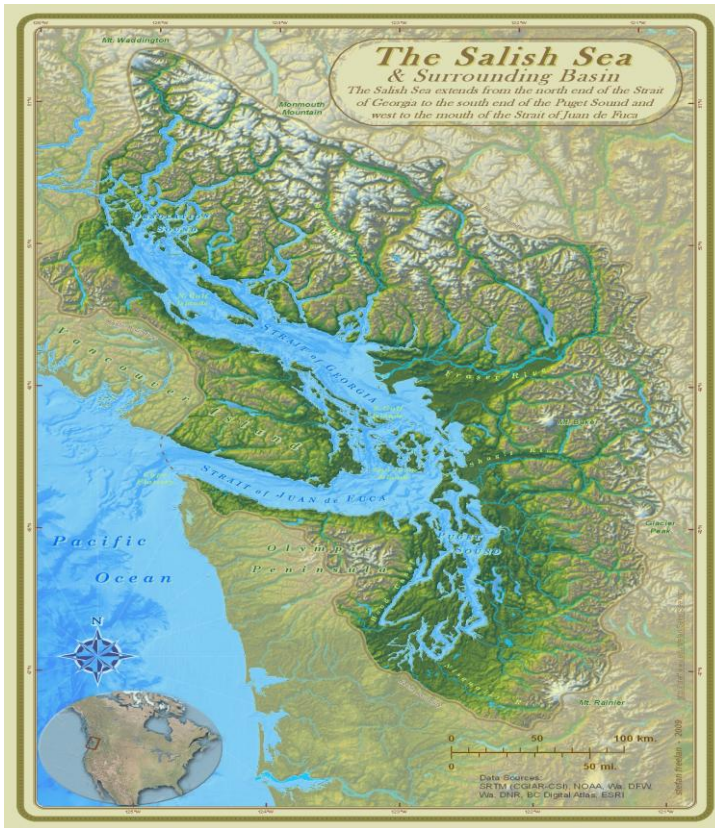
Fig.2: The Salish Sea[12]

The Salish Sea itself mixes water from the Pacific Ocean with fresh water from a dozen major rivers, notably the mighty Fraser (BC) and Skagit rivers (WA), as well as from hundreds of smaller rivers streaming down from the Coastal Range in BC, the Cascades in WA as well as from the mountain range on Vancouver Island and on the Olympic Peninsula. Combined with other oceanographic processes, tidal movements and wind-driven surface currents favour exchanges of biota, sediments and nutrients.

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[12] Courtesy Stefan Freelan, WWU, 2009,
http://staff.wwu.edu/stefan/salishsea.htm

This prompts scientific studies to describe the Salish Sea as one of the world's biologically richest estuaries. Yet, already in the early 1990's, evidence gathered through methods peculiar to marine conservation biology and ecosystem science pointed to an alarming situation. Sensitive marine and near-shore habitats as well as populations of resident orcas, harbour porpoises, different species of wild Pacific salmon, ground fish (especially rockfish), shellfish and clams were reportedly exposed to unsustainable pressure, notably under the effect of the explosive urban growth that the coastline bordering the Salish Sea witnessed during these years[13]. As trade with China gathered momentum shortly after, heavy vessel traffic added to the pressure.

Second, since the OPI's *raison d'être* was to contribute to halting and possibly reversing species decline and habitat degradation in the Salish Sea, this initiative seemed particularly relevant for exploring possible options in terms of the somewhat neglected but, to us, critically important field of governance of marine commons[14].

One might legitimately wonder why we selected a case located in North America rather than in Europe for example. In reply we would point out that, to this day, the former part of the world seems to display a solid

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[13] The region thus came to contain the major population centres of WA and BC. Among these, Greater Seattle and Greater Vancouver are by far the largest, with close to 3,5 (2005-census) and 2 million inhabitants (2001-census), respectively.

[14] Even though Ostrom does not seem to offer an extensive definition of 'commons', we nonetheless deliberately kept this term. We surmised that what she meant by this term was not far from how Nespor (2008, p. 487) and Bollier (2002) understood it, namely the assemblage of natural assets such as air, soil, fresh and salt water as well as wild fauna and flora that are not privately owned and that humans therefore hold in common or in trust on behalf of themselves, of future generations of human as well as of non-human beings and life-sustaining processes. As for the term 'governance', one important reason for retaining it was is that we considered it less charged than 'management'. Both for indigenous peoples (Greskin, 2006) and for certain ecologists (Bavington, 2002), the latter term remains deeply problematic.

and longstanding tradition for citizen and local community initiatives subjected to little, if any, governmental supervision or public, conditional funding. What is more, in the late 1990's and early 2000's - but also still today - the idea that ecological monitoring and stewardship might best be performed if entrusted to local communities and civic groups remained particularly prominent in the Pacific Northwest (Shutkin, 2000)[15]. This idea originated, among others, from the Quaker belief in ordinary people's capacity to organise themselves and to take responsibility in relation to public matters, as well as in the Danish pastor and philosopher Grundtvig's interpretation of Lutheran doctrine introduced through Scandinavian, and in particular Danish, settlers. This interpretation again highlights the potential of each and every citizen, when infused with a spirit of freedom, cooperation and discovery, to play an active and creative role in shaping society (Abrahamowitz, 2000). Jeffersonian 'small government' doctrine might also have played a role here. All in all, this made North America stand out as a prime location for probing citizen-based potential for inventing new pathways. Lastly, our regular attendance since the late 90's in events pertaining to land use, smart growth and ecosystem management[16] in the Salish Sea region allowed us to familiarise ourselves

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[15] One participant in the interactive session on transboundary marine protected areas held during the 2009 Salish Sea Research Conference clearly gave expression to this stance. For this participant, leadership could come " from various directions and (…) not always from the top down" and "(W)hen looking forward, this idea of citizen engagement is critically important. We cannot rely on governments to keep doing things for us, it is our world, we need to do something as well." (*Personal notes from the session*). It also transpired in a personal communication in the context of a master's thesis (Juthans, 2002), through which one of the OPI's key protagonists was quoted to state " (W)hen citizens lead, governments will follow".

[16]Notably the Cascadia study tour in preparation of the Regional Framework for Northern Ireland, May 1998, the Georgia Basin Network Forum at UBC, Vancouver, May 1999, the Policy Research Initiative the Conference entitled 'Rethinking the line: the Canada-Us border' convened in Vancouver, October

with its institutional, political but also socio-economic, cultural and ecological characteristics. Our regular presence at these events also paved the way for lasting contacts that proved of great value in preparation for our empirical research.

1.3. A few signposts and first impressions

The OPI was instigated in March 1999 by the transboundary Sound and Straits (henceforth shortened to S&S) Coalition. This coalition was founded in 1992 by People for Puget Sound, a non-governmental organisation based in Seattle (WA) and the Georgia Strait Alliance based in Nanaimo on Vancouver Island (BC) - henceforth designated as P4PS and GSA. Respectively- both of which were (and for the GSA still is) grassroots based environmental organisations. More issue- than advocacy-oriented in relation to governmental policies[17], this coalition was initially created in response to a major oil spill and pictured itself as "an effective international citizen action to protect the Sounds and Straits".[18]

When first approaching it, the OPI appeared to us as a kind of nebula made up by a set of concentric circles gravitating around the GSA-P4PS dyad nested at its core and acting as its co-chairs. We attempted to illustrate this in **Annex 1 (Book I)**. This annex also specifies what organisations were members of the S&S Coalition at the time of the OPI.

2000, by the Canadian Policy Research Initiative, the Urban Sustainability Conference, March 2001, the 2003 Georgia Basin/Puget Sound Research Conference, Vancouver, March 2003, the Traditional Ecological Knowledge Conference in Abbotsford, BC, November 2003, and the Georgia Basin/Puget Sound/Salish Sea Research Conferences in 2005, 2007, 2009 and 2011.

[17] Personal communication with former Executive Director for P4PS, October 2011.

[18] P4PS's application to Lazar Foundation, September 14th, 1992.

Annex 2 (Book I), for its part, shows, among others, where a few key Coalition members were - and, for most of them, still are - based.

We understood the OPI's history to be divided into at least three distinct phases:

(1) A gestation phase from March to September 1999 during which an initial core of about ten organisations from either side of the border [19], forming the nascent OPI's Steering Committee, engaged in sketching out key principles and guidelines for the initiative;

(2) A heyday from early fall 1999 to late spring 2003 witnessing intense activity. During this phase, an extensive outreach campaign brought an increasing number of organisations to engage in the OPI and a wide constituency of individuals and organisations on either side of the border to endorse it. Spring 2003 marked the apex of this period as a 'final' recommendation regarding the establishment of the proposed OPISA was submitted to an international Task Force set up under the BC/WA Environmental Cooperation Council, and eventually endorsed by the latter. The OPI hereby presented the advantage of allowing us to catch a glimpse of possible effects of more than three years' experimentation as opposed to sporadic or one-off events.

(3) The third phase, stretching from summer 2003 to summer 2005, marked gradual loss of steam, whereafter the OPI seemingly fell into dormancy.

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[19] Apart from the GSA and P4PS, the organisations making up the OPI's Steering Committee were on the Canadian side, the Living Oceans Society, the Canadian Parks & Wilderness Society, Marine Life Sanctuaries Society, the Underwater Council of BC; on the US side, the organisations concerned were the WA Scuba Alliance, Resources (WA consultancy with links to the Lummi tribe) and Friends of the San Juans (FSJ).

In what follows, we shall go through a number of features that further prompted us to select the OPI as our empirical case:

First, when initially approaching it, this initiative came across as offering a striking example of a vibrant attempt by civil society to devise a novel template for bottom-up governance of marine commons. We were impressed by the amount of energy this initiative mustered, particularly in the first four years of its existence. The sustained and often enthusiastic involvement displayed by grassroots groups seemed all the more remarkable that, barring the GSA and P4PS, few organisations and groups benefited from specific funding for transboundary work, including the travel expenses this work entailed. As a result, many ended up volunteering time and money.

Second, instead of limiting itself to protesting against and resisting practices perceived as unsustainable or outright destructive[20], it appeared to us as an attempt to respond pro-actively to worrisome developments through exploration of new possibilities for action. In so doing, the OPI stood out as an experimental endeavour to translate the concept of a marine protected area (henceforth shortened to MPA), still fairly novel at the time, into a workable approach for marine conservation[21]. From the very beginning, its instigators thus appeared set on creating the first-ever transboundary MPA in North America (Nichols, 2002, p. 16). The OPI therefore seemed promising for exploring how efforts to establish shared principles and modalities for governing marine commons across an international border might give rise to entirely new approaches.

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[20] We are thinking here in particular of the Clayoquot Peace Camp (Walter, 2007) in relation to commercial logging of old growth forests in BC.

[21] Interestingly, for Jentoft, van Son, and Bjørkan (2007), MPAs stand out as promising laboratories for inventing and experimenting novel ways of governing marine commons.

A **third** feature we deemed important was that the OPI did not seem to emanate from any firm mandate or detailed pre-set agenda dictated from outside the non-governmental S&S Coalition. Moreover, barring funding granted in 2000/2001 by the tri-national North American Fund for Environmental Cooperation, the bulk of funds the coalition received came from non-profit foundations. Nor were, as far as we could tell, any facilitators external to the OPI appointed to help it along the way.

Last but not least, recognising that the proposed transboundary MPA would be located in the homeland of a well-organised and articulate indigenous population, i.e. the CS people[22], already very early on, the S&S Coalition had the merit of inviting CS representatives to join discussions regarding the Orca Pass (OP) proposal. Among First Nations (FN) and tribes whose traditional fishing grounds were in part included in the waters of the OPISA were the Lummi, the Tulalip, the Samish and the Swinomish on the WA side and the Saanich Nations and the T'Sooke Nation on the BC side. However we also expected the Tsawwassen and the Semiahmoo Nations, both bordering Boundary Bay, as well as the Hul'qumi'num to

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[22] Anthropologists and linguists coined the term 'Coast Salish' to indicate indigenous peoples sharing experience as members of extended families, as trading partners and as long-standing inhabitants of a distinctive geographical region in northwestern WA and southwestern BC. Although both aboriginal and non-aboriginal scholars have objected to such grouping (Harmon, 2007), government reports, censuses, recorded reminiscences and anthropological studies have shown persisting connections bridging tribal divisions and the political boundary. Even 150 years after this boundary was put in place, tightly knit kinship networks are still, to this day, perceived as crucial for CS culture and identity (Harmon, 2007; Miller, 1996/1997, 2006). They make the whole Salish Sea region stand out as one social continuum (Harmon, 2007, p. 33). Furthermore, despite being increasingly threatened, as tribal Elders with at least one CS language as their mother tongue gradually disappear, CS languages are still central to collective CS identity. While bearing in mind that the CS people is made up by a mosaic of nations with at times differing interests, a good case can therefore be made for looking at this people in a comprehensive way.

take interest in the OP proposal [23] . Attendance of Coast Salish representatives from either side of the border in transboundary meetings convened by the S&S Coalition thus led us to expect that the OP process would illustrate how a distinctively different worldview, and hence distinctively different perspectives regarding governance of marine commons, might have affected strands of thinking about this matter initially informed by Western science and modern rationality. Recalling the emphasis that some of the writings we reviewed put on the potential of heterogeneous spaces for sparking novel ideas and approaches, we saw CS involvement in the OPI as offering an opportunity for exploring the conditions in which contrasting ontologies might be brought not only to co-exist peacefully but indeed to engage in constructive conversation. We saw it as an opportunity for looking further into the question that Bouwen and Taillieu (2004) raised regarding how distinctively different perspectives could be brought together while, at the same time, preserving the distinctive features that each of them presents. In other words, we expected it to offer opportunity for exploring, among others, whether the OPI turned into a space that allowed distinctively different CS voices to propose options for action which, when brought in conversation with options informed by Western science, opened up as-yet-unexperimented pathways for addressing the plight endured by the Salish Sea and its constituent species and habitats.

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[23] **Annex 2** (Book I) shows where FNs and tribes with interests in the area covered by the Orca Pass International Stewardship Area (OPISA) were - and still are - based.

Given such focus, and for the benefit of readers less familiar with the CS culture, we deemed it appropriate to outline briefly [24] characteristic features of the worldview we assume informed, at least in part, the way CS representatives envisioned bringing back the Salish Sea to a healthy status. This overview draws on a selection of writings authored by scholars specialising in indigenous or, more specifically, Coast Salish studies.

1.4. The indigenous/Coast Salish worldview

1.4.1. Ontological and epistemological foundations

For N. Turner, Boelscher, and Ignace (2000), a distinctive feature of indigenous ontology - with, as we shall see shortly, important ethical implications - is a view of the universe or cosmos as a seamless web in which all elements (people, animals, plants, natural objects but also supranational entities) are interconnected through interactive, reciprocal relationships[25].

As far as indigenous epistemology is concerned, Berkes (2008, p. 198) notes that, as a result of observing and monitoring a large number of variables over a long period of time, indigenous ecological knowledge accumulated inter- or, rather, trans-generational memory. As it took notice of new observations and experience, this age-old knowledge, shared

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[24]This outline is obviously far too succinct to do justice to the numerous facets of a very rich culture that displayed striking resilience over time.

[25]We thus heard an Elder at the CS plenary at the 2011 Salish Sea Research Conference declare: "We don't see things as scientific nor like policies. Instead the river is within me. Long before I was human, I was salmon. We are connected to our environment, everything is joined and connected. Our views of things are expressed differently, the salt water runs in my veins." In Latour's terminology (2004b) this worldview makes humans and non-humans co-equals in a common cosmos.

amongst fishers, harvesters and hunters, was constantly updated and iteratively adapted. For Beamer (2009), the attention that indigenous knowledge pays to specific physical localities and their unique conditions[26] further enhances indigenous peoples' capacity to cope with the uncertainty characterising dynamic and complex ecological systems[27]. For Pierotti and Wildcat (2000, p. 1339), as it directs attention to day-to-day changes in local conditions, privileging of the spatial dimension allows for greater openness to new experiences and better adjustment to changing ecological conditions than temporal orientation. Yet traditional knowledge also factors in temporal or seasonal variability. The cumulative and dynamic knowledge gained through experience spanning many generations thus commended seasonal regulation entailing small-scale harvesting of diverse species over the course of the year. Harvesting was also kept flexible so as to adapt to seasonal fluctuations (Haggan et al., 2006)[28].

Indigenous knowledge production and methodology seems to differ from Western science in at least two important respects. First, rather than being numerically-based, the models and the 'data' on which they rely

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[26] Posey (2000) nuances this assertion by pointing out that traditional knowledge is not so much local as universal knowledge expressed through the local.

[27] As Yvonne Thomas-Miller, a Lummi artist and story teller stated in the context of the story of the Salmon women: "(W)e - that is, the Coast Salish tribes and First Nations - continue to adapt and change through each decade of challenges as did our forefathers."

[28] We found Claxton (2003) to offer an interesting example of a traditional system for governing fisheries in which both the spatial and temporal dimensions played a part. At the core of the Saanich society since time immemorial and up to the 1950's when it was outlawed, this system revolved around reef-net fishery. Reef-net fishing locations were typically set in deep, near-shore rip channels where currents and tides predictably guided fish runs (Barsh, 2005). This way, a certain portion of the large salmon runs annually migrating through the waters of Saanich territory could be intercepted on their way to the rivers where they spawned. As Claxton points out, in conjunction with laws that everybody followed and principles such as respect for the salmon and other fish, this technique secured plentiful fisheries for the Saanich people for thousands of years.

are language-based and qualitatively ranked. In that sense, traditional ecological knowledge and wisdom[29] (henceforth short-handed to TEKW) might be seen to use what we would call qualitative research methods to gather and process biophysical data. Not only does this knowledge draw on multiple disciplines (history, geography, ethics, and natural sciences). It also combines collaborative fieldwork, involving acute observations, with storytelling. In the mental models thus constructed, simple causal connections are avoided and hence also systematic generalisations regarding cause-effect relationships. One could therefore say that, where Western science is predominantly nomothetic, the latter tilts towards ideographic approaches. Lastly, unlike Western science that tends to cut up the observed world into discrete variables, hence disrupting the 'continuum of nature' (Bateson & Bateson, 1987), by foregrounding interconnections, indigenous methodology tends to call forth holistic understandings.

1.4.2. The ethical dimension and its implication for governance of marine commons

As Suzuki and McConnell (1999) notes, Western science can never adequately describe indigenous knowledge. In addition to knowledge about biophysical elements and processes, the latter encompasses human experience, consciousness and, importantly, ethics. The literature we perused suggests that CS engagement might have provided an opportunity, next to hard facts, for values and ethics to become more prominent in options for alleviating the Salish Sea's plight. This engagement might for

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[29] We follow here N. Turner et al. (2000) in adding wisdom next to knowledge *strictu sensu.* We hereby wish to signal that, for indigenous peoples, there can be no knowing that does not also include an ethical and even spiritual dimension.

example bring home the message to non-native protagonists that nature does not exist independently of humans and their activities (2000, p. 1334). Pierotti and Wildcat (2000) thus remind us that, from an indigenous point of view, there is no such thing as 'the environment'; nature is a non-fragmentable extension of human society and landscapes are cultural expressions anchored to the physical earth by embedded knowledge. If anything, for indigenous peoples, 'environment' means land and all living things, *including* humans (Posey, 2000). Man is never 'surrounded by nature' but is part of it. Since man is understood to have emerged from the life forms that make up the land, these life forms are his relatives or relations (Salmón, 2000)[30]. For Berkes too (2008), indigenous ethics thus underlines reciprocal relations and interdependence between humans and non-humans. This in turn carries with it at least two implications. First, humans are understood to be able to speak on behalf of non-humans (Sheridan, 2001)[31]. The wordless chorus of rocks, trees and animals is translated into human words conveyed orally through stories and teachings[32]. Second, a person that harms the natural world also harms himself.

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[30] This 'kincentric' ecological orientation transpires in the expression, often used by Northwest Coast natives, of 'all my relations', which also encompasses animals (four-legged, winged-ones, etc.), plants, rocks, land-forms and even tides and winds. Where modern urbanite ecologists see the non-humans as the Other, the indigenous gaze tends to see an alien human as being more so than a local octopus or wolf. (Pierotti & Wildcat, 2000, p. 1336).

[31] Sheridan suggests that 'first nature' expresses itself through myth rather than through logic. Accordingly, speaking on behalf of nature requires re-appropriation of a mythological language.

[32] For Abram (1996, p. 70), "(T)he practice of language among indigenous peoples seems to carry a very different significance than it does in the modern West. (…) (L)anguage functions not simply to dialogue with other humans but also to converse with the more-than-human cosmos, to renew reciprocity with the surrounding powers of earth and sky, to invoke kinship even with those entities which, to the civilized mind, are utterly insentient and inert".

Ethics also lies right at the core of harvesting practices. Pierotti and Wildcat (2000) argue that, where techno-scientific regimes to a great extent rely on technology to make up for species depletion and habitat degradation, TEKW emphasises restraint with regard to use of the commons. Such restraint is not only a matter of prudence[33] but also of moral obligation. For Haggan et al. (2006), the ethics of needs-based harvest imply harvesting the minimum required for food, trade and sale for reasonable livelihood ("You know when you have got enough"), distributing and sharing ("If you get more, give it to your neighbor [sic] who does not have it"), and being "of one heart" (Haggan et al., 2006, p. 13). This ethics in turn prevented the relentless competition for resources that led to the tragedy of the commons (Hardin, 1968)[34]. Customary leaders' prestige or `good name' ultimately depended on sound stewardship and on taking good care of the tracts of land and waters under their responsibility (Suttles, 1987). Favoured by the geographical scope of the CS territory and by the abundance and diversity of species that this territory displayed, ethically-based collective protocols prevented accumulation of resources ("We never stockpiled anything") (Ayers, 2005)[35].

Elaborate social institutions and governance regimes that proved pivotal for securing enduring and plentiful harvests of marine species relayed such protocols (Ayers, 2005, p. 126). Prior to European

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[33]Haggan et al. (2006) quotes an Elder to say " If you are going to treat Mother Earth like that, she can come back on you twice as hard".

[34] This term referred to depletion and collapse of fish populations many places as a result of particular user groups' systematic privileging of short-term economic gains combined with off-loading of long-tem costs and damage to society.

[35] The BC based Hul'qumi'num to a large extent still hold the view that "the ocean is our refrigerator". The ocean will always provide for their needs if they share with each other and treat each other (and the resources) well.

colonisation and throughout CS territory, a regime of nested tenure attributed exclusive rights for individuals, restricted kin-group communities, multi-kin-group villages, or larger groups, to harvest certain locations in defined geographic areas [36]. While concentrating on the Saanich society, Claxton (2003) explains quite well the traditional ownership system. Like family names and history, fishing locations were passed on within the extended family, the core unit in traditional Saanich society. However, instead of families owning particular fishing locations, it was the other way round: the families belonged to the locations. The Elder[37] of the family held the knowledge and history that connected the family to a particular fishing location[38]. It was his responsibility to pass down that knowledge. Exchange was a further social institution whereby wealth derived from ownership of productive fishing locations was re-distributed, either among direct kin and kin-in-law or via potlatches (Suttles, 1987).

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[36] For instance, under traditional provisions for salmon, one particular nation would own the right to one particular watershed, particular tribes within that nation would be in charge of individual rivers, families would look after smaller streams and tributaries and individuals would take care of particular fishing stations. In that sense one might say that, under such regime, it did not make much sense to talk about 'commons'. Yet, what, at face value, might seem close to private ownership and property rights as found in modern societies was, by and large, counter-balanced by the individual's obligation to the larger group to which he/she was affiliated as well as by principles of reciprocity and generosity towards relatives and neighbours.

[37] Far from all Elders were (and are today) elderly. In general terms 'Elder' is used to designate a tribal member with special status within the tribe or FN concerned. To mark such status we shall henceforth write this term's initial with a capital "E".

[38] Barsh (2005) explains that intellectual property formed the basis of CS property law. Without family teachings, a person did not know what estates to claim or how to use them. Without a close kinship connection with the traditional owners of an estate, a person could not acquire the teachings that pertained to it. In this way intellectual property controlled access to all tracts of land and waters in CS law (Barsh, p. 26).

1.4.3. A seamless Coast Salish territory[39]

For all the restrictions to physical mobility imposed upon the CS throughout the 20th century[40], movements according to seasonal rhythms and dictated by ceremonial gatherings remained extant throughout that century and into the next. Some scholars therefore saw CS communities as offering a good example of how arrangements imposed by nation-states could be ignored, resisted or transcended (Harmon, 2007, p. 45). Marker (2011) suggests that traditional ways of life tied to marine life knowing no boundaries, as well as family affiliations and cultural practices, have helped the CS transcend a colonially-imposed border and retain a sense of a borderless, undivided and shared CS territory. Better still, he points to recent efforts aimed at re-imagining native space. He thus notes that, from the late 90's onwards, not only have the CS successfully re-affirmed their collective identity; they have also worked at reviving what historically constituted a socio-cultural pendant to ecological connectivity (Trosper, 2002).

The contributions just reviewed confirm that principles informing an indigenous worldview differ substantially from those informing science-

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[39] The CS themselves refer to the CS territory as 'SQELATSES', meaning "Home" in Hul'qumi'num and Sencoten languages. This territory is generally understood to cover most of the area around Georgia Strait, the Strait of Juan de Fuca, Puget Sound and to extend to the Pacific Ocean between the Olympic Peninsula and Willapa Bay" (Suttles, 1987). Under an altogether different notion of space, territories pertaining to one particular CS nation were bounded by place names expressed in one specific CS language. For instance the traditional Saanich territory spanned well beyond the Saanich peninsula on Vancouver Island (Claxton, 2003, p. 15) as it extended into what are now Washington State waters around the San Juan Islands.

[40] While obviously further strengthened after the Home Security provisions entered into force in February 2003 subsequent to the 9/11 attacks, restrictions to mobility existed long before these provisions were put into place (Miller, 1996/1997, 2006).

dominated, late-modern societies in several respects. First, as it frames land and all living things - including humans- as one seamless web of life, traditional knowledge strips the dichotomy between nature and culture of any meaning[41]. Second, it openly ushers in moral and ethical aspects shunned by Western science under the banner of scientific 'objectivity' (Haggan et al., 2006; Posey, 2000)[42]. Third, as Martinez notes (1994), natives' attitude to what they call 'the land'[43] is diametrically opposite to that espoused by Western ecological sciences. The latter, he suggests, are negatively-oriented as they emphasise restrictions such as fencing in and proscribing use of specific areas, thereby leaving, albeit unintentionally, non-protected areas to their fate. By contrast, barring some taboos and exclusive rights to harvest, natives shun 'hands-off' approaches as well as the notion of preserves permanently set aside (Haggan et al., 2006, p. 91). Since humans carry responsibility for the non-human realm, human occupancy and appropriate use and practices aimed at assisting, enhancing and taking care of natural processes[44] are considered essential for helping land and species thrive (Martinez, 1994, p. 2006). Against this backdrop, it seemed reasonable to anticipate CS representatives who engaged in the OPI to question certain approaches advocated by non-native protagonists. Drawing on their distinctive perspectives, we expected them in particular to help devise unconventional ways of restoring vulnerable or threatened

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[41] In this sense we begin to grasp why Latour insists on the merits of being non-modern as he advocates bringing down the conventional wall between nature and culture, human and non-humans (2004a).

[42] It is precisely for this reason that these authors view indigenous peoples, among whom self-regulating ethics are still extant, as indispensable partners when it comes to renewing ways of governing the commons.

[43] This notion covers the entire landscape including fresh and salt water as well as air.

[44] For instance through clam gardening, transplant of salmon from one watershed to another, cleaning spawning beds and opening sand-blocked river mouths for fish passage.

marine species and habitats. Lastly, we also saw how some scholars pinpointed CS communities as demonstrating how arrangements imposed by nation-states might be ignored, resisted or circumvented. This in turn inclined us to expect CS representatives to play a conspicuous role in conjuring up options for action spanning the Canada/US border.

Summing up

Assuming that distinctively different ways of thinking and knowing may improve odds for bringing about as-yet-unexperimented approaches to governance of marine commons, the question we were keen to explore in the context of the OPI was to what extent this initiative could be shown to have enacted a 'hatchery' for novel concepts, ideas and visions that might still have relevance for decision-makers today and in the future. Accordingly, already at this early stage of our research, two broad questions begged to be addressed:

First, if democratic practices are understood to imply moments during which individuals - and groups - call into question boundaries separating those having a part in the existing socio-political order from those who do not, could the OPI's heyday credibly be argued to include such moments? In other words, did the OPI enact a democratic space that not only brought CS perspectives "in from the cold" but also provided a platform for them to challenge principles and practices informed by a logic differing starkly from theirs?

Second, could the OPI convincingly be argued to enact a scene offering opportunity for distinctively different CS voices to propose options for action which, when brought into conversation with options informed by Western science, opened up as-yet-unexperimented pathways

for addressing the plight endured by the Salish Sea and its constituent species and habitats?

CHAPTER 2: PREPARING FOR OUR EXPLORATION[45]

Introduction

The present chapter presents and discusses a number of concepts we deemed promising for constructing a theoretically-grounded heuristic framework helping us capture and explore transformative dynamics that drove the OPI in its heyday as well as formulate a set of more focused research questions.

2.1. Positioning our conceptualisation effort

While recalling Bohm's warning that theoretical frameworks can easily provide delusion and false comfort (2003, p. 302), we saw at least two advantages in equipping ourselves with such a framework prior to embarking upon our empirical inquiry.

First, we expected it to help us remain lucid regarding the mode of abstraction through which we would approach the OPI. Rather than being blindly led by it, it would help us work consciously with both its strengths and shortcomings (Stengers, 2011)[46]. This consideration seemed all the more important that different modes of abstraction tend to direct attention to different aspects of a given setting and tends to convey different meanings to these aspects.

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[45] This chapter is substantially based on an article co-authored by Bastrup-Birk and Wildemeersch (2013).

[46] In this Stengers seems in agreement with Sayer (2000, p. 136) for whom empirical analysis is never theory-neutral. For him, the theoretical basis informing any empirical study should be made explicit prior to undertaking any field study.

Second, by hypothesising *a priori* certain relationships between a set of concepts, theoretically-grounded conceptual frameworks pave the way for raising meaningful questions regarding the study object. They thereby play an important role in preventing the researcher from getting lost as she steps 'out' into the often messy and treacherous empirical terrain. However, for them to play such a role, careful elaboration of the concepts at their core must first be ensured. Danermark (2002, p. 15) go as far as to argue that no serious social inquiry can eschew preliminary discussion of how the phenomena to be studied will be conceptualised. For these authors, the social world is but a world made up of abstract concepts. These concepts not only enable us to apprehend and describe the social world; they also enable us to perform in it. An important task for any social science project is therefore to revisit, improve, even revolutionise existing abstractions so as to make them better matches for our creative efforts (2002, p. 6). Danermark (2002) furthermore view the conceptualising and the empirical part of a research venture as intimately related. For them, crafting of consistent theoretical language can best be done through the constant shift between the level of abstract conceptualisation and examination of concrete empirical (2002, p. 117).

Against this background, while our ambition did not go as far as inventing entirely new concepts through which the OPI might be perceived, we nonetheless hoped that our conceptualisation effort would somehow contribute to revisiting and expanding existing concepts that we deemed relevant for shedding light on the broad question raised at the end of Chapter 1.

2.2. Elaborating further on Rancière's notion of democracy

In Chapter 1 we briefly presented a few key ideas in Rancière's thinking about democracy and, in particular, the emphasis it put on the potential of individuals - but arguably also groups - to call into question the logic prevailing within particular collectives. This led us to expect that concepts at its core would be relevant for highlighting encounters in the context of the OPI between perspectives informed by a traditional indigenous worldview and science-informed, 'mainstream' ways of thinking. Accordingly, we began by further examining Rancière's notion of dissensus. In the previous chapter we saw that this notion was inseparable from interruption, or more precisely, from moments where certain individuals or groups perform interruptive acts by speaking out against an existing socio-political order and the logic underpinning it, thereby turning into new political subjects. Through such acts, ways of being, saying and acting come to expression that could not be conceived within the hitherto prevailing logic. We understood interruptive acts to manifest in at least two ways: first, as sporadic dissenting acts (interventions, speech, actions, etc.), on the part of those contesting the existing logic, that laid bare arbitrary boundaries separating what is considered visible, audible and comprehensible from what is not; second, as the effects of such acts. As we understood Rancière, he views dissensus - and the confrontation of contrasted logics this notion implies - as the main avenue for pushing back limits and for reconfiguring relationships between those abiding by the rules of an existing order and those that considered these rules to be wrong. As new voices are added to the existing order, that order is compelled to "decompose and recompose the relationships between the ways of doing and of saying that define the perceptible organization of the community"

(Rancière, 1995, p. 40). What is more, as we understood Rancière's thinking, it posits dissensus and the interruptive acts through which it is expressed as paving the way for "new modes of political construction of common objects and new possibilities of collective enunciation" (2009a, p. 72). Elsewhere, welcoming multiple radical discourses (Rancière, 2009b), we found him to welcome exploration of the multiple roads - and their unforeseen crossroads - through which ways of experiencing the visible and the sayable can be apprehended. Since these propositions appeared to us to point to the domain of education, it therefore came as no surprise to us that they inspired several educational researchers to derive from them an original conception of democratic education. As we shall see, the latter in turn appeared particularly promising against the background of our quest for concepts helping us to shed light on the OPI's potential for calling forth novel ways of thinking about governing marine commons.

2.3. Reconceptualising democratic education in the light of Rancière

Inspired by Rancière's thinking, Biesta, Masschelein and Simons all arrive at a fundamentally revisited conception of democratic education.

Biesta (2010) notes that, for Rancière, democratic politics does not depend upon the availability, beforehand, of a particular kind of political subjectivity. For him, when framed as an open-ended, unpredictable experiment (Biesta, 2010, p. 15; 2011), it is the very engagement in democratic politics, which brings about political or democratic subjects. Following Rancière, he understands the process of political or democratic subjectivation[47] as the process through which *new* ways of doing and being

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[47] While Biesta himself uses the term 'subjectification', following Simons and Masschelein (2010), we opted for the term 'subjectivation' initially introduced by

come into existence (Biesta, 2010, p. 13). He thereby clearly endows this process with educational potential. This in turn carried at least six important and partly interrelated implications for how we might henceforth think about democratic education:

First, when, as Biesta proposes (2010, 2011), democratic education is assimilated to a process through which individuals and groups bring into the world interpretations and visions unsettling the configuration of a "field of perception-in-common" hitherto taken for granted (Simons & Masschelein, 2010, p. 597), this entails that democratic education becomes consubstantial with interruptive acts. Accordingly, for spaces to be considered relevant with regard to democratic education, they must display acts whereby individuals or groups step forward to question ways of being, seeing and saying prevailing within the existing socio-political order (Biesta, 2011, p. 5; Rancière, 2010, pp. 38-39). In the case of the OPI, outspoken CS questioning of current ways of thinking about governance of marine commons would count as such acts.

Second, approaching democratic education (or civic learning, as Biesta calls it[48]) as a process of political subjectivation entails leaving behind any notion of democratic education as an instrument for socialisation. In other words this new conception breaks with a notion positing democratic education as a vehicle for conveying a certain stock of knowledge, skills

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Foucault. The main reason for this choice was that, since we later introduced the concept of pedagogic subjectivation, we wished to avoid unnecessary proliferation of terms with the risk of confusion and lack of clarity this might entail.

[48] Somewhat surprisingly, Biesta seems here to reintroduce a notion that he vigorously critiqued in an earlier paper (2005). Underlining that discursive practices about a certain field of activity delimit what can ultimately be done within that field, Biesta argued there that, over the past two decades, the language relating to education has lost ground to a language pertaining to learning. For Biesta, under the latter, learners are typically core actors in educational situations *qua* active constructors of knowledge according to individualistic needs often dictated by market forces.

and values to would-be citizens for the purpose of fitting them into the existing social and political order (Biesta, 2010, p. 13).

Third, following directly from the second implication, distancing oneself from an instrumentally-oriented notion of education implies decoupling democratic education from pre-set objectives. As we now understood democratic education to be linked to an experiment, far from being decidable in advance, what would come out of it - and, in particular, how the challenged order would be reconfigured - was bound to remain uncertain. Transposed to the case of the OPI, this meant that the ways in which possible dissenting messages and/or behaviour on the part of CS representatives affected prevailing modes of thinking among the OPI's instigators could in no way be predicted. This, however, called attention to a question central to any theorising about education, namely, intentionality. To address this question in the light of a Rancierian conception of democratic education, we returned to Rancière himself for a moment. What we read here left us with an impression of ambiguity on his part. On the one hand, we found suspicion of 'spontaneist' acts, notably in relation to revolutionary movements (Ruby, 2009, p. 13;97). Moreover, as it posits the capacity of 'each and everyone' to see what is wrong, Rancière's axiom about equal intelligence suggests the harnessing of conscious and directed reflection that we felt inclined to associate with intentionality. On the other hand, as he refutes any notion of necessity, Rancière describes egalitarian relations and the possibility of interruption they imply as contingent, incalculable acts (Rancière, 2006, p. 97). In the realm of aesthetics - and hence also of politics as he understands it - he underlines that "… the aesthetic cut that separates outcomes from intention (…) precludes any direct path towards the 'other side' of words and images" (Rancière, 2009a, p. 82). From this we inferred that, as a political act, interruption

could not be instigated. Biesta (2011) seemed to confirm such lingering ambivalence regarding the intentional character of interruptive acts. He thus cautiously limits intentionality, or motivation, in the context of engagement with the democratic experiment - and hence also of democratic education - to "desire for democracy" (2011, p. 8). On balance, however, for all the noted ambiguity, we opted for understanding interruptive acts emanating from dissident individuals or groups to be marked by a large degree of spontaneity.

Derived from the third, the **fourth** implication is that democratic education can be decoupled from external, public pedagogy interventions or facilitation. Not only is this proposition a direct corollary of the largely spontaneous character of democratic experiments evoked above. By virtue of the intelligence which Rancière's axiom of equal ability to speak and act (Simons & Masschelein, 2010, p. 596) ascribes to each and every one of us, we are now also assumed, conditions permitting, to be capable of bootstrapping ourselves into novel ways of thinking[49].

The **fifth** implication - again closely linked to the previous one - is that democratic education can legitimately be framed as a condition of possibility [50] for novelty to enter the stage. Biesta confirms this by expecting democratic education to bring into existence "*new* ways of doing and being…" (Biesta (2010, p. 13), [emphasis by the author].

Masschelein (2006) and Simons and Masschelein (2010) further elaborate on links between education and new possibilities. Reminding us about the etymology of the word education - e-ducere - meaning, among

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[49] In this respect a Rancierian conception of education seems to sit well with how, in Chapter 1, we found Žižek to envision what the citizenry is capable of.
[50]It should be noted here that we deliberately abstain from framing democratic education as a 'means' or vehicle for bringing about novelty since this would mark a relapse into an instrumentalising conception.

others, 'to lead out' in Latin - Masschelein (2006) invites us to understand the notion of education as a process leading us out of limiting boundaries. As we are caught in experimenting with what we don't know, we allow for the possibility for 'seeing further', 'thinking further' or 'thinking otherwise' (2006, p. 568). He follows up on this idea when, together with Simons (Simons & Masschelein, 2010), he introduces the notion of *pedagogic* subjectivation. Again derived from Rancière's axiom of equal intelligence, this notion points to ways for individuals and groups, despite lacking credentials under the existing socio-political order, to experience their own 'potentiality' (2010, p. 601) for conjuring up as-yet-unexplored possibilities. Inspired by the "Ignorant Schoolmaster" (Rancière, 1987), this notion directs attention to protagonists experiencing their potentiality for pulling themselves out of problematic situations by harnessing, among others, their imaginative capabilities. In contrast to political subjectivation involving dis-identification or *disengagement* from the existing order, pedagogic subjectivation implies *engagement* with 'a thing-in-common' for the purpose of conjuring up new possibilities (2010, p. 601)[51]. Yet such engagement is not tantamount to everyone subscribing to a 'field of perception-in-common' (2010, p. 596). Participants do not necessarily approach a common problem in identical ways. As they each draw on their singular backgrounds, an array of heterogeneous - possibly contradictory - responses might arise. For Masschelein (2006, p. 568), it is precisely the confrontation with knowledge that is foreign, and with different ways of thinking, that potentially renews our gaze and reveals new possibilities. The thought-provoking notion of pedagogic subjectivation invites us to ask

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[51] This seems fully in line with (Rancière (2004a)) when he notes that, rather than acts of secession, demonstrations of capacity on the part of the excluded are better seen as affirmations of co-sharing of a common future world.

at least two questions in the context of the OPI. First, as they attended OPI meetings, did CS FNs and tribes put forward counter-proposals for addressing the plight of the Salish Sea as the problem-in-common, drawing on their traditional ecological knowledge and on past governance practices? Second, in so doing, did they seem aware of their ability to open up for new options for action? If so, this would confirm how energies might be directed towards a common cause, albeit on different premises and via different approaches (Davis, Sumara, & Luce-Kapler, 2000).

As a **sixth** and last implication, beyond highlighting ways of thinking and acting which CS attendees deemed unacceptable, as reconceptualised, democratic education would give us licence to explore how existing patterns of thinking and acting were possibly affected by CS speech and behaviour. In other words, emphasis would now be put on possible effects of acts and speech that turned certain agents into political or pedagogical subjects.

To recap, the contributions just reviewed proposed to reconceptualise democratic education as an offspring of the experiment of democracy in a Rancierian sense. Two notions, both of which positing considerable latitude for autonomous acts and equally pivotal for calling forth novelty, seemed central to this conception, namely: (a) Interruption calling into question the logic underpinning existing or prevailing ways of thinking, seeing and saying. Following Rancière, we understood interruption to spring out primarily from *within* individuals or groups and thus not necessarily to require intervention from outside: (b) pedagogic subjectivation which we understood to imply that individuals or groups not only *de facto* harness their own capacities or potentialities for bringing a contribution to a problem-in-common but also become aware of such capacities and potentialities.

Seen in that light, acts and speech denoting interruption and pedagogic subjectivation could, it seemed to us, be framed as fluxes somehow working together: as the former disturbs 'business as usual' by debunking dysfunctional, plain wrong or unsustainable ways of thinking about a given problem, it clears the way for as-yet-uncontemplated options to be conceived and for political subjects to become also pedagogic subjects 'discovering' their ability to think afresh and to bring a meaningful contribution. Both notions thus seem highly relevant for accompanying open-ended collective experiments whose protagonists set out to explore new pathways without waiting for others to find 'solutions'. This encouraged us to consider both concepts, taken together, as offering a promising angle from which to explore the OPI *qua* educational space.

2.4. Education and novelty: The contribution of complexity

We saw above that, under a Rancierian conception, education is understood to be inseparable from a process "through which *new* ways of doing and being come into existence" (Biesta (2010, p. 13), [emphasis by the author]. We suggested that, by extension, this conception would arguably make it legitimate to frame education as a condition of possibility for novelty to enter the stage. In this section, we shall show how two complexity-informed perspectives[52] on education might usefully be related to the Rancierian conception, particularly with respect to the question of novelty. Accordingly, we opted for giving special attention to how these

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[52] Alhadeff‑Jones (2008) reminds us that, far from being a monolithic body of knowledge, the complexity field embraces a spectrum of widely diverse strands, each with specific central notions - such as general systems, chaos and catastrophe, ecosystems and autopoiesis - and each with its distinctive origin, ranging from thermodynamics, through cybernetics to evolutionary biology.

perspectives understand novelty to be brought about and how they expect it to manifest.

The two complexity strands on which we drew are centred respectively on the concepts of emergence and enaction. [53] While concurring in many respects, different emphases advise against conflating them. At the same time, both seemed to us to present a take on education sitting well with a Rancierian conception. The emergence strand thus reconceptualises education as a process that takes place in "the very spaces of emergence" (Osberg, 2008a, p. 157). Informed by Prigogine's dissipative structures theory, the notion of emergence is understood to imply - at least in the sense of *strong* emergence[54] (Osberg & Biesta, 2007) - a passage[55] from one level of order to one qualitatively different from that which existed before (Osberg, 2008a, p. 146). This conception of education thus makes it inseparable from *radical* novelty (Osberg & Biesta, 2007), understood as properties and features so novel that, strictly speaking, they

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[53] Our commentary on these two strands will draw primarily on Osberg for emergence and on Davis and Sumara and Fenwick for enaction. While we also encountered advocates of the emergence strand in organisational studies (Emmeche, Køppe, & Stjernfelt, 1997; Goldstein, 2000) and sociology (Byrne, 2005; M. E. Lee, 1997), Osberg seems to be among the very first to relate education to (strong) emergence. As for enaction, rooted in biology, here too we consider the educational researchers we selected to be among those who pioneered coupling this notion to education.

[54] While these authors (2007, p. 33) underline that the term 'emergence' suggests in all cases *creation of new properties*, they contrast a 'strong' and a 'weak' version of emergence. In 'weak' emergence, novel properties - however unexpected - are understood to result in a *deterministic way* from non-linear rules governing lower-level interactions. In other words, they are logically derived from their constituents. By contrast, 'strong' emergence (2007, p. 34) implies that whatever emerges from a given base of emergence is radically novel. It can *in no way* be deduced, even in principle, from the most complete and exhaustive knowledge about what occurred at the lower level from which it emerged.

[55] Emmeche et al. (1997) echo this when they remind us that emergence implies relative autonomy and distinctiveness between at least two strata, each being the locus for specific dynamics. More accurately, they see emergence as denoting a *passage* between two levels.

could not be conceived from the logic of the order that came before (p. 33) [56]. Education becomes a process of exploration into "that which cannot currently be conceived as a possibility" (Osberg, 2008a, p. 155). Continually producing new possibilities, this process compels those engaged in it, as Osberg writes, "to continuously renew their ways of being-in-the-world-with-others and to rethink everything about their world." [57] New rules and responses must be invented along the way without knowing where they will lead.

The enaction perspective echoes this line of thinking. Derived from Maturana and Varela's biological approach to cognition (1992) and therefore distancing itself from cognitive psychology's decontextualised and individualistic approach (Haggis, 2009), this perspective too recasts education as continuous invention and exploration. Calling forth new understandings, it ushers in new possibilities for interpretation and hence

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[56] It thus seemed tempting to draw a parallel between the Rancierian process of political subjectivation and the emergence strand's process of (strong) emergence: both are assumed to call forth qualitatively new ways of being and doing (Biesta, 2010, p. 16). As seen from the point of view of the enaction perspective, however, the notion of subjectivation is problematic on at least one count. This perspective would thus have reservations regarding focusing primarily on the lone individual as the key locus of such a process. Fenwick thus writes (2009, p. 108): "Complexity science refuses the notion that (…) autonomous individuals are separated from others, that they act according to independent choices and rational intentions (…)". To be acceptable to the enaction strand, the process of political subjectivation would need to concern much more than individuals (temporarily) turned into political subjects. It would also extend to inter-subjective identities and collectives (Davis & Sumara, 2006, p. 6). In chapter 3 we shall comment further on the notion of subjectivation seen through the complexity lens.

[57] The logic of emergence thereby adds an interesting twist: rather than drawing on strict rules of logic to bring into question understandings inherited from the past, it evokes genesis of what has never been thought before, what has not proved thinkable before. It opens a breach through which as-yet unimagined vistas become visible. It pushes further the boundaries of what was believed or foreseen to be possible. Transcending what Derrida (1967) calls 'possibilities within the economy of the same', it opens up for contemplating entirely new ways of responding to conundra generated by obsolete ways of thinking.

for action (Davis & Sumara, 2006, p. 76). The concept of 'co-emergence' that it introduces further helps clarify this point. Foregrounding entanglement between cognition and the context(s) in which it is embedded, this concept invites us to re-interpret cognition - and hence education [58] - as "a joint participation, a choreography" rather than a "locatable process or phenomenon" (Davis et al., 2000). This leads to what Fenwick (2000) sees as the enaction strand's most radical proposition. Education is now seen to take place both when subjects interact with each other and when they 'intra-act' with the complex entities within which they operate. Effects resulting from this interplay ripple through these entities, turning them into coherent units with potential for birthing novel responses. Applied to the OPI, the enaction conception of education would thus direct attention to self-organising dynamics that interactions between participant organisations might have generated. It also invites taking into account how such dynamics either amplified or hampered emergence of novel responses. For example, a 'side-effect' of sustained face-to-face exchanges between participant organisations might conceivably be a general climate of emulation propitious for conjuring up as-yet-unimagined options relative to the concept of a transboundary MPA.

Similar in that respect to a Rancierian conception of education, both emergence and enaction lenses thus direct attention to *effects*. While, under the former conception, focus was on effects of certain acts or speech, under the latter, emphasis is on effects of open-ended processes playing out within spaces of (co-) emergence. Framing education as a process of (co)emergence invites viewing novelty - and, what is more, *radical* novelty - as a potential effect of education. This in turn invited us to address the

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[58] We thus noted that the enaction strand - at least as presented by Davis and Sumara (2006) and Fenwick (2003) - appears to equate 'education' with 'cognition' in the broader meaning they propose for the latter.

question of what particular conditions could be understood to favour emergence of radical novelty.

2.5. Two critical moments and one critical event

When it came to shedding light on the question just raised, the emergence strand appeared to us to tie in well with a Rancierian conception of democratic education. Where we saw Biesta, Masschelein and Simons draw attention to the role that certain critical moments in which certain individuals or groups turned into political and pedagogic subjects played in paving the way for new ways of thinking, Osberg (2008a), for her part, associates radical novelty to certain critical points in the trajectory of emergent processes she calls bifurcation points. The graph below (*fig. 3*) helps clarify this.
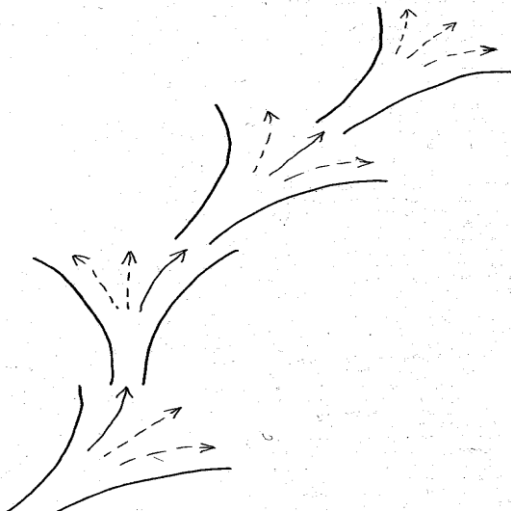
Fig. 3: The process of emergence with points of bifurcation
(*Drawn from Jantsch - 1981*)

Again following Prigogine, the emergence strand posits that the quality of spaces of emergence changes after exposure to flux. We eyed here a striking parallel between such disruptive flux and Rancière's interruption. Translated into the language of emergence, interruption may thus be assimilated to flux pushing an existing order away from equilibrium or *status quo*. This interpretation finds support with Rancière as he posits aesthetic - and political - breaks to bring about "new forms of balance - or *imbalance* -" ((2009a, p. 72), [emphasis added].

Moreover, as the graph above illustrates, when a system responds to flux, an array of equally plausible potentialities is formed [59]. Before 'jumping' from one level of order to a new one, at certain points 'choice' is made between these alternatives. As one of them is actualised, the trajectory of the process is possibly altered. Applied to the context of the OPI, the concept of bifurcation would prompt us to ask if major shifts could be observed in ways of thinking about principles and modalities for governing the commons of the Salish Sea, in the same stride possibly redirecting the trajectory that the initiative followed. Recalling that pedagogic subjectivation was precisely about conjuring up as-yet-unexplored, distinctively different possibilities, we felt tempted to draw a parallel between this notion and the splitting into an array of different potentialities. Accordingly, as we adopted the complexity lens, we felt prompted to frame interruptive acts and moments implying pedagogic subjectivation as conditions of possibility for bifurcation events, the former through disturbance and the latter through differentiation.

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[59] The term 'multi-furcation' seems more apt at rendering the idea of one initial order splitting into an array of equally plausible possibilities. This notwithstanding, we shall stick to the more generally adopted term of 'bifurcation'.

The enaction strand seemingly puts less emphasis on particular critical moments. It acknowledges instead that how interactive spaces respond to fluxes is largely a function of their internal dynamics. 'Structural coupling' Maturana and Varela (1992) thus implies that, if the structural dynamics of one of the 'partners' implicated in co-emergence – be it the interacting elements or the complex entity in which these interactions take place - are disturbed, this 'perturbation' excites responses in the structural dynamics of the other.

2.6. Chance versus order and intentionality in relation to novelty

Where, as seen earlier, the Rancierian conception relative to both democracy and democratic education foregrounds interruptive acts as contingent (Rancière, 2006, p. 97), fundamentally non-decidable (Biesta, 2010, p. 15) and falling under 'the logic of chance' (Simons & Masschelein, 2010, p. 597), similarly, the emergence strand ascribes a prominent place to chance. As this strand sees them, the principles influencing a given system's 'choices' are not to be found in its present patterns but in the very dynamics of emergence (Osberg, 2008a). Inclusion of chance as an 'operator' in these dynamics precludes laws that would explain passage from one order to the next, elucidate what is actualised at bifurcation points and predict the trajectory subsequently followed. While, therefore, the notion of emergence cannot be dissociated from unpredictability, spaces of emergence nonetheless remain spaces pregnant with potentiality which - in Agamben's words (1999, p. 182) - may

manifest either as presence or absence. [60] Accordingly, for Osberg, education - as a non-deterministic process of emergence opening possibilities unthinkable under a former logic - can offer a valuable contribution to democratic practices. Proposing, like Biesta, to invert the relationship between democracy and education, she introduces the intriguing concept of 'inventionalistic' educational democracy (2010, p. 164). Democratic practices rethought in terms of taking care of the future might, she suggests, find inspiration in a complexity-informed notion of democratic education that extols the principle of freedom of choice and of playfully experimenting with the paradox of "the possibility of the impossible" (2010, p. 164). Importantly, this would further warrant our framing of experimental fora as sites with potential for democratic education. As for the enaction perspective, its notion of co-emergence leads it to take seriously the role of circumstances, serendipity and happenstance (Davis & Sumara, 1997, p. 122).

Complexity's emphasis on chance in turn prompted us to examine two questions. The first relates to whether it might legitimately be suspected to err on the side of messiness at the expense of order. We deem it important here to distinguish between what complexity implies at the conceptual level and what is considered complex[61] in empirical terms. The complexity lens unquestionably invites framing most, if not all, empirical settings as dynamic, multi-layered and heterogeneous. It also encourages perceiving these settings as made up of transient entities, contingently

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[60] As he writes: " To have a potential means to be capable of impotentiality".

[61] Since what is 'complex' tends to be opposed to what is simple, it is often confused with what is 'complicated' (Alhadeff‑Jones, 2008, p. 68). In contrast to 'complex' implying interrelated elements subjected to on-going co-adaptation made unpredictable through internal variability, 'complicated' hints at many disparate elements subject to fixed and hence predictable rules (Haggis, 2009, p. 11).

bound by porous and fluctuating boundaries that are interacting with each other (Kuhn, 2007, p. 169). While this framing seemingly privileges messiness, this impression is arguably corrected at the conceptual level. First, we recall, the very notion of emergence implies passage from one form of *order* to another. Moreover, in contrast to messiness that resists patterning, in some paradoxical way, the complexity lens views disorder as implying a form of order and hence as playing a constructive role. As Morin puts it, "(T) here are orders in the disorder" and "self-organized living organizations are constructed with disorder" (Morin (1977/2003, p. 72)*.* Drawing an analogy with what he sees occurring in ecosystems, he foregrounds the productive role of conflicts and disequilibrium - a form of disorder - as constitutive of new forms of order, both in our ways of thinking and in the way we organise ourselves as humans (Fortin, 2008). Alhadeff-Jones (2012, p. v) adds that, under a complexity notion, disorders "open a window on the fundamental diversity of paths that an evolving situation can follow". We shall return to this point under our discussion of radical novelty.

The second question related to whether complexity's emphasis on chance leaves much room for intentionality, a dimension touched upon earlier in relation to the Rancierian conception of education. Critics of complexity are claiming that the logic of emergence leaves humans with little choice but to comply with systemic forces overriding their free will and condemning them to abide by the 'iron law' of never-ending adaptation to immediate contingencies (Dillon, 2000). The emergence strand admittedly presents bifurcation as 'a moment of freedom' (Osberg, 2010a, p. 163), that is to say, as we understand it, a moment where anything may happen spontaneously, regardless of human intentions. Davis and Sumara (1997, p. 122) reinforce this impression when they present

goal-setting as largely escaping our control. For these authors, goals surface and take shape through interplay between human agents and dynamics inherent to their immediate and wider contexts, often taking aback the human agents concerned. Following this line of thinking, as it emerged in the spring of 2003, the proposal for the OPISA might thus be assumed to include dimensions that the OPI's instigators did not even dream about when launching the initiative four years earlier. Even so, resisting conceding too readily to critics, we wondered if some form of intentionality might, after all, cohere with the logic of emergence and its notion of bifurcation.

We found Osberg to touch upon the question of intentionality in the context of democratic politics 'taking care of the future' (2010a, pp. 161-162). *Prima facie*, her reasoning appears to take us in a direction vindicating the critique evoked above. She thus starts by reminding us that a teleological and instrumental theory of action does not sit well with complexity (2010a, p. 154). For her, since emergent processes are understood to be both open-ended and never-ending, no precise, measurable goals can be set for such processes[62]. Even less focused visions may ultimately be viewed as attempts to control the future and hence as "denial of the future *in its radical futurity*" (2010a, p. 161)., [emphasis by the author]. Yet, in the course of the same discussion, she acknowledges that, as political agents and citizens, we cannot "passively accept whatever comes our way" or "abandon ourselves to the vicissitudes of fate" (2010a, p. 163). She concedes that some *ex-ante* envisioning is needed to guide our steps towards the future and to detect opportunities in the present. To these ends, she proposes a form of envisioning springing out of "sensitive and

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[62] Here too we saw affinity with a Rancierian conception of democratic education dissociating the latter from pre-set objectives.

tentative experimenting". After listening to "the voice of the future" (2010a, p. 162), the visions taking shape via such envisioning are themselves subjected to the logic of emergence. Non-focused, or diffuse, but nonetheless endowed with a normative - or affirmative - orientation, these visions can be understood to play a dual role. Not only do they help bring into the world ways of doing things considered impossible from the perspective of the past (2010a, p. 162). They also bring about ways that are *better* (2010a, p. 161), [emphasis by the author] than those currently practiced. While underlining that (valid) rules, norms or objectives inherited from the past cannot and should not be discarded if used in an open-ended way, Osberg nonetheless reminds us that experimenting is also about exceeding such rules. Only then, she claims, will it be possible to call forth visions of "what is not yet possible" from the perspective of the past (2010a, p. 162) and to bring into the world radically new ways of thinking and acting (2010a, p. 164) that are qualitatively and normatively superior to those that came before.

On balance, therefore, for all its ambivalence and paradox, the logic of emergence appeared to us to leave some room for intentionality. This logic allowed us to understand intentionality as manifesting in at least two ways: firstly, through pre-conceived, focused but provisional visions informing the beginnings of any enterprise however experimental; secondly, through non-teleological, diffuse but no less affirmative visions welling up as experimentation unfolds. This in turn encouraged us to establish a sequential linkage between the two types of visions: we thus felt inclined to consider *ex-ante*, provisional visions as the impetus prompting people to 'answer present' to the call of democratic engagement. As for non-focused, normatively tinged visions emerging in pace with the unfolding of experimental endeavours, we considered them to fuel and support sustained

engagement in such endeavours. Arguably, the more agents discover along the way their ability to help call forth (radically) novel and better options for being, living and working together, the greater, it seemed to us, the likelihood of their remaining engaged. Again turning to the OPI for illustrating this reviewed notion of intentionality, our first reading of this initiative indicated that its instigators did indeed harbour hopes at the outset regarding what they would like to see happening. This reading also suggested that an initial vision was conceived following a gestation period of about six months. The logic of emergence would, however, lead us to expect that unexpected, radically novel versions of this vision, pointing at entirely different and better ways of governing the commons of the Salish Sea, would somehow bubble up as the initiative unfolded.

2.7. Directionality of processes of emergence

Another dimension seemed to us to nuance further the notion of indeterminacy as posited by the emergence strand. When Osberg invites us to visualise the process of emergence - and hence of education - as a centrifugal process "… forever moving 'outwards'…" (2008a, p. 158), as shown by *fig. 4*, she *de facto* instills a form of directionality[63] into this process.

Understanding this centrifugal movement to "renew and expand what came before", she underlines that it "is *not* an expansion in the sense that something unknown is *added* to what is already present, which remains the same. It is an expansion in the sense that "what is already present is *reordered* or *renewed* in a way that opens

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[63] By contrast we would argue that the directionality inscribed into a Rancierian conception remains vague. Admittedly, Masschelein (2006) inscribed a form of directionality as he sees education as 'leading - or pulling - us *out*' of existing limitations. For (Biesta, 2011, p. 6), on the other hand, even if lessons and insights derived from previous experiments are assumed to be cumulative, processes of political subjectivation are assumed to be anaphoric, each time starting anew.

incalculable (and wider) possibilities" (2008a, p. 149), [emphasis by the author]. One might say that Osberg here by refines what Rancière and Biesta point out. For the former, new possibilities appear through *adding* as an existing order or field-of-perception is reconfigured by "putting two worlds into one and the same world" (Rancière, 2004b, p. 304; Simons & Masschelein, 2010, p. 594). The
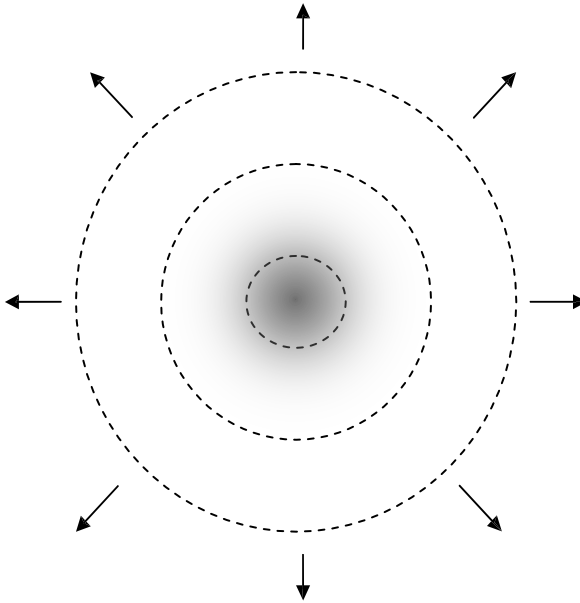
Fig. 4: Outward-bound dynamics of the process of emergence

(Graph drawn from Osberg, 2008a)

latter draws attention to the supplementary nature of subjectivation (Biesta, 2010, p. 13) bringing the existing order to reconfigure and recompose itself. We, for our part, feel tempted to see outward expansion as another way of conceiving what happens under the effect of bifurcation. More concretely, we suggest that this expansion might manifest through availability of ever-wider arrays of *qualitatively* different responses to a problematic situation. Accordingly, in the case of the OPI, the overall vision for the proposed

transboundary MPA that might be expected to emerge from discussions would not only include a wider and more varied range of options for action. An entirely different logic would also be brought to underpin the options contemplated.

Elsewhere, Osberg suggests yet another way of thinking about directional orientation for processes of strong emergence. She reminds us that these processes bring about radical novelty through leaps *'upward'* to higher levels of order (Osberg & Biesta, 2007). Each level discloses new vistas onto possibilities that could not be conceived at lower levels. Strikingly, then, when framed as a process of 'strong' emergence, education would - potentially at least - be associated with *irreversibility.* Since this suggests that, once our eyes have been opened, there is no way back, the stakes involved are raised. When seeking to gauge if a given space actualised its educational potential, no longer would it be enough to look for moments denoting interruption during which individuals or groups rose to their feet and, by means of specific acts, dis-identified themselves from the existing socio-political order by revealing its inconsistencies or wrongs. Nor would it suffice, as the notion of pedagogic subjectivation implies, for individuals or groups to contribute to and become aware of their potentiality for inventing ways out of problematic situations. In addition, we would need to look for shifts bringing about *higher-order*, qualitatively different ways of thinking and doing. This in turn begged the questions of what such shifts might be understood to imply in the context of democratic education and how they might be expected to manifest.

2.8. Emergence and manifestation of radical novelty

When introducing the notion of strong emergence, Osberg and Biesta (2007) refer to Morgan's evolutionary perspective (1923). Yet they cautiously refrained from discussing further what such a perspective might imply when transposed to education. Instead, they chose to associate the radical novelty that they assumed strong emergence processes to generate with renewal.

Educational researchers informed by the enaction strand partly compensate for such restraint. For Fenwick (2003), the *'coupling'* that the notion of co-emergence posits between humans - individually or collectively - and their contexts creates *a new transcendent* unit of action - and, we would add, of cognition - which neither of the two partners could have achieved alone. Positing education as a process enlarging the space of the possible, Davis and Sumara (1997) appear to associate this process with increasingly complex understandings (p. 303). For them, even if all we can do is to respond to immediate contingencies, we can nonetheless improve our chances of responding adequately if we draw on a more complex array of ideas, concepts and practices that we invent along the way.

The enaction perspective introduces a further dimension that helps us better understand, also in empirical terms, what might be understood by 'higher levels of order' in the context of participatory settings. Looking at them as complex systems with educational potential, Davis and Sumara (2006) suggest that such settings can call forth understandings more 'sophisticated' than those initially held by constituent parts. More precisely, they distinguish between, on the one hand, a micro-level at which 'local' cognitions, viewed as constituent parts of such systems, interact with each other and, on the other hand, a macro-level at which

cognition that is *more than the sum* of local cognitions manifests as a property or feature of the system as a whole[64]. This in turn offered a stepping-stone enabling us to refine further the relationship we proposed to establish between the concepts of interruption, pedagogic subjectivation and bifurcation. We opted for understanding the first two as occurring at the micro-level of local interactions between individuals or groups within a given (provisionally and tentatively) bounded entity, apprehended as a space of emergence. Bifurcation, for its part, would become an event, the effects of which would come to expression at the macro-level of this entity viewed as one coherent unit of response. Despite this clarification we were nonetheless still left with an intriguing question: what properties or patterns might signal more 'complex' or 'sophisticated' visions that we would understand to fingerprint a bifurcation event?

　　In an effort to offer a reply - however tentative - to this question, we turn to Bateson (1979); Harries-Jones (1995); Bohm (1980/2002) and (Morin (1977/1992), 1999)). All suggest similar clues as to what properties might be ascribed to complex or - as we prefer to say - 'complexifying'[65]

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[64] More generally, the enaction strand suggests that our world might best be understood as presenting a multi-level and multi-scalar architecture of 'nestedness', where smaller entities are imbricated into bigger ones. We shall return to this point in Chapter 3.

[65] Through this neologism, we wish to convey the message that we are talking about properties originating in a *process*, namely the process of (co)-emergence. Simply replacing this qualifier by 'complex' would not do since the latter might merely evoke a property disconnected from the important dynamics that made it possible. Such emphasis on complexification as an open-ended, never-ending process clearly reveals affiliation to the latest generation of complexity-informed theorising marking a shift from focus on 'organised complexity' with a sizeable number of factors interrelated into an organic whole' (Alhadeff‐Jones, 2008, p. 68) to issues related to 'organi*sing* complexity' (Le Moigne, 1996). In cognitive terms, the notion of complexification might be seen to resonate with Kegan's cognitive development theory (1982) according to which individuals - and presumably also collectives - tend over time to be capable of grasping ever more complex concepts.

thought. Contrasting it with fragmented, reductionist and dichotomising thought, these authors understand complexifying thought to reconnect what the latter disjointed. Morin (1999, p. 44) makes this clear through the following, somewhat stern remarks:

> << Since our education taught us to separate, to compartmentalise, to isolate and not to link different knowledge, the body made up by these knowledge forms a puzzle making no sense to us. Interactions, feedbacks, contexts, complexities found in the no man's land between disciplines become invisible. Major human problems disappear to the advantage of specific technical problems. Incapacity to organise scattered and compartmentalised knowledge leads to atrophy of natural mental predisposition for contextualising and globalising. Fragmented, compartmentalized, mechanistic, disjunctive, reductionist intelligence breaks up the complex formed by the world into disjoined fragments, splits up problems, separates what is linked, renders mono-dimensional what is multidimensional. It is a myopic intelligence ending up most of the time by becoming blind. It nips in the bud possibilities for understanding and reflection, reduces the odds for corrective judgments or longer-term view. As a result, the more problems become multidimensional, the more incapacity to think in multidimensional terms; the more the crisis presses forward, the more incapacity to think about it gains ground; the more problems take on a planetary scale, the more they become unthought-of-about. Incapable of contemplating both context and the planetary complex, blind intelligence makes us unconscious and irresponsible. >>[66].

Attentive to complementarity - even between seemingly antagonistic and competing elements (Morin, 1977/2003, p. 80) - complexifying thought is thus eminently relational as it captures 'patterns that connect' (Bateson, 1979)[67]. This thought is also contextualising as it positions problems in their broader context(s).

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[66] Our translation.

[67] (Semetsky, 2012) reminds us that Dewey too associated more complex understandings with capacity to apprehend connections and interrelations.

A number of authors consider an increased capacity to embrace heterogeneity by bringing contrasted perspectives into productive conversation to be yet another distinctive feature of complexifying thought[68]. Cavanaugh and McGuire (1994), for example, view interaction between differentiated perspectives as a stepping-stone towards higher-level cognitive coherence. This is echoed by Sterling, for whom acceptance of multiple realities is the trademark of relational thought (2007, p. 68). For Osberg, entirely new rules are birthed through interplay of otherness or heterogeneity (2010b, p. 164). Finally, when Davis and Sumara view diversity as critical for intelligent action in situations fraught with unknowns (2006, p. 138), we feel tempted to infer from this that they understand the ability to take advantage of diversity as forming part of more sophisticated understandings.

2.9. Presenting our heuristic framework

To sum up, we found the Rancierian conception to reframe democratic education as an offspring of open-ended engagement, on the part of individuals or groups, in situations they deemed arbitrary, unacceptable or unsustainable. We also found this conception to foreground two types of critical moments implying interruption and

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[68] Departing from authors like Mouffe (2000) for whom heterogeneity tends to translate into agonistic politics with its 'us/them' opposition and replacing a notion of dualistic opposition by a notion of interdependent, polar terms, a complexifying way of thinking would thus be attentive to creative tensions and complementarities also between antagonistic or competing claims (Semetsky, 2012). Rancière's thinking seems to point in this direction as well. Transposing aesthetic practices of disruption to democratic politics, he evokes new creative associations formed by seemingly incommensurable and heterogeneous elements (as in photomontages or collages) (Ruby, 2009, p. 106).

pedagogic subjectivation transforming individuals and groups into political and pedagogic subjects respectively.

Furthermore, the discussion just held arguably vindicated the proposition that a complexity-informed view of democratic education might fruitfully be tied to a Rancierian view, complementing the latter in several respects:

First, positing education as a process of (strong) emergence, the emergence strand enabled us to introduce the concept of bifurcation as a critical event bringing about radically novel ways of thinking, seeing and doing.

Second, instead of limiting our attention to cognitive shifts among individual protagonists or organisations engaged in local or micro-level interactions, the enaction perspective, for its part, helped us reframe collectives, temporarily formed and sustained by micro-level interactions, as coherent cognitive units[69]. It proposes to view these units as capable of birthing responses more sophisticated and supposedly more appropriate than those devised by constituent individuals or organisations taken separately. Accordingly, as we would look for conspicuous shifts in visions that emerged from the OPI regarding governance of marine commons in the Salish Sea or portions thereof, the enaction perspective would warrant our focusing also on the overall vision that appeared to emerge from this initiative. Remarkably also, rather than setting human agency and cognition apart from the physical world, the intimate relationship it posits between the world of humanity and the more-than-human world (Abram,

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[69] As already pointed out in footnote 7, a Rancierian conception of democratic education tends to foreground the individual political or democratic subject. While not contesting the centrality of the individual level at which all other levels are conflated, the enaction perspective reminds us that individuals are nested constituents of a series of imbricated, ever-wider entities whose boundaries are unstable, fuzzy and, above all, porous.

1996) brings it strikingly close to a worldview still found, among others, in indigenous communities, notably in North America (Bear, 2004; Berkes, 2008, p. 275). Consequently, it does not confine democratic education to acts seeking to put right what is deemed intolerable for oneself and fellow-humans under the existing socio-political order. If, for Rancière - and Biesta - quintessentially democratic moments are such that allow the principles of liberty and equality to be expressed, we found the enaction perspective to resonate with our own preoccupations as it also invites attaching importance to sustainability-related principles, including our responsibility towards the non-human realm. From this follows that the dissenting acts we would look for in the context of the OPI would not solely concern what is deemed unacceptable or 'wrong' from the point of view of equality and freedom. We would also consider relevant such acts challenging principles and practices deemed unsustainable and irresponsible in relation to the non-human sphere. Accordingly the enaction perspective enabled us to see democratic education as a process whereby non-humans, represented through their spokespeople (Latour, 2004a)[70], are invited to join in as equal partners to help conceive new ways of taking care of the future.

Third, we found the logic of emergence to lend support to a conception somewhat dissociating democratic education from external, public pedagogy interventions without, however, viewing democratic education processes as entirely subjected to chance-ruled contingencies. Democratic education thereby became a process of (co-) emergence largely sustained by local interactions unfolding within or at the fringes of a

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[70] Strikingly, deliberations within the Okanagan nation (BC) regarding land use and natural resource issues often include so-called 'land speakers' whose role it is to advocate for the welfare of the land and all its living beings, thereby securing them a visible place in the deliberations (Armstrong, 2008).

provisionally bounded entity. In practical terms, this gave us licence to examine how far the OPI was able to go in tracing its own trajectory and inventing its own history.

Thanks to the composite prism of a Rancierian conception and of the two complexity strands we selected, we were able to reconceptualise democratic education as a process of (co-) emergence, characterised, among others, by two types of critical moments denoting interruption and pedagogic subjectivation respectively and one or several bifurcation events calling forth radically novel ways of thinking, seeing and doing. The three key concepts of interruption, pedagogic subjectivation and bifurcation - as well as the discussion about them – thereby provided us with building blocks for constructing the heuristic framework with the help of which we could explore the OPI. Framing radical novelty as an emergent effect of educational processes that would manifest through the two shifts of (a) outward expansion enlarging and renewing the array of differentiated responses and (b) leaps upward towards more relational and contextualising thought, this framework would propose to understand these shifts to be called forth, among other fluxes, by acts and speech denoting interruption and/or pedagogic subjectivation playing out at the micro-level of local interactions between organisations and groups that engaged in the OPI. It would furthermore assume both shifts to become visible at the macro-level of this initiative, approached as a coherent unit of cognition - or, better, of envisioning - when bifurcation points or thresholds were crossed. More concretely, it equipped us for exploring to what extent, in the course of the OPI's history, the vision informing the initiative could be shown to undergo shifts opening up to a wider and more differentiated array of options for governing the commons of the Salish Sea and

reflecting a more relational and contextualising way of thinking about this matter. It would also invite us to examine to what extent, more or less concurrently, local interactions could be shown to include interruptive acts and/or differentiating speech denoting CS representatives turning into respectively political and pedagogic subjects. Accordingly, it enabled us to formulate the following four research questions:

RQ.I: To what extent did the vision that emerged at the macro-level of the OPI appear to have undergone one or several bifurcation events calling forth radically novel perspectives and approaches for addressing the plight of the Salish Sea?

RQ.II: To what extent did interactions that took place at the micro-level include moments denoting interruption on the part of CS protagonists?

RQ.III: To what extent did interactions that took place at the micro-level include moments denoting pedagogic subjectivation on the part of CS protagonists?

RQ.IV: To what extent could possible moments denoting interruption and pedagogic subjectivation on the part of CS protagonists be shown to have contributed to bifurcation events calling forth radically novel perspectives and approaches for addressing the plight of the Salish Sea?

Forsaking any 'why' questions, we deliberately limited ourselves to questions introduced by 'to what extent'. We thereby inscribed our empirical inquiry in a tradition striving to illuminate processes or phenomena through exploration - possibly involving some evaluation - while allowing readers to make their own judgments. We hoped the three

first questions would help us see more clearly to what extent the OPI, over time, called forth a radically novel vision within which the two seemingly contrasted logics underpinning indigenous ecological knowledge and Western science were repositioned as complementary.

As for RQ.IV, it would hopefully contribute to our gaining further insights regarding the role played by the two types of critical moments we identified when discussing the Rancierian conception of democratic education in helping the vision carried by the OPI take on radically novel properties. In other words we expected this question to help us elucidate to what extent acts through which CS protagonists called fundamentally into question ways of thinking about, envisioning and practicing governance of marine commons or speech through which they contributed to addressing the 'problem-in-common', while acknowledging their own potentialities for 'making a difference', might plausibly be shown to have helped call forth such properties.

Having thus constructed our heuristic framework by cutting out particular aspects of the contributions examined in this chapter, rearranging them and splicing them back together into our own thought, as Osberg recommends (2010a, p. vi), we expected this framework - as well as the four research questions derived from it - to enable us to strike our own, unprecedented way forward. In so doing, we clearly opted for broaching the OPI from an experimental attitude. While such an attitude obviously commended open-ended inquiry. We nevertheless allowed a pre-conceived - fairly focused - but no less provisional, idea of what we hoped our empirical inquiry would shed light upon to guide us as we set out on our exploratory journey. Less we might otherwise find ourselves endlessly groping in the dark. At the same time we were adamant neither to prejudge

what would come out of this inquiry nor to exclude unforeseen, less focused ideas that would emerge along the way.

CHAPTER 3: INTO THE DEPTHS OF THE COMPLEXITY UNIVERSE

Introduction

The present chapter is dedicated to presenting meta-theoretical tenets and principles undergirding complexity, the perspective to which our heuristic framework would be anchored. It also presents modes of reasoning that this perspective recommends and discusses linguistic constraints brought in its wake.

3.1. Key pre-suppositions characterising the complexity perspective

In the previous chapter we presented the framework we would apply as a heuristic device for exploring the OPI. This invited us to frame this initiative as a potential site for democratic education understood as a process of (strong) emergence implying bifurcation events under the possible effect of acts and speech denoting interruption and pedagogic subjectivation. Since we thus supplemented a Rancierian notion of democratic education with one informed by complexity, it appeared obvious to anchor this heuristic framework to what Davis and Sumara (2006) call complexity thinking. For these authors, complexity is neither a specific science nor a specific theory. It is above all a new way of thinking about and looking at phenomena, a new *attitude* towards what we observe and encounter. Kuhn, for her part, understands complexity as "a strategic orientation" for studying and conceptualising particular phenomena through specific metaphors with potential relevance across disciplines (2007, p. 164).

Pointing out that we live in an era of ontological and epistemological pluralism, Alhadeff‑Jones (2008, p. 68) recommends that researchers, already at an early stage, lay bare the meta-theoretical foundations underpinning the theoretical or conceptual framework they apply to their research. Following this advice therefore committed us to highlight key meta-theoretical tenets we deemed characteristic of complexity thinking, as well as their implications in terms of research strategy and methodology. Prior to this, however, we deem it appropriate to foreground particular pre-suppositions that we read into this particular perspective. Like any other endeavour to understand the world, this perspective is open to many different interpretations and obviously also to critique. However, when reviewing a considerable body of writings either directly anchored to or close to complexity thinking, not only did we often feel in agreement with pre-suppositions that these writings appeared to adopt. Taken together, these pre-suppositions also seemed to offer an inspiring and coherent springboard for our exploration of the OPI.

While the brief review that follows obviously draws primarily on the emergence and enaction strands, we supplemented the discussion with contributions from other thinkers grounded in complexity thinking,

The first feature that spoke to us was that, departing from post-structuralism's blunt rejection of meta-narratives, complexity thinking arguably subscribes to a meta-narrative positing continually emerging new possibilities (Jörg, 2009; MacKenzie, 2003) [71]. As we see it, such orientation towards new possibilities offers a welcome break from the existential angst some note in the wake of post-structuralism (Seidman, 2008). Uncertainty and unpredictability are instead turned into conditions

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[71] Interestingly, MacKenzie writes: "The movement of complexity attests a (…) long-standing European-American time-sense (…) which could be called 'possibilization'.

of possibility for novelty to occur[72]. Moreover, as the idea of undetermined emergence presses home that nothing is ever pre-determined, it brings a hopeful supplement to critical theory's exposure of flagrantly unjust and unsustainable practices. Since there will always be unexpected possibilities (Osberg & Biesta, 2007), the game is never really over. In calling into question entrenched beliefs regarding definitive closure, unredeemable failure, or worse, unavoidable regression or collapse, complexity points to potentialities inherent to each situation - even those that appear the most hopeless - and calls attention to new beginnings.

A second feature was complexity's particular stance relative to difference and diversity. While following, in this respect, post-structuralism some of the way, Morin (Fortin, 2008) and Davis (2008a, p. 57) both deplore the latter's propensity to present different discourses primarily in terms of controversy and conflict. As seen in Chapter 2, complexity prefers to reframe difference, diversity, and plurality in terms of heterogeneity, while at the same time turning antagonisms presented in terms of controversy into a source of creativity and renewal (Cilliers, 1998). Emphasis is put on taking advantage of diversity to produce ever-shifting, contingent but no less productive associations.

A third feature of the complexity perspective we found attractive as we came to familiarise ourselves with it was the latitude it appears to give the researcher to choose between different theoretical contributions. Davis and Sumara (2006) thus underline that complexity in no way implies pledging exclusive allegiance to one particular body of theorising. Osberg (2010a) echoes this when writing, "(P)lacing undecidability at the centre of knowledge making - as the emergence logic suggests - is the same as

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[72] As the complexity-oriented philosopher Juarrero puts it: "(A) universe in which certainty is possible must exclude novelty" (1999, p. 258).

endorsing that knowledge from very different perspectives is equally authoritative." Rather than claiming to provide an umbrella that unites and encompasses all theories, the complexity perspective thus recommends bringing complexity concepts into a fruitful dialogue with theoretical concepts developed under other perspectives (Davis, 2008b). The merits of such conciliatory approach became clear as we linked two complexity informed conceptions of education to the Rancierian conception.

A fourth feature that spoke to us was how complexity positioned itself to the issue of power. Some have criticised complexity for being blind to power relations (Fenwick, 2000) and to how these relations obstruct efforts to strike at entrenched interests. Granted, (Davis, 2008b) clearly distances himself from merging complexity into critical theory. Yet, at no point, does he arguably deny the 'reality' of power relations. While contesting critical theory's positing power as resulting from deliberate intentions to dominate or exclude, he acknowledges power relations as an intrinsic and distributed dimension of complex systems.[73] In this respect, a complexity-informed view of power relations comes close to a Foucauldian perspective framing such relations as a flow circulating and irrigating all levels of society. Moreover, rather than ascribing an exclusively inhibiting role to this flow, complexity also assumes it to stimulate inventiveness. As we shall see shortly, complex ontology posits everything to be subjected to constant flux and that the very essence of the universe warrants continuous opening rather than closure (Osberg, 2005). This prompts complexity thinkers to claim that continuous creative renewal eventually get the better of concrete cases of domination and oppression (F. Turner, 1997, p. xviii). The assumption that, just as any other type of relations, power relations are

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[73] Conversation with B. Davis at UBC, October 15th, 2008.

subject to unpredictable and uncontrollable influences lends further support to this claim.

3.2. Ontological principles and their implications

Cillers (2007, p. 84) asserts that, as we think about the world, we are dealing with ontological and epistemological issues simultaneously. We nonetheless follow those who deem it both relevant and legitimate to distinguish between, on the one hand, the world as we conceive it to exist and, on the other, knowledge of that world. Accordingly, we shall start by addressing key ontological principles arguably at the root of complexity thinking.

3.2.1. A dynamic, interconnected and multi-layered universe

Three tenets seem to be equally foundational to complex ontology. The first tenet posits that 'all there is' [74] is in constant flux, (Bohm, 1980/2002, p. 14),that is to say, as it is grounded in one undivided wholeness in flowing movement, also depicted as holomovement (Selby, 2007, p. 167). This first tenet brings Heraclitus' to mind: "No man ever steps in the same river twice." Under complexity thinking, the universe undergoes continuous creative renewal (F. Turner, 1997, p. xvii).

The second tenet elicits relationality as a fundamental ontological principle. Nothing exists if not in relation with something else. By espousing a relational narrative positing the basic "stuff" of the world as "contingent assemblages that are a function of a mode of relating" (Dillon,

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[74] We encountered this expression in several places in Bohm's writings, notably in his 'Wholeness and the implicate order' (1980/2002).

2000, p. 9), complex ontology distances itself from post-modern assertions of a fragmented, atomised social reality (Gregory, 2000). Instead, the world is seen as made up of components, interacting with each other. As they are continuously breaking their bounds, the potential for individual components to form productive associations with other components increases.

While this relational ontology obviously resonated with our own questioning of arbitrarily-drawn boundaries, be they conceptual, analytical or practical, some have critiqued this ontology for placing too much emphasis on unity and wholeness. Admittedly, at first glance, this ontology might seem close to holism. Yet it deeply questions any notion of completeness that might suggest some form of definitive boundedness.[75] For Morin (1977/2003, p. 128), wholes are necessarily incomplete;[76] they can never be totally grasped since there will always be areas of shadow, rupture and uncertainty. It therefore seems fairer to see complexity thinking as occupying a middle ground between holism on one hand and reductionism on the other. Rather than, like the former, concentrating on the whole and its environment or, like the latter, focusing on ever-smaller parts, complexity holds that no phenomenon can be properly understood unless it is linked to the whole of which it is part, as well as to wider contexts. Likewise, no whole can be understood without also looking at its parts.

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[75] Interestingly, Olssen (2008) points out that complex ontology has much in common with Foucault's radical ontology. The latter reconfigures the conception of totality or whole as an always open, relatively borderless system of infinite interconnections.

[76] As he eloquently writes (1977/2003, p. 129): "The idea of the whole is all the more beautiful and rich when it ceases to be totalitarian, when it becomes incapable of closing up on itself, when it becomes itself complex. It becomes more radiant through polycentrism offered by relatively autonomous parts than through globalism of the whole" (*Our translation*).

Complexity thinking's third foundational tenet - critical for the remainder of our research - posits 'all there is' to be multi-layered. As Osberg and Biesta (2007) and Emmeche et al. (1997) remind us, the very notion of emergence - to which we would add co-emergence - pre-supposes a passage or leap from one level of order to the next. Somewhat paradoxically, the dynamics of emergence thus imply maintenance of the level distinction, while at the same time transcending it. In analytical terms, this requires looking across multiple levels simultaneously and framing them as interrelated.

In Chapter 2, we found the enaction strand to suggest that our world could best be understood in terms of a multi-level and multi-scalar architecture of 'nestedness,' where smaller entities are imbricated into bigger ones. Such architecture would replace the classic notion of hierarchy by the notion of holarchy, [77] whose constituent units or entities are 'holons'. Holons are wholes made up of parts while themselves nested in larger wholes. In practical terms, the notion of holarchy calls attention to contextual conditions, both endogenous and exogenous to the holon under consideration. It also arguably sits well with Capra's framing (2007, p. xii) of emergent patterns in new complex orders as resulting from at least three types of 'inter-level' interactions: (1) interactions between a given whole and its wider context; (2) interactions between parts and the whole; (3) interaction between parts and their contexts. For Capra, none of these types of interactions has 'ontological pre-eminence' over the other two.

Complex ontology's multi-layered nature appears to validate how we framed the three concepts at the core of our heuristic framework in Chapter 2. Thus, if bifurcation is understood as an event signalling passage

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[77] We wonder in passing why the term 'holarchy', introduced by (Koestler, 1967, p. 48), seems so far to have won but little purchase among complexity researchers.

to a higher level of order endowed with novel properties, and if these properties are assumed to become visible only at the higher-level of emergence (Davis & Sumara, 2005, p. 313; Goldstein, 1999), this ontological stance further justifies framing bifurcation as a *macro-level* event and the radically novel properties that this event makes visible as emergent, *macro-level* effects. Likewise, as we related them to acts or speech performed within or at the fringes of the OPI, it equally justified linking the notions of interruption and pedagogic subjectivation to the lower or micro-level.

3.2.2. From classic 'from a to b' causality to focus on affording constraints

The heuristic framework we constructed suggested a form of linkage between its three core concepts. However, adhering to complexity thinking proscribes framing this linkage in terms of classic causality (Byrne, 2005)[78]. We would thus not be allowed to posit events or acts we associated with these concepts into a one-to-one relationship embedded in a particular time sequence with one of the terms viewed as separate from, and external to, the other and preceding it in time. Among other complexity thinkers, Juarrero (1999) proposes instead a revisited notion of causality, which she argues is better suited for historically and contextually embedded, multi-dimensional processes. She introduces four thought-provoking ideas, which are explored below:

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[78] Interestingly, this seems in line with Rancière's thinking. When describing aesthetic efficacy, he points at the "rupturing of any determinate link between cause and effect (2009a, p. 63). Later, he adds, " (T)he political effect (…) occurs under the suspension of any direct relationship between cause and effect " (2009a, pp. 72-73).

First, in line with complexity's multi-layered ontology, Juarrero (1999, pp. 139-140) ushers in the notion of multi-level causality. This idea suggests that causality can work in two ways: *bottom-up* as internal interactions 'determine'[79] when the whole system is 'ready' to go through a phase change, a term that we understand to be interchangeable with bifurcation, and *top down,* as the whole regulates and constrains the behaviour of parts. In view of our focus on spaces and processes of emergence, we are obviously most interested in *bottom-up causality*. Here, Juarrero sees what emerges at a higher level as largely constrained by interactions occurring at the lower level. Haggis points in the same direction when noting that processes of emergence are continually created under the effect of local interactions (2008, p. 168). Lee concurs when ascribing a foundational role to local interactions in any process of emergence (1997, p. 24). She argues that level-1 (i.e. the micro-level) is asymmetrical to level-2 (i.e. the macro-level) in the sense that the latter cannot be sustained without interactions at the lower level whereas the reverse is not the case. Put otherwise, level-1 interactions are acting as 'bounding conditions' for what happens at level-2.

This brings us to a **second** important feature of complex causality, namely, a switch from 'causes' to 'constraints.' It thus advocates conceiving causality in terms of a fabric of interdependent elements and processes that, together, either constrain or afford certain effects (Haggis, 2008).

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[79] The inverted commas take on utmost importance here since, as seen in Chapter 2, the logic of emergence precludes any form of determinism. What we understand Juarrero to suggest is therefore simply that it is the *magnitude* of fluxes and disturbances at the lower/micro-level that provides the key impetus for phase changes.

Initially, it may be tempting to ascribe negative connotations to the latter notion since it evokes rods, strings, or reins, and hence bears a connotation of inhibiting[80]. Yet, as Juarrero explains (1999, pp. 132-133), evidence reaped from communications research suggests otherwise. Rules, which initially appeared to limit possibilities, ultimately turned out to amplify the space of the possible. Following this argument, constraints emanating from bottom-up dynamics might be understood to open up, at least potentially, for new possibilities. For Juarrero, perturbations and fluctuations internal to a bounded entity thus feature among enabling constraints by "opening up for a renewed pool of alternatives that the emergent macro-structure can access" (Juarrero, 1999, p. 128;143;220). When seen to play such a positive role, constraints have much in common with 'affordances,' a term coined by Gibson (1979). This notion refers to possibilities, latent in any setting of which, actors may not necessarily be aware, but which nonetheless allow particular actions or events to take place.[81] Accordingly, when discussing possible relationships between different events, processes, or phenomena, we shall henceforth consider the terms 'afford' and 'affordances', on the one hand, and 'enable' and 'enabling constraints', on the other, as fungible terms. It should also be noted that, under bottom-up causality, constraints are seen as primarily - albeit not exclusively - emanating from the holon under scrutiny. Rather than external and context-independent, complex 'causes' are now understood to reside largely within the bounded entity itself. In addition to local interactions, initial or

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[80] Such connotation seems to transpire when Haggis (2008) advocates for conceiving causality in terms of a fabric of interdependent elements and processes which, together, either constrain or afford certain effects.

[81] In a conversation with B. Davis at UBC, May 2008, the latter suggested that Gibson's notion of 'affordances' consisting of "what the environment offers, provides or furnishes, good or ill" (Gibson 1979: 127), serves as a bridge between human actors and their perception - which may or may not be mediated through (rational) cognitive processing - and their wider more-than-human environment.

historical conditions, under which these interactions came to be, are counted among key constraints. Importantly, the role ascribed to such constraints implies neither certainty nor determinism, not even probability. All they evoke is *potentiality.*[82] Rather than considering this a shortcoming, such emphasis on potentiality might, on the contrary, be considered one of complexity's major strengths, as it directs attention to possibilities that might otherwise have been overlooked.

This brings us to a **third,** groundbreaking aspect of complex causality, albeit perhaps also the most perplexing. We are thinking here of the proposition to frame as *simultaneous* relationality what classic causality understands in terms of antecedents and consequences (Juarrero, 1999, p. 6; Mason, 2008, p. 40). For (Haggis, 2009), innumerable influences playing out in parallel within complex settings conspire against establishing conventional causal links. For her, however, even when forsaking the search for such links, inquiries addressing the question of what kinds of conditions, events, moments etc. are *co-present* with certain kinds of emergent effects can be no less illuminating. Osberg and Biesta (2003, p. 93) also describe emergent features as "existing *simultaneously* [emphasis added] with lower level components." Therefore, if local interactions - past and present - are seen to form part of the process of emergence as it unfolds, no longer can events, phenomena, processes, etc. be understood simply to *precede* certain effects occurring at a *later* point in time. Nor are we allowed to claim, as a linear understanding of process would typically do, that one set of relationships, such as those that typically play out at the micro-level, are ontologically prior to and 'give rise to' the macro-level phenomenon we are looking for (Osberg & Biesta, 2003). Yet,

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[82] According to Agamben (1999: 176-177), potentiality implies existence of non-Being and non-Doing as well as existence and presence of absence. By the same token, this notion implies uncertainty, indeterminism and fundamental freedom.

even if the higher-level unit is understood to imply something more than the sum of lower-level parts, the latter are still constitutive of the former. To solve this riddle, complex causality proposed to understand higher- and lower-level processes to *cooperate* in producing an entirely new phenomenon at the macro-level, be it an order, a property, or a relational pattern (Goldstein, 1999, p. 17). Difficult as this may be for us to grasp given our temporal and causal conditioning, complex causality thus asks us to see features and acts occurring at the micro-level as being co-present with what emerges at the macro-level (Emmeche et al., 1997). Accordingly, acts and speech denoting interruption and pedagogic subjectivation would no longer be understood simply to precede bifurcation events. Besides forming part of the process of emergence itself, they would be part of the shifts we understood to fingerprint such events. In other words, even when perceived to take place *before* bifurcation events, in some puzzling way, beyond helping give rise to such events, the perturbations or fluctuations we understand these acts and speech to bring about would now be understood to manifest also as effects making themselves felt "on the other side of bifurcation." (Juarrero, 1999, p. 8). She makes this clear when she notes that perturbations and fluctuations affording bifurcation " leave their lasting marks on the specific configuration that emerges."

This intimate link between causality and temporality in turn calls for a discussion of complex temporality. Conventional, linear temporality tends to be associated with a unidirectional, irreversible arrow. So does complex temporality as posited under the logic of emergence - at least at first glance. In Chapter 2 we thus found this logic to assume irreversible directionality for leaps from a lower level of order to a higher one (Osberg & Biesta, 2007). No longer can the phenomena, properties, or patterns that

emerge at the higher level be understood to result from past micro-level interactions only. They are also a product of 'something' that was not present at the local level beforehand (Osberg & Biesta, 2003, p. 96). Once brought about, they cannot simply be whisked away, 'unemerging,' as it were, into the mist of history. Yet, elsewhere, these same authors suggest another dimension of complex temporality: they underscore that this temporality interrupts an idea of history as being established once and for all (Osberg & Biesta, 2007, p. 44). By noting that continuously emergent knowledge and understanding call for the past to be continuously revisited in the light of the new understandings of the present, this seems to us to imply a form of reversibility, at least in conceptual terms.[83]

Other authors, whose thinking is germane to complexity thinking, seem to espouse a notion of reversible - or, at any rate, recursive - temporality. Looking at the notion of change - which, for us, cannot be dissociated from some form of temporality - from a complexity perspective, Falconer (2007) underlines the cyclical nature of this notion. For him, the notion of change is best understood as a series of cycles, blending into each other and tying together events, processes, and elements. Importantly, these cycles involve recursion (or recursiveness) and iteration - the 'here we go again' aspect of change (2007, p. 141). If, with Harries-Jones, we understand recursiveness to concern "the way in which events continually enter into, become entangled with and then re-enter the universe they describe" (1995, p. 2), this again suggests some form of *reversibility*. Interestingly, like Osberg and Biesta above (2007), Falconer also ascribes expanding dynamics to complex temporality as he

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[83] We see important epistemological implications of this conception of time: revisiting of the past from today's perspective thus makes it possible to highlight unactualised past potentialities, that is, possibilities that could not be seen from the vantage point of the past.

understands each new cycle of change to expand the content of the former.[84]

Lastly, Heidegger provides some clarity as to how one might understand complex temporality. For him, the very way we experience time makes past, present, and future co-exist (Keller, 1999). The present is nothing but the way in which mutual dependency between 'pastness' and futurity of possibilities comes to expression. The French physicist Garnier-Malet (2001), for his part, describes the present as being made up of actualised past potentialities, as including future potentialities of an actual past, and as constituting the actual past of future potentialities.

Against this backdrop we felt inclined to question the principle of irreversibility as the sole principle ruling complex temporality. We would argue that this temporality would be better understood as implying *both* irreversibility *and* reversibility. For Alhaleff-Jones[85], complexity thinking would be inclined to distinguish between, on the one hand, micro-emergence - typically at the level of individual cognition - where irreversibility tends to prevail (hence the difficulty to 'unlearn'), and, on the other, macro-emergence at the level of collectives or entire societies more likely to be, at least in part, subjected to reversible dynamics. Moreover, rather than holding on to the metaphor for time evoking a one-directional, forward-oriented arrow, in part inspired by Lash (1999), we would prefer the metaphor of a *tri-directional* spiral. In accordance with the latter metaphor, time would be understood to be oriented *backwards* as it ties the present to the past through a recursive loop. While the present

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[84] This conception of change and time comes strikingly close to non-modern temporality (Latour, 1993). Tying together different periods, non-modern temporality often brings the past closer to us than the present.
[85] Comment made during discussion at the first "Theorising Education" Conference, Stirling, June 2010.

allows constructing a new version of the past, the latter comes back as part of a new present, and so on. Time would also be oriented *outwards* as cycle of change encompassing ever-wider spheres. Lastly, it would follow be subject to an irreversible drive *upwards* to ever-higher levels of order in pace with bifurcation events.

Before closing, one last remark appears useful. It pertains to the striking affinity between complex and indigenous ontological principles as presented in Chapter 1. Both sets of principles underline interconnectedness between everything, making up 'all there is.' Both shun conventional, linear cause-effect linkages and posit a temporality infused with some form of iteration, recursion or circularity. Both are eminently attentive to contextual conditions. Accordingly, should we be able, at the end of our empirical inquiry, to show that CS perspectives somehow found their way into the overall OPI vision, in the same stride, we would be able to claim that CS engagement helped this vision come closer to denoting a complexity-informed worldview.

To sum up this review of pre-suppositions and ontological principles undergirding the complexity perspective, this perspective appealed to us by seemingly heeding Foucault's advocacy (1984) of a shift of allegiance away from a view of 'reality' foregrounding among others, limits, lacuna, boundary keeping, uniformity and stasis towards one emphasising the multiple, difference, flows and the nomadic. With its attention to the fleeting, the unstable and dynamic, the multiple, multi-layered or multi-scaled and the distributed, not to forget the interdependent and interrelated, the complexity perspective stood out as particularly relevant for approaching a world increasingly marked by porous and fluid boundaries and rapid, unpredictable change.

3.3. Key epistemological tenets underlying the complexity perspective

Social researchers adhering to the complexity perspective have taken great pains in explicating its epistemological tenets (Cilliers, 1998; Davis & Sumara, 2006; Goldstein, 2000; Osberg, 2010a). Two of them, closely inter-related, appeared to us to stand out: the first regarding interobjectivity, the second, complicity.

3.3.1. Interobjectivity

The notion of interobjectivity can be understood to be at the very core of complex epistemology (Davis & Sumara, 2006). Initially introduced in the context of Latour's actor-network theory (1996), this notion is a hybrid between inter-subjectivity and objectivity. Through this notion, Latour pointed out the need for social inquiry to encompass also the more-than-human world and to consider things or artefacts as actors - or actants - next to human agents. For (Davis & Sumara, 2006, p. 15), interobjectivity allows us to avoid being confined either to the bounded, self-referencing, subjective, or intersubjective, worlds, or to a positivist notion of a world that can only be observed from the outside. As it broadens the scope of social inquiry to encompass *both* the subjective/inter-subjective, 'I/we', *and* the objective 'it/they," inter-objectivity thus gives the social researcher licence to broach phenomena both from the 'inside' as they immerse themselves into subjectivities and inter-subjectivities, and from the 'outside' – as they look for phenomena the existence of which does not depend on human consciousness. Furthermore, whereas interobjectivity dismisses collapsing phenomena with knowledge of phenomena, it nonetheless refuses to draw a sharp

distinction between subject and object, knower and knowledge, mind and matter (Davis, 2008b). It implies instead "holding the object, the subject and culture-bounded intersubjectivity in dynamic, co-specifying, conversational relationship while locating them in a (shared) grander, more-than-human context" (Davis & Sumara, 2006, p. 15). [86] As indicated by the prefix '*inter*,' the relationship between the two worlds of subjects or intersubjective collectives, on the one hand, and the objective world on the other, is put at the centre of attention. The two worlds are assumed linked in at least two ways. First, for the objective world to become visible and knowable, mediation on the part of a human knower and observer is required [87]. Second, since the knower is also a body, she is inevitably affected by the physical, objective world and all its non-human components. As Davis and Sumara (2005, pp. 317-318) thus remind us, "(W)hereas the notion of intersubjectivity (…) operates to focus attention on personal and social phenomena, the notion of interobjectivity presses attention to the roles of the biological within the human and of the human within the more-than-human world." [88] Besides rehabilitating the body,

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[86] This epistemological stance therefore appears particularly helpful when it comes to bridging the social/ human science - natural science divide.

[87] There seems to be close affinity here between the epistemological stance of interobjectivity and that of critical realism as advocated for example by Sayer (2000) and Danermark (2002). The latter posit that there is a world 'out there', which is not a mere construct of our minds or of our social interactions and discourses but indeed has an existence of its own (this world is not going to disappear in the event of the extinction of humanity). At the same time, in agreement with (Gergen, 1999, pp. 236-237), interobjectivity implies that this world can only be approached, described, explained and interpreted though the subjective or inter-subjective filters of our worldviews, beliefs, assumptions and experience.

[88] While Latour (2004a) readily speaks about the 'non-human', the term 'other-than-human' is often found in anthropology, archaeology, history, human geography when these disciplines examine the relationships between artefacts and social communities. Davis and Sumara (2006), for their part, borrowed the

such attention to the biological directs our gaze to the wider ecological web, on which human beings depend along with other living creatures.

3.3.2. Complicity: the co-implicated researcher

By abolishing the sharp separation between 'object' and 'subject' without, however, conflating the two, adhering to the epistemological stance of interobjectivity places the researcher in an intriguing position. On the one hand, she becomes co-implicated in the phenomena that she is studying. On the other hand, she retains the ability to register how these study 'objects' interact with each other and with their more-than-human contexts. The term used to characterise this position is *complicity*. Not to be confused with 'empathy,' understood by certain phenomenologists as an intuitive understanding 'from within' the life world of the researched, the practice of complicity sits well with hermeneutic phenomenology, particularly as advocated by Heidegger and Gadamer.[89] We therefore found epistemological principles central to the latter tradition to help us further elucidate complicity's tenet of co-implication between the researcher and the researched.

Gadamer's (1960/1998) concept of pre-judgement (*prae-judicium*) or pre-understanding helps emphasise that the way researchers engage with

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qualifier 'more-than-human' from Merleau-Ponty's thinking about the phenomenology of perception (1945/2005) and from his commentator Abram (1996). This qualifier puts particular emphasis on our intimate, sensuous connection with the living landscape in which we are corporally embedded through the air that we breathe, the sound and light waves that strike our ears and eyes and the porosity of out skin (p. 68). Two considerations made this qualifier speak to us. First, it draws us away from a perception of humans as cut off from the rest of the biosphere; second, it establishes a relationship of reciprocity between the sensible world and ourselves.
[89] Davis and Sumara (2006, p. 167) refer to their experiencing deep compatibility between complexity thinking and hermeneutic inquiry.

the empirical setting they are studying and the questions they raise are a function of the culture, history, and worldview, but also the particular concerns and interests that they hold (Malpas, 2009). This notion refers to the idea that, as historically- and culturally-situated beings, we encounter the world equipped with a fore-structure or anticipatory understandings that will inevitably shape the picture we form of it. At the same time the world 'answers back', thus entering in a dialogue with us. Accordingly, since, according to Gadamer, pre-understandings can be subjected to revision as the particular research setting demands, our task in the empirical part of our research would be to put our pre-understandings to the test. If need be, we would alter them to better match the picture springing out from our engagement with the empirical terrain, listening hard what it was trying to tell us.

Davis and Sumara (2006, p. 169) helpfully provide a checklist for the attention of educational researchers wishing to conduct their research as complicit researchers. They advise these researchers to bear in mind the following four questions at the relevant stages of their research process: [90]

1) How are we complicit in (i.e. affecting or hoping to affect) the phenomena that we study?

2) How might this research be taken up?

3) How might we represent/present our interpretations?

4) How is this research *educational* [emphasis by the autors]?

We propose to reformulate this last question as follows: to what extent does this research contribute to opening up for new possibilities,

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[90] We took the liberty of altering the order in which these questions are listed so as to fit with the overall economy of our report.

thereby enlarging the space of the possible (Davis & Sumara, 1997, p. 303)?

Regarding the first question, the critique according to which complexity is largely insensitive to ethics (Morrison, 2008) appeared to us to be ill-founded. Since complicity implies that there is no such thing as a study object isolated from the researcher, the entanglement it posits between the researchers and the researched entails clear ethical implications for the researcher. As the researcher comes to realise that, simply by directing her gaze, she inevitably affects the way a phenomenon is perceived (Davis & Sumara, 2008b), this compels her to become attentive to and to take on responsibility for possible consequences or effects of her work. While Fenwick (2007) views complexity as an opportunity for loosening the longstanding ties linking responsibility to a moralistic or overtly rational discourse, (Bai, 2003), for her part, evokes how complexity "may help us to envision an ethical paradigm that could take us out of the prevailing and entrenched mode of control, domination, and exploitation so characteristic of human presence on our planet today" (2003, p. 19). For her, complex ethics are fundamentally relational, even in the absence of conscious intention or moral principles. Regardless of inevitable unintended and unsuspected consequences of our actions, our very fact of our acting makes each of us responsible for the circumstances of fellow humans. As Bai writes, "(W)e cannot avoid responsibility because we cannot avoid responding in some ways to each and every person and situation we encounter and thereby affecting the world in some ways" (2003, p. 27). For her, singling out individuals and foregrounding otherness tends to eclipse the notion of 'inter-being,' which she sees as a defining principle of complexity-informed relational ethics. By allowing us to see ourselves and other subjects as parts of one inextricable and

inescapable matrix of relationships, the ethics she advocates pull us away from the 'self-other' dichotomy, where the self sees the other as the problem. They invite us instead to think of our action in the world in terms of establishing a union between the self and the other.[91] Furthermore, as noted in Chapter 2, the enaction strand presses reflection on responsibility even further. Under this strand, complicity extends the notion well beyond social responsibility so often at the centre of educational research. It foregrounds the interdependence and co-implication between the human and the more-than-human worlds and hence our responsibility towards *all* living beings, be they humans, animals, or plants, as well as life-sustaining systems and processes. Davis (2008a) goes as far as suggesting that the very notion of complicity opens up possibility of a transphenomenal conversation between the world of human subjects and the more-than-human world. As humans acknowledge their co-implication in the unfolding of the cosmos (Davis & Sumara, 2008), the conversation they engage with a dynamic more-than-human world may be likened to "an always- evolving, ever-elaborative structural dance", (Davis & Sumara, 2008, pp. 15-16) . The terms 'conversation' and 'dance' clearly suggest a creative and harmonious relationship between the two worlds, as they are understood to contribute to emergence and maintenance of complex co-activity expanding possibility, learning, and life (Davis, 2008b, p. 4)[92]. The

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[91] Among other complexity thinkers, Stengers (2011) demonstrates such a position when she underlines the researcher's moral obligation to take a normative stance in relation to pressing matters of public concern and to be of public service in seeking to address such matters.

[92] Interestingly, from a linguistic point of view, in contrast to English conveying an almost exclusively negative connotation to this term as involvement in a reprehensible or criminal act, the French language from which it is derived also associates complicity with a harmonious relationship. Interpreted in this way, complicity suggests the possibility of a 'pact' thanks to which objective, systemic dynamics and subjective/inter-subjective human intent co-evolve.

notion of complicity thereby appears to imply that the universe, complex though it may appear at the surface, is governed by a set of principles bringing totally different rules to produce similar features converging towards the same, large‑scale structural patterns (Cohen, Stewart, & Casti, 1994).

The second and third question on the checklist will be addressed in Chapter 4, where our research strategy and methodological approach are discussed, and in Chapter 5, where understandings and insights resulting from our empirical research are presented, respectively. As for the fourth and last question, it provides the backbone for Chapter 7.

Two points remain to be examined in this section. The first pertains to the modes of reasoning that complexity thinking encourages, the second to how it constrains the language we can use, both when proffering our arguments and later, when presenting insights reaped and raising fresh questions.

3.4. Modes of reasoning favoured by complexity thinking

Arguably, complexity thinking is far from neutral with regard to modes of reasoning. For example, Cilliers (1998) adopts a critical stance towards analytical reasoning breaking down into sharply separated parts. As an instead, he proposes what he calls the *connectionist* reasoning. As the term suggests, this reasoning implies first and foremost that gathering into wholes is preferred to splitting up into parts. Focusing on collections of interconnected and interacting elements, as well as interactions and relationships within and across such collections, this form of reasoning is eminently suited for detecting patterns. By virtue of connectionist reasoning, complexity thinking invites a search for some kind of dynamic

order manifesting as fleeting and unsteady patterns. Bateson (1987) recommends aesthetics as an approach for recognising patterns and rhythms in patterns. For him, aesthetics equip us with templates doing least harm to the elegant, dynamic interconnections of the observed world while, at the same time, sparing us from being overwhelmed by its apparent complexity.

Along with connectionist reasoning - or pattern thinking - abductive reasoning arguably offers a good match for complexity thinking' emergentist logic. Drawing on two commentators of Peirce, namely McKaughan (2008) and Santaella (1997), we shall foreground a number of features characteristic for this type of reasoning which appear to sit particularly well with complexity thinking.

First, for the 'inventor' of abductive reasoning, neither deductive nor inductive reasoning can produce new ideas. For him, the former was but rigid concatenation of necessary syllogistic steps. As for the latter, it had no other option than reasoning on the basis of observation of what it perceives as facts. Peirce's critique of deductive reasoning clearly resonates with complexity thinking's rejection of universals and absolutes Davis and Sumara (2006). Strictly speaking, deductive reasoning cannot be conceived without admitting the principle that logically necessary conclusions, either true or false, can be drawn from general or universal rules. We also expect complexity thinking to find inductive reasoning equally problematic since it admits that general conclusions impregnated with a fair degree of probability as to their truth can be derived from accumulated observations of particular or individual instances. Peirce, on the other hand, presented abductive reasoning as the only mode inviting genuine creativity and inventiveness. For Peirce, the strength of this mode of reasoning lay precisely in its capacity to add something new to thought

by introducing plausible and possible knowledge about an undetermined future Santaella (1997). Far from involving a closed system of thought confined to a reductive syllogistic frame, he thus saw formulation of hypotheses that would bring together different types of propositions and resort to both analogical thinking, drawing inferences from one type of categories to another type, and to speculation conjuring up imagined possibilities, as paving the way for open human inquiry. In others words, rather than deductive inferences sticking strictly to what is set out in premises, abductive reasoning favours ampliative inference adding to that which is already known or received (Swoyer, 2003).

Second, according to Santaella (1997) abductive reasoning draws heavily on possibilistic logic, [93] which, seems to us to sit well with complexity thinking's logic of emergence. Both enthrone the principles of possibility rather than probability, let alone certainty. Both direct attention to how things 'may be' rather than to how they 'are likely to be,' let alone how 'they are' Santaella (1997).

Third, we see convergence between abductive reasoning and complexity thinking in terms of directionality of their respective thought processes. Abductive reasoning - at times also dubbed 'retroduction' - moves backwards from what is framed as the result of certain conditions or

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[93] Particularly applied since the mid-1980's in the domain of artificial intelligence, possibilistic logic aims at addressing problems fraught with uncertain and incomplete information (Dubois & Prade, 2004). In contrast to classical propositional logic positing affirmative statements that are either true or false - hence often called two-valued - possibilistic logic admits that situations fraught with insufficient knowledge require giving up any notion of one particular *a priori* truth value. As it allows for multiple, equally plausible propositions and for more than two truth values, this logic appears to inform Peirce's abductive reasoning. The latter typically starts by looking at a variety of hypotheses considered equally 'true' or plausible before only tentatively and provisionally opting for one in particular.

circumstances. Again, this mirrors complex causality's inclination to start from *effects* before moving back to possible affordances or constraints.[94]

Lastly, by admitting that information will inevitably always be incomplete, abductive reasoning sits well with complexity's claim that no phenomenon is completely knowable (Cilliers, 1998).

A third mode of reasoning constitutes in effect complexity thinking's specific fingerprint. Rejecting, as seen earlier, sharply drawn, binary opposites that he calls disjunction, Morin advocates instead for dialogics as the best way to do justice to "the complexity of the real" (1991, p. 197). He thus refutes the disjunction imposed by the principle of *tertium non datur*, under which, of two contradictory propositions, one is necessarily false while the other is true (1991, p. 200) and under which, therefore, a third (possibility) is excluded. By contrast, dialogics imply inclusive, non-binary 'and/and' reasoning. Inclusion of the third allows two contradictory or competing propositions to co-exist and even to be associated (Fortin, 2008, p. 33). Dialogics not only understands each term to need the other in order to define itself, even if in opposition to the other. What is more, it turns two contradictory propositions into terms that can complement each other as they both to contribute to a shared whole. Whereas each proposition is both true and false in its partiality, both become true in their complementarity (Morin, 1991, p. 205). Put otherwise, the two terms are at the same time mutually irreducible, each remaining different from the other and yet inseparable. For example, in the case of the OPI, dialogical reasoning would suggest the possibility of a governance model for marine commons that would bridge the divide between approaches informed by the contrasted logics of an indigenous worldview

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[94] This directionality clearly differs from deductive and inductive reasoning moving respectively top-down and bottom-up in a linear way.

and modern rationality leaning on western science. It would warrant our exploring the extent to which the OPI successfully sowed the first seeds of a vision within which the two worldviews could be seen not only to co-exist peacefully, but indeed engage productively so as to allow seemingly incompatible or antagonistic features from both to be reframed as complementary or mutually supportive.

3.5. Complexity language

As with any other perspective, whoever wishes to remain consistent with complexity, and - in Gadamer's words - with the 'horizon of understanding' it implies, will encounter constraints with respect to what language is allowed. Adhering to complexity's meta-theoretical principles therefore requires us to forsake certain terms and words commonly used also in academic work. Conversely, once a particular language is chosen, it comes to function with its own inflections and images (Kuhn, 2007, p. 161). Accordingly, as we adopt complexity's organising concepts and metaphors, we are in effect contributing to 'languaging' a new world of understanding into existence.

Problematic terms include:

'Alternative': Since, as just seen, dialogics - that we view as defining for complexity thinking - substitutes the 'and/and' for the 'either/or' axiom, it no longer seems to make sense to talk about alternatives in the conventional sense. Instead of understanding alternatives in terms of *mutually exclusive* possibilities, where that which is opted for or actualising replaces or overrides other possibilities, it now becomes conceivable for several, distinctively different options to co-exist side by side. Furthermore, it now becomes conceivable for these 'alternatives' to

enter into a constructive dialogue, even complementing each other within ever-shifting and ever-renewed associations. To mark this new understanding, we shall henceforth put this term between inverted commas.

'Because': Complex causality makes this seemingly harmless and uncontroversial conjunctive word tricky. For us, it has a clear connotation of conventional causality suggesting the possibility of linking one particular cause to a certain effect. We shall therefore systematically replace 'because' either by 'since,' 'on the grounds that,' or 'under the effect of.' For the same reason we shall eschew the term explanation and replace it by 'explication.'

'Closure': Under an ontology positing 'all there is' to be in constant flux, this notion becomes devoid of meaning. It negates the open-ended and ongoing character of change assumed under complexity thinking (Falconer, 2007; Osberg, 2005). For the same reason, we shall also be wary using the qualifier 'final.'

'Determine': Buying into the logic of emergence with its emphasis on uncertainty and unpredictability proscribes this verb.

'Environment': The notion of 'nestedness' proposed by the enaction strand and the notion of holarchy that we wish to promote both imply that the smallest holons are imbricated in ever-wider holons. Consequently, talking about the 'environment' in relation to human/social groups no longer makes sense. Furthermore, the very concept of 'nestedness' ' makes it difficult to draw a sharp distinction between what is internal and what is external to a given holon. For this reason, we shall henceforth surround these two qualifiers by inverted commas.

'Fact': As the principle of complicity prompts the complexity-informed researcher to rally behind the hermeneutic tradition's fundamental

questioning of the notion of 'fact,' when writing, we shall systematically replace this term by 'circumstance.'

'*Given*': Acknowledging, again with hermeneutic phenomenology, that no phenomenon is given to us independently of how we interpret it, the principle of complicity also prompts us to 'outlaw' this word when used as a preposition and a noun. We shall return to this point and other linguistic and terminological constraints in the methodological section of Chapter 4 as well as in Chapter 6.

'*Progress':* Whereas, undeniably, some strands of complexity thinking derived from evolutionary biology hold up the belief that the human and more-than-human world both undergo ever-increasing complexification, they nonetheless firmly reject the idea of linear and ineluctable progress.

'*Reality*': Following what we understand to be complex ontology, we shall henceforth strive to refrain from using this term, replacing it either by the notion of life world or, when also referring to the more-than-human realm, to the Bohmian expression of 'all there is' (1980/2002). Should the discussion nonetheless require us to evoke this notion, we shall make sure to surround it by inverted commas.

'*Solution':* We do not consider this term appropriate under complexity thinking. Not only does it suggest a form of closure, albeit possibly temporary. More worrisomely, it seems to suggest the idea of only one 'correct' response to a problem where several, equally appropriate responses might be called upon simultaneously.

'*Subject' and 'subjectivation'*: Interobjectivity's rejection of a sharp dichotomy between subject and object has important implications for how the concept of 'subjectivation' can be approached. No longer can subjectivation be understood as relating to the sole experience of particular individuals or groups; it must also be ascribed an objective dimension. The

complexity-informed educational researcher's best option, therefore, appears to be broaching the concept of pedagogic subjectivation as a construct which, in empirical terms, can be apprehended from two angles: one angle implies studying this construct from the 'inside', as it were, with a view to highlighting agents' subjective/intersubjective experience of positive potentiality. Since, however, it is now understood also to encompass an objective dimension, the other angle implies apprehending this construct from the 'outside'. When seeking to establish to what extent CS speech denoted pedagogic subjectivation, in addition to probing the extent to which CS protagonists experienced their own ability to bring a distinctive contribution to addressing the 'problem-in-common', such epistemological dualism implies that we would also be required to assess to what extent they brought forward ideas and proposals enlarging the space of the possible, regardless of whether or not, in so doing, they seemed aware of such achievement.[95] To mark this dualism, we decided henceforth to surround the notion of 'subjectivation' by inverted commas when evoking it in the context of our empirical inquiry.

'*True:*' As it assumes that the depiction of any research setting is the product of a conversation between this setting and a co-implicated researcher looking at it from his or her particular perspective, complicity

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[95] In a conversation at UBC in May 2008, B. Davis pointed out that interobjectivity opens up for the possibility to study complex systems, their constituents and their context from both the internal/phenomenological angle of human experience and understanding and from the angle of the external observer. The advantage of such epistemological dualism is that it does not, as would be the case for exclusively phenomenologically-oriented inquiry, require the researcher to limit the themes she selects and the constructs she introduces to those that are making sense to the researched and are consistent with the latter's experience and life world. It would also allow her to bring in concepts and constructs that she considers relevant for the setting, allowing her to ask questions or to point at possibilities that either remained tacit/implicit or were seemingly eschewed by the researched themselves (*Personal notes of the conversation*).

does not admit any absolute and generalising assertion about what is true or not. For this reason, any claim we would make in relation to understandings reached through our empirical inquiry could only be cautious and context-bound.

Summing up

We were aware from the outset that our decision to adhere to complexity's meta-theoretical principles and to remain consistent with it all along our empirical research process would carry with it wide-ranging implications for the way in which we would conduct the empirical inquiry itself as well as for what might legitimately be expected to emerge from it. As with any decision to venture into less-travelled territory, we thus anticipated this decision to carry both advantages and downsides. Among the former, we expected its emphasis on open-endedness to help us remain attentive to new, unexpected twists and turns in our inquiry, not to mention unsuspected implications of our heuristic framework. Perhaps better than any other perspective, we expected us to prepare us for confronting the unknown and dissuade us from expecting particular outcomes at the end of our research process. In that sense it would prepare us well for heeding the advice that Burdick and Sandlin lend to educational researchers, namely to resist any urge to grasp, capture, and classify and instead simply witness what arguably becomes visible along the way (2010, p. 355).

A possible drawback in opting for anchoring our heuristic framework to the complexity perspective might be that, although steadily growing, the educational research community developed around this perspective remains relatively small to this day. Consequently, the pre-suppositions and meta-theoretical stances it implies might be met with

greater perplexity from some quarters than if we had opted for a more established research perspective.

CHAPTER 4: LIGHTHOUSES AND SEARCHLIGHTS

Introduction

This chapter is divided into three parts. **Section 1** lays bare the landmark decisions we took relative the strategy we would adopt for the empirical part of our research. It dwells in particular on the type of case we would opt for, how we would circumscribe its scope, what 'units' of analysis we would choose and how we would broach the issues of time and change central to our research. Prior to refining our research questions, this part further discusses how we strove to bridge the chasm between the three theoretical concepts at the core of our heuristic framework and the empirical realm. **Sections 2** and **3** highlight respectively the methodology and the analytical procedure we propose for carrying out our research strategy.

4.1. Research strategy[96]

Introduction

When Davis and Sumara (2006, p. 169) ask us as complicit researchers how we shall take up our research, we understand this to mean making explicit our research strategy. Recognising that limits must be

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[96] It might be objected here that our experimental attitude renders problematic the very notion of research strategy, which often implies pre-set goals. In reply, we shall point out that few, if any, experimental endeavours can reasonably be assumed to set out without any notion of purpose, if nothing else, the purpose of experimenting itself.

drawn in order to say something meaningful about the world and also for the pragmatic reason that this is the only way for finite means to handle complexity, complexity in no way preclude approaching a given empirical setting selectively and focusing on particular segments of relationships. As Davis and Sumara write: "…complexity thinking acknowledges that 'compression' and 'reduction' of information are necessary in order to make sense of experiences". They add "…humans *must* [emphasis by the authors] differentiate, interpret, filter and discard in order to deal with the vast amounts of information that confront them at every moment." (2006, p. 26). For Cilliers (1998), complexity researchers cannot possibly embrace everything in their studies and can therefore only hope to catch partial glimpses of the empirical settings they are studying. Bohm (1980/2002, p. 14), for his part, underlines that positing that 'all there is' is grounded in one undivided wholeness should not prevent us from adopting lenses that would enable us *temporarily and for limited purposes* to reduce the number of phenomena we are studying as if they had their own autonomous existence.

4.1.1. The abductive strategy for case research

More often than not, qualitative researchers opt for collecting what they call data for the purpose of developing theories tying together certain phenomena, events or processes. Others, still under the influence of the positivist tradition, choose to start from one or several hypotheses deductively derived from a general rule or law for the purpose of seeking confirmation or invalidation in specific cases[97]. None of these approaches

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[97]Butte College, Centre for Academic success,
http://butte.edu/departments/cas/tipsheets/thinking/

arguably constitute good matches for complexity thinking. On the one hand, when approaching the OPI equipped by our heuristic framework, we were clearly departing from Glaser's grounded theory approach (1992) under which no *a priori* theorising is foreseen to guide empirical fieldwork. On the other hand, the complexity attitude's rejection of hypotheses embedded in "universals and absolutes' (Davis & Sumara, 2006), compounded by the experimental spirit that would animate us throughout our empirical inquiry, proscribed our adopting a strictly deductive approach. This left us with a third strategy which Dubois and Gadde (2002) call the abductive strategy for case research. Besides being informed by abductive logic, this research strategy seemed to us to present the advantage of allowing the researcher to lean on a pre-elaborated framework to guide her research and help formulate research questions. Starting from a practical problem (as we indeed did in Chapter 1), it recognises that there are infinite possibilities for making sense of observed phenomena, events and processes. Eminently pragmatic, it admits that, for the sake of manageability, a theoretical framework is required in order to identify some possibilities as being the most relevant. That way alone, it claims, can we find our way in the world, take action and escape bewildered paralysis. What is more, it encourages the researcher, as she elaborates such a framework, to bring together and combine concepts possibly never brought together before, as we did in Chapter 2.

We nonetheless depart from Dubois and Gadde in one important respect. We would not imitate them in combining our heuristic framework with grounded theorising emanating from empirical observations made along the way and in continuously adapting and amending this framework. Instead, we would hold on to our heuristic framework as initially constructed, while adapting and amending the research questions derived

from it so as to reflect understandings and insights gleaned along the way. Going back to Peirce (1903), we did not find that abductive reasoning required the researcher to dismiss along the way the presumptions and guiding concepts with which she started out. As we understood Peirce, certain hypotheses or guesses can be sustained throughout an inquiry, thereby providing a 'red thread' to follow, until a provisional conclusion is reached regarding their plausibility. Following this precept, we opted for holding on to our heuristic framework and its core concepts until we arrived at preliminary and provisional conclusions. Only then would we be able to discuss - as honestly and transparently as possible - any challenges that this framework confronted us with, both in theoretical and empirical terms (Santaella, 1997). One major advantage we saw in this way of proceeding was that it would prevent us from losing focus and from drifting astray in our encounter with what we anticipated would be a particularly intricate research setting. A strategy informed by the abductive logic would furthermore present the advantage of admitting that the researcher has no assurance that the chosen theoretical framework will prove a success in the particular setting under scrutiny, and that the only justification for trying it out is the hope that it will serve to inform future research (Peirce, 1903). We found such an attitude to sit particularly well with experimentally-oriented research. It invited us to set out on our journey with no expectation other than reaching conclusions[98] formulated in a tentative or interrogative mode, while remaining conscious that our framework offered but one among many lenses for exploring our case.

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[98] Henceforth we shall understand 'conclusions' as the overall patterns discernable in understandings. Understandings, for their part, originate in inferences drawn from our documentary material.

4.1.1.1. The case study approach

Dubois and Gadde combine the abductive research strategy with the case study approach. This approach seemed particularly well-tailored to complex epistemology under which there are no general structures of meaning inherent to human experience across time and space. Complexity thinking tells us that any setting is unique with its peculiar historic and initial conditions, contextual contingencies and dynamics[99]. Furthermore, our decision to focus on one initiative only made the *single* case study format an obvious choice.

Turning next to what type of single case study we opted for, among the different types of case studies that Yin (2003) identifies, namely the exploratory, the descriptive and the explanatory case, ours clearly belongs to the first type. We saw that complex causality does not admit explanatory studies based on the 'a causes b' type of explanations. Likewise, its affinity with hermeneutic phenomenology brings it to question the notion of (pure) description. Beyond these considerations, however, the *exploratory* case study seemed the perfect format for whoever opts for the abductive research strategy. Furthermore, rather than conducting a fully-fledged case study - as conventional empirical studies would typically do - we opted for a format we called 'proto-exploration'. The primary reason for choosing this was that it signalled our positioning in a resolutely experimental phase upstream from - and possibly preparing the ground for - a more complete study. We anticipate that some might

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[99] It should nonetheless be noted that, if complexity rejects the notion of generalising conclusions of relevance to a multiplicity of cases, it does not preclude general dynamics *per se*. For example, the emergence and enaction strands both ascribe potential to all dynamic systems sustained by local interactions for giving rise to emergent properties.

object that, unlike a fully-fledged case study, this format would preclude reaching a well-grounded conclusion regarding the extent to which the OPI actualised the potential we tentatively ascribed to it for enacting a space in which a democratic education process unfolded. To this we would respond, first, that, since complexity posits any study as partial and rejects any form of definitive reply to research questions, it would not expect even a fully-fledged study to yield entirely satisfactory conclusions. Second, for all its preliminary, and inevitably limited, character, we nonetheless anticipated our proto-exploration to provide credible clues with respect to the central question that informed our research journey. At the same time we expected our inquiry to lay bare challenges as well as windfalls ensuing from our attempt to adopt a research strategy and to apply a research methodology in line with complexity's meta-theoretical tenets peculiar to complexity.

4.1.1.2. Further circumscribing the scope of our case study

Any researcher opting for the case study approach is required to delimit the slice of the empirical terrain to be included in the case. Doubtless, boundary drawing is especially challenging for complexity-informed researchers. We were thus faced with the following conundrum: how could we remain consistent with a perspective emphasising interconnectedness between a multiplicity of components, also across boundaries and scales, while at the same time keeping our study manageable? How might we avoid the pitfall of reverting to a reductionist approach, with the risk of missing important relationships between constituent elements? Fortunately, and unlike the naturalistic school often wedded to thick description (Lincoln, 1985), complexity epistemology gives the researcher licence to focus on a few selected dimensions under

the following conditions: (a) the dimensions selected are compatible with complexity's ontological assumptions and (b) those left out are merely pushed into the background, ready to be pulled to the forefront if deemed justified. Incidentally, such a selective approach also finds support among case study theorists (Tellis, 1997).

For Davis and Sumara (2008), complicity implies that the boundaries, both analytical and physical, of any complex and open collective are always contingent on the criteria the researcher applies for distinguishing this entity from its backdrop, Cillers (2007, p. 88) echoes this by pointing out that, whereas there will always be a need for drawing boundaries, the latter will vary according to the perspectives and research strategies adopted by the researcher. In other words, the case under investigation only exists by virtue of the decisions that she makes. Accordingly, since, when looked at through a complexity lens, the OPI had no objective, pre-given boundaries, those we drew around it, would inevitably be disputable. The conundrum that confronted us, when we sought to delimit the case, proved all the more daunting that, when we first approached the initiative, it came across as a nebula characterised by fuzzy and fluctuating boundaries. How we sought to circumvent this conundrum will be discussed at greater length in Chapter 6, where we review a number of challenges we encountered during our empirical inquiry.

4.1.1.3. Identifying our 'units' of analysis

The next question we needed to address was what phenomena to put at the centre of our inquiry, and hence what to elect as our units of analysis. As we broached this issue, we were confronted right away with one particular problem: since complexity thinking expressly invited us to

highlight interrelatedness (Haggis, 2009), we wondered to what extent it would give us licence to identify discrete units of analysis as this might take us back to reductionist thinking. In other words, would identification of such units not run counter to complexity thinking's precept of shifting attention from isolated study objects towards interrelationships? Valsiner (1998) brought us some reassurance on this point. For him, conceiving agents and context as being engaged in a "seamless relation" easily results in the researcher being "left without the phenomena that interested him/her in the first place" (1998, p. 15). Haggis (2009) confirms that the complexity perspective warrants a strategy of zooming in on some aspects or characteristics of local interactions - including particular protagonists - provided the researcher keeps in mind that the (provisionally and tentatively) bounded⁭ unit of analysis is caught up in a wider web of interrelations. Even so, in order to signal our persistent uneasiness with the term 'unit', we shall henceforth put it in inverted commas.

We found Capra (2007) to propose an interesting way of avoiding isolating 'units' of analysis from the wider web of relationships in which they are enmeshed. His distinction, already mentioned in Chapter 3, between interactions involving respectively (a) a given whole and its context(s) - type-1 interactions, (b) parts and whole - type-2 interactions, and (c) individual parts and their contexts - type-3 interactions, appeared helpful, also in empirical terms. The first-mentioned would alert us to how other contemporary initiatives addressing governance of commons in the Salish Sea affected the OPI vision. The last-mentioned would remind us that the individual organisations making up the OPI were also caught up in relationships transcending the OPI's boundaries. It would, for instance, direct our attention to constraints experienced by CS participants in OPI-discussions as a result of CS positions taken outside the specific context of

the OPI. While obviously keeping in mind these two types of interactions, two considerations prompted us to focus on type-2 interactions. We recall here that complex causality takes into account both bottom-up/feed-forward and top-down/feedback effects (M. E. Lee, 1997). However, two considerations led us to concentrate on the former. First of all, for Lee, the movement from micro- to macro-level is the constitutive vector behind emergent dynamics. Put otherwise, micro-level interactions are acting as 'bounding conditions' for what happens at the macro-level. Accordingly, when transposed to the case of the OPI, discussions among the different S&S Coalition members and partners and exchanges with the CS could be understood to fuel and sustain the momentum the OPI displayed in its heyday. Conversely, less frequent interactions between its two core instigators, the GSA and P4PS, but also between other S&S Coalition members and partners after 2003, arguably led it to peter out and to fall into dormancy. Secondly, our own preoccupation with democratic processes further spoke in favour of privileging bottom-up/feed-forward effects over top-down/feedback effects.

We next proceeded to eliciting the particular 'units' of analysis on which we would focus. In Chapter 2 we saw that, for Osberg (2010b), affirmative orientation towards the future often comes to expression in the form of visions emerging from collective experiments. This prompted us to choose the vision carried by the OPI as a whole as our primary 'unit' of analysis[100]. However, under the logic of emergence, this 'unit' of analysis

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[100] One could say that, by making a vision of our primary 'unit' of analysis, we assumed ideational phenomena to play a performative role in human affairs. Our undertaking hereby had some affinities with what Geertz (1983, p. 153) calls the ethnography of thought. As ideation/ thought-forms/visions are in themselves the 'units' to study, careful examination, both of the context in which they are generated, and of the internal processes through which they are called forth, is required.

could not stand on its own. A second set of 'units' was required, this time at a lower level of analysis. In other words, as discussed in Chapters 2 and 3, we were required to look at *two distinct* levels of analysis, namely, (a) the micro-level at which the local interactions sustaining the process of emergence took place, and (b) the macro-level at which what emerged from this process became visible. As we framed the vision that informed the OPI as an emergent phenomenon visible at the macro-level, we in effect elected it as our macro-level 'unit' of analysis. At the lower level, the 'units' of analysis were to be the visions articulated by protagonists taking part in local interactions. When descending to the latter level, our task would therefore be to construe visions held by CS protagonists on the basis of statements made during transboundary meetings convened by the S&S Coalition, at which the OPI was discussed.

Besides being distinct in analytical terms, we expected the two sets of visions also to be distinct in terms of content. We thus recall that the enaction strand assumes the constituent parts of a collective to be ignorant of the behaviour of the collective as a whole, as they respond only to information available to them locally (Davis & Sumara, 2006).

4.1.1.4. Retrospective and longitudinal case study: Taking time and change into account

In Chapter 2 we saw that novelty was at the centre of both a Rancierian and a complexity-informed conception of democratic education. Under the former conception, novelty comes to expression through renewed, transformed - or awakened - subjectivities. Under the latter, and in particular through the lens of 'strong' emergence, radical novelty implies shifts and leaps to a higher level of order. Under both conceptions,

novelty implies some form of change, which in turn, cannot be understood outside some form of temporality. Accordingly, as we sought to link the conception of democratic education we settled for in Chapter 2 to the OPI, it appeared obvious that we would pay particular attention to the temporal dimension. We had here a choice between two gazes, namely (a) the retrospective gaze, taking stock of changes in the macro-level vision *after* they occurred, and (b) the longitudinal gaze, tracking changes or shifts that this vision underwent over time. Rather than considering the two gazes mutually exclusive, complexity's foregrounding of dynamic processes and trajectories seemed to us to speak in favour of combining the two gazes. On the one hand, in view of the indeterminacy characterising any process of emergence, looking back would constitute the *only* way for a trajectory to become visible (Juarrero, 1999). The retrospective gaze, then, would enable us to detect leaps marking bifurcation points - or as Juarrero calls them - 'phase changes' (1999, pp. 8-9). It would also reveal how what seemed to be novelty might have been nothing but revival of the old (Agamben, D'Isanto, & Attell, 2009, p. 97). The longitudinal gaze, on the other hand, would make it possible to look more closely at particular shifts one by one, as well as at the changing conditions that possibly made them happen.

Both retrospective and longitudinal inquiry implies carving out certain periods of time, albeit of different duration. While the former required us to set certain time boundaries delimiting a particular time span over which to study the OPI, conventionally the latter implied tracking changes over time in our 'unit' of analysis by comparing it with itself at two or more different points in time, or phases, within a bounded period (Stroup, 1997, p. 126; Yin, 2003, p. 49). It might be objected here that longitudinal analysis means relapsing into classic chronological order, both

one-directional and pointing forward. In reply, however, we would recall that also the logic of emergence posits processes of emergence - and hence bifurcation - to be subject to the arrow of time. We would also recall that complexity views past events and initial conditions as an integral part of the features and properties emerging at a *later* point in time. Lastly, without the longitudinal perspective, two important aspects would escape our attention: first, in what respect(s) exactly the vision was altered after a bifurcation event occurred and, second, what other, equally plausible, potentialities might have actualised through this event.

In Chapter 3 we found complex temporality to frame change – and, by extension, time - as being made up of iterative and recursive cycles blending into each other and tying together different events, processes or elements (Falconer, 2007, p. 144). Such framing obviously speaks against chopping up time into discrete points or spans of time assumed to be independent from each other. Yet Falconer himself recognises the difficulty of framing change as a series of seamlessly interlinked cycles. To overcome this difficulty, he recommends looking at singular manifestations, which he calls 'epiphanies of change', through which new states of order, albeit highly unstable, become empirically visible (2007, pp. 145-146). Finding striking resemblance between such episodes and bifurcation events as understood in Chapter 2, we read this as giving us licence to identify phases during which different avatars of the macro-level vision that informed the OPI was brought to light. Identifying phases rather than precise points in time seemed to make all the more sense, also in empirical terms, that, rather than confining ourselves to what became visible at one particular point in time, it would enable us to look at several occasions within one particular phase, possibly over several months, on which the overall vision informing the OPI was presented to wider

constituencies. This, we anticipated, would enable us to catch sight of certain nuances brought to the vision during the phase concerned that we might have missed, had we concentrated on one particular version presented at one point in time only. Comparing in turn the visions that became visible during during different phases in the OPI's heyday, as the longitudinal perspective would have it, would not only allow us to detect noteworthy shifts over time, but would also present the advantage of somehow linking the different phases to each other. This seemed to us to provide a good safeguard against considering them as discrete and endowed with independent features. Two additional safeguards would help us to avoid such a pitfall:

First, by brief depicting the initial conditions common to all phases - including those preceding the specific set of interactions that made launching of the OPI possible (Haggis, 2008, p. 168).

Second, and perhaps most importantly, by framing the period we selected as our study period*as one* coherent cycle of which the phases identified would all be part.

Within this overall cycle, we would seek to detect *both* effects, visible at the macro-level , of possible bifurcation events, *and* acts at the micro-level involving questioning as well as presenting 'alternative' proposals on the part of CS representatives. We thus expected our adopting a temporal 'bird's-eye' view to allow us to perceive, as complex causality posits, macro-level effects and certain acts occurring at the micro-level as largely co-present. Such foregrounding of simultaneity in turn carried with it a practical implication: it left us with an open choice regarding what level to start with. Davis and Sumara (2006) recommend the strategy they call 'level-jumping' as a way of looking at phenomena understood to co-occur at two or more different levels. Goldstein's (2000, pp. 16-17), on the

other hand, warns us against the analytical difficulties we might run into when applying this strategy. Looking simultaneously at several levels and their mutual relationship, notably in organisational settings, will, he claims, inevitably give rise to some confusion about what is happening at what level[101]. While in no way dismissing this warning, we decided nonetheless, at our own risk, to make such level-jumping strategy part of our experimental attitude when seeking to provide a credible reply to RQ. IV. As it involved alternating focus between, on the one hand, successive versions of the vision that emerged at the macro-level of the OPI during different phases of its heyday, and, on the other, acts and speech performed at the micro-level by CS protagonists, during these same phases, we expected this strategy to help us remain attentive to possible interdependencies between what we saw happening at each level, and keep in mind their simultaneous co-implication. RQ.II and RQ. III, would require us to look for acts and speech that came to expression during transboundary meetings convened by the S&S Coalition, or in other relevant fora, and denoted interruption and pedagogic subjectivation on the part of CS representatives. While, yet again, the OPI's heyday would be framed as one cycle, this time, we would break it down into two distinct, but adjoining, sub-cycles that we would call Sub-Cycle 1 and Sub-Cycle 2. The rationale for the latter decision will be further explicated in Chapter 5.

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[101] While also emphasising that distinction between several analytical levels forms an important part of complexity-informed research protocols, Cilliers (1998) enjoins us to keep in mind that, both analytically and in 'reality', the various 'levels are intertwined'.

4.1.2. Refining the four research questions

Having established that the abductive strategy warranted using our heuristic framework as a piloting device throughout our empirical inquiry, the last task to be addressed was to refine the research questions derived from this framework, notably in the light of our discussion in Chapter 3 or of strategic decisions explicated in this chapter.

The first three research questions formulated in Chapter 2 were, we recall, the following:

RQ.I: To what extent did the vision that emerged at the macro-level of the OPI appear to have undergone one or several bifurcation events?

RQ.II: To what extent did interactions that took place at the micro-level include moments denoting interruption on the part of CS protagonists?

RQ.III: To what extent did interactions that took place at the micro-level include moments denoting pedagogic subjectivation on the part of CS protagonists?

These research questions brought in their wake the thorny issue of anchoring the three concepts of bifurcation, interruption and pedagogic 'subjectivation' to the concrete terrain of the OPI. Adhering in this respect to a central critical realist tenet (Danermark, 2002, p. 79), we did not see conceptualisation as an end in itself. For these authors, once a set of concepts are elaborated, a decision is required regarding, first, what phenomena 'out there' can be related to these concepts and, next, what semiotic referents are proposed for flagging the presence of these

phenomena. Without elucidating how we expected bifurcation, interruption and pedagogic subjectivation to manifest empirically, we would not be in a position to detect relevant moments or episodes in the history of the OPI.

We found Kolcaba (2003) to propose a helpful two-step strategy bridging the chasm between the lofty sphere of conceptual elaboration and the empirical terrain, messy and swampy as it sometimes is. The first step she recommends is to determine what attributes are understood to belong to, or to define, the theoretical concepts concerned. What she calls 'attributes' are qualities, properties or relationships which, taken together, specify characteristics understood to be peculiar to these concepts, thereby helping set their boundaries. We shall present the second step in Section 4.2. below.

Rather than being elaborated in a vacuum, theoretical concepts are, it seems to us, often inspired by, and secured practical relevance through, concrete circumstances and events, be they current or historical. This was clearly the case when Rancière illustrated the concept of dissensus - and hence also of interruption - through concrete historical acts such as that performed by Olympe de Gouges under the French revolution. As she was about to be beheaded, the latter called into question women's exclusion from the revolutionary assembly while being 'entitled 'to be sent to the scaffold (Rancière, 2004b). As for the concept of pedagogic 'subjectivation' (Simons & Masschelein, 2010, p. 599), it was inspired by the inventiveness displayed by Flemish students who knew no French when being presented with a bi-lingual Dutch/French text book by their teacher, Professor Jacotot, who himself knew no Dutch (Rancière, 1987). As we shall see shortly, such examples proved helpful when it came to defining attributes for these two concepts.

By contrast, when it came to finding concrete examples linking the concept of bifurcation to social settings, and, more precisely, to human envisioning, we found ourselves pretty much left to our own devices. We recall, however, that, when discussing it in Chapter 2, we associated the concept of bifurcation with radical novelty which we in turn understood to manifest through two qualitative shifts, namely outward expansion bringing an ever-wider array of distinctively different options to be contemplated, and a leap upwards towards more relational and contextualising ways of thinking about the problem at hand. As a first step, it therefore appeared legitimate to consider these shifts as attributes for the concept of bifurcation.

Against this backdrop we deemed it necessary to refine **RQ.I** to reflect this decision, while at the same time taking into account strategic decisions we took in this chapter with respect to the temporal dimension. This brought this question to read as follows:

> To what extent did successive versions of the macro-level vision that informed the OPI during its heyday appear to display radical novelty in the form of qualitative shifts widening the range of distinctively different perspectives and approaches addressing the plight of the Salish Sea and denoting a significantly more relational and contextualising way of thinking about this problem?

Turning to **RQ.II**, as just seen, Rancière understands interruption to come to expression when individuals or collectives challenge the existing socio-political order as well as the logic undergirding it. Transposed to the OPI, the logic that would be challenged would be that informing the early proposal that the S&S Coalition put forward for a

transboundary MPA. Quite obviously then, the attribute we would relate to interruption would be acts, notably in the form of defiant behaviour, or dissenting speech through which FNs and tribes affected by the OP proposal called into question what they thought was 'wrong', unacceptable or unsustainable about this logic.

This led us to refine **RQ.II** as follows:

> To what extent did interactions that took place at the micro-level include dissenting speech and defiant acts on the part of CS representatives challenging the proposal for the transboundary MPA on the table, as well as the logic underpinning it?

Lastly, as they refer to Rancière's Ignorant Schoolmaster, we found Simons and Masschelein (2010) to relate pedagogic subjectivation to moments where individuals - to whom we added collectives or groups - brought to the fore a distinctive and inventive contribution in relation to one particular 'thing- or problem-in-common'. As seen in Chapter 3 (p. 68), since inter-objectivity calls into question a sharp distinction between subject and object, thereby also challenging a notion of subjects and subjectivity cut off from its objective context, some rethinking was required in relation to the concept of 'subjectivation'. Accordingly, when seeking to establish to what extent CS speech denoted pedagogic subjectivation, in addition to probing the extent to which CS protagonists experienced pride in their own ability to bring a distinctive contribution to addressing the 'problem-in-common', the epistemological dualism imposed by interobjectivity implies that we would also assess to what extent these protagonists brought forward ideas and proposals enlarging the

space of the possible, regardless of whether they were themselves aware of such achievement.

This in turn put us in the position to refine **RQ.III** as follows:

To what extent did interactions that took place at the micro-level include speech on the part of CS representatives through which they brought to the fore ideas and perspectives differing distinctively from those prevailing among non-native protagonists and, in so doing, to what extent did they seem aware of their own ability to bring a distinctive contribution?

Lastly, as formulated in Chapter 2, **RQ.IV** read as follows:

To what extent could possible moments denoting interruption and pedagogic subjectivation on the part of CS protagonists be shown to have contributed to bifurcation events calling forth radically novel perspectives and approaches for addressing the plight of the Salish Sea?

Reflecting the way we just refined the three first research questions and in the light of the discussion of complex causality in Chapter 3, this question would now read:

To what extent could dissenting speech and defiant acts on the part of CS representatives as well as speech, through which they brought to the fore ideas and perspectives differing distinctively from those prevailing among non-native protagonists, and through which they signalled pride in their own ability to bring a distinctive contribution, be argued to have afforded one or several bifurcation events calling forth, at the macro-level, radical novelty in the form of qualitative shifts widening the range of distinctively different perspectives and approaches addressing the plight of the Salish Sea and denoting a significantly more relational and contextualising way of thinking about this problem?

This question clearly implies exploring the extent to which linkages suggested under complex causality might be empirically vindicated in a credible way. More precisely, it pertained to whether a good case could be made that one or more versions of the vision that emerged with respect to the OPISA in the course of the OPI's heyday could convincingly be argued to bear marks of CS acts or speech as expressed in the context of interactive moments at the micro-level.

4.2. Research method

Our decision to elect visions as our 'units' of analysis, tracking possible qualitatively significant shifts over time in successive avatars of the macro-level vision informing the OPI as well as in CS perspectives

expressed during micro-level discussions, made it obvious to opt for a qualitative rather than a quantitative research strategy. Silverman (2000) thus points out that qualitative inquiry is eminently geared to providing a time perspective, be it retrospective or longitudinal. He also points out that this type of research is particularly suited for highlighting diversity or polyvocality (Bouwen & Steyaert, 1999). This again sits well with complexity's emphasis on knowledge as contingent on, and subject to, different interpretations. Qualitative inquiry also appears particularly appropriate for study of a limited number of research 'objects', as we chose to do. For their part, Yanow and Schwartz-Shea (2006, p. 384) remind us that methods and techniques do not exist in an epistemological or ontological void. They are linked to stances about what 'reality' status should be ascribed to what these methods allow us to uncover, and about how knowable we presume this 'reality' to be. As complexity-informed researchers, we are particularly inclined to follow Lather when she advocates opening up "the space for inexact knowledge" in social inquiry. Leaving room for an unruly, open-ended (experimental) social science thus seems to us to herald an era where different interpretations of methodological rules are admitted.

In this section we shall lay bare the research method we consider consistent with the complexity perspective, while serving the research strategy we presented in Section 4.1. More than a decade ago Mathews, White, and Long (1999) noted that, in contrast to increasing theorising about complexity, relatively few attempts were being made to conduct complexity-informed empirical investigation. With a few exceptions, notably Hetherington (2013), his verdict largely stands to this day. Following Najmanovich (2007), however, a scanty methodological toolkit should not restrain researchers from forging ahead. For her, empirical

research informed by complexity implies "making the way as we walk" (p. 93), inventing and building the methodology as the research progresses and adapting it to the encountered terrain [103]. In other words, adhering to complexity thinking invites playful, imaginative and tailor-made methodology also drawing upon methods already available.

As discussed in Chapter 3, the epistemological vantage point offered by interobjectivity recommends broaching ideational/cognitive phenomena both from 'inside', getting as close to subjective and intersubjective life world of agents[104] as the notion of complicity allows, and from 'outside' as the researcher looks for relationships and potentialities of which protagonists might not even be aware [105]. Our next task was therefore to find a combination of research methods, which would allow us to cover both epistemological angles, while complying with complicity's tenet of inevitable co-implication between the researcher and the researched. Already when discussing complicity as an epistemological tenet, we pointed to the remarkable affinity - experienced by Davis and Sumara themselves (2006, p. 167) between, on the one hand, the co-implication it posits between researchers and researched and, on the other, epistemological stances held by the hermeneutic tradition. Importantly, however, this tradition comprises two distinctive branches: phenomenology and hermeneutic phenomenology (Laverty, 2003). Since they draw on

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[103] We also heard from complexity-informed educational researchers that methodology abiding by sharply pre-defined methodological canons remains problematic (personal communication with B. Davis at UBC, October 2008).

[104] Esbjorn-Hargens and Zimmerman (2009, pp. 245-247) would classify intersubjective ideational phenomena as belonging to the epistemological domain of the 'collective interior'.

[105] In other words interobjectivity warrants switching between an internal 'I/we' and an external 'it/they' perspective.

different philosophical perspectives, the research methods that each authorises also diverge. Phenomenological research is primarily descriptive, as it seeks to map out the structure of experience and the organising principles that give form and meaning to the life-world of the researched as they appear in consciousness (p. 16, op. cit.). Emphasis on pure description prompts the phenomenological researcher to bracket her experiences and biases. By contrast, as she focuses on historical meanings of experience and their developmental and cumulative effects both at the individual and social levels, the hermeneutic-phenomenological researcher is expected self-reflexively to make as explicit as possible how her particular normative or ideological stances, prior knowledge as well as experiential background, affect the framing and interpretation of the studied phenomena. The latter focus seems to us to be the closest one might get in translating the principle of complicity into practice.

These considerations enable us to see more clearly the contours of the research method that will guide our empirical inquiry. Before spelling it out, however, one remark seems required. It relates to how the hermeneutic-phenomenological approach recommends us to look at what , conventionally, are called 'evidence' and 'data' (Yanow & Schwartz-Shea, 2006, p. xix). Starting with the latter, contrary to what their designation suggests, for these authors, 'data' are *not* given or pre-given. Whilst some may argue that the term 'data' retains some legitimacy in relation to observations *temporarily* made indisputable through systematic and replicable methods (Latour's 'matters of fact'), these methods too can be claimed to be based on criteria derived from certain assumptions and values. This, of course, is even more so for observations relating to issues where different ontologies, epistemologies and value systems confront each other (Latour's 'matters of concern'). While hermeneutic

phenomenology still talks about 'data', it understands the latter to include the researcher's personal reflections on the topic, as well as contextual knowledge drawing on sources other than such originating directly from the researched setting (Polkinghorne, 1989). Considering that observing and assessing a particular situation inevitably entails selectivity, likening the filter of our pre-conceptions through which these observations pass to the mesh of a fishing net[106] sifting out some observations while retaining others as 'catch', we found the term 'capta' more appropriate than 'data'[107]. More precisely, we opted for using the term 'capta' to denote particular words, expressions etc. within text segments retrieved from the documentary sources that we used for substantiating the inferences we drew. Furthermore, what we would call 'evidence' would include *both* text segments extracted from our documentary material *and* what emerged from our conversation with these text segments. To signal our understanding this term in accordance with the hermeneutic-phenomenological tradition, we decided henceforth to surround it with inverted commas.

Derived from the discussion above, the following five considerations informed the research method we devised;

First, rather than describing them on their sole terms (Finlay, 2009), we would strive to capture visions regarding the OPISA - both those emanating from the OPI *qua* macro-level protagonist during various phases

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[106] This metaphor was also used by Cohen and Stewart, 1994, p. 365 when they suggest that "(A) theory is like a net; it catches what it is designed to catch."

[107] This term was seemingly first developed by social contructionists (Gergen, 1999) for whom 'data' were but a legacy from a positivist empiricist epistemology. For these researchers, facts and data do not exist independently of a particular context or meaning system. In addition to what is practically knowable, they are products of the researcher's culture, knowledge base, expectations and scope of interest. For them, there is no such thing as an objective given, but rather phenomena shaped and apprehended through a dialogue between the researcher and the sources she is studying. Since we found this approach to sit well with complexity-informed epistemology, we chose to adopt this notion.

of its heyday and those held by CS representatives engaging in local discussions - in the light of externally constructed knowledge. Accordingly, an important part of our interpretive effort would consist in interrogating and commenting on the intersubjective 'reality' of the researched protagonists in the light of background knowledge, gained either through our literature review or through our own experience. Heeding Gadamer's call for self-reflexivity (1960/1998), particularly when seeking to construe CS protagonists' 'reality', we would bear in mind that what we read was shaped by our own pre-understandings and normative preferences.

Second, following Alvesson and Sköldberg (2000), for whom interpretation implies constant moving back and forth between text and context, making the 'text/con-text' relation a crucial one, we would alternate between what was expressed or suggested in the documentary material under scrutiny and the wider contexts in which it was produced.

Third, following Law's (2004) advice, when going through our documentary material, we would consider *both* what was absent - but nonetheless hovering in the background - *and* what was 'othered',[108] as

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[108] In "After method", Law (2004) draws an epistemological distinction between (a) what is made present through the researcher's conscious observation, reflection, conceptualisation or imagination; (b) what is manifestly absent, that is to say, what the researcher pushes into the background to allow what is present to stand out. Although made invisible or silenced, since what is made absent remains inseparable from what is made present, it can be turned into presence at any time; (c) what is 'othered'. While also the latter forms an invisible part of 'reality', as it forms part of a neglected or overlooked backdrop, it typically relates to possibilities inherent to a given situation that remain unacknowledged. This oversight might result from limitations brought about by favoured - and familiar - ways of thinking, lack of imagination, curiosity or boldness or outright repression and denial. Questioning, doubting, critiquing, on the other hand, constitute royal roads for making visible what was othered (Law, 2004, p. 90). While Law introduced these concepts in relation to the way researchers work, as complicit researchers we deem them equally relevant when it comes to examining how

offering useful clues as to what was deemed respectively less important and inconceivable both in the universe that inspired the OPI and in that of CS representatives.

Fourth, while, to repeat, we deemed a research method in line with hermeneutic phenomenology to sit particularly well with our remit as complicit researchers, we nonetheless found it necessary also to bring in elements from another interpretive tradition, namely Geertz's interpretive ethnography (1983), which we found to complement hermeneutic phenomenology in a useful way. Alongside other cultural anthropologists, Geertz thus pays attention, next to inter-subjective worlds, to constraints and affordances playing out independently of human cognition, thus placing side by side an emic - or insider - perspective and an etic - or outsider - perspective (Morris et al. 1999). This in turn seemed to us to match well requirements entailed by the epistemological stance of interobjectivity.

Fifth, and again following Alvesson and Sköldberg (2000), we would understand sound hermeneutic-phenomenological research methodology to require explication and discussion of the multiple steps that our analytical process involved, from the very outset through to understandings reaped and/ or questions raised. These steps will be presented below**.**

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human research 'objects', be they individuals or collectives, construe their universe. Thus, as we comment upon and seek to interpret statements and propositions made by the S&S Coalition as the voice of the OPI or by CS representatives, the three epistemological distinctions will allow us to identify boundaries between (a) clearly envisioned possibilities, (b) possibilities pushed somewhat into the background but nonetheless waiting to be harnessed as the situation requires and (c) possibilities not (yet) part of the collective universe that the OP-process contributed to call forth but which, as the process unfolds, might eventually be made either present or absent.

4.3. The seven-step analytical procedure

The analytical procedure through which we would conduct the proto-exploration of the OPI was devised so as to reflect the five considerations outlined in Section 4.2. Apart from Alvesson and Sköldberg's recommendation (2000) just referred to, two rationales underpin our decision to design such a procedure: first, when committing ourselves to abide by this procedure in a disciplined way, we hoped to keep a firm grip on our inquiry and hence to minimise the risk, compounded by the still substantial documentary material we would be handling, of being either side-tracked or, worse still, carried off on a runaway course. Second, we hoped to convey to our inquiry a fair degree of transparency and systematicity. What resulted was a procedure consisting of seven steps which we viewed as largely cumulative, each building on the previous one(s).

Step 1 was to consist in selecting, from the vast amount of files kindly handed over to us by former OPI protagonists (primarily those affiliated to the GSA and P4PS), those relating to the moments we identified in our research strategy as relevant for shedding light on the first three research questions. For the sake of manageability only sources we considered primary, i.e. directly relating, and being contemporary, to the OPI, would be subject to all seven steps. After presenting these sources, we would provide the rationale for selecting them, and subject them to a brief source-critical commentary. Bearing in mind that source critics tend to abide by a realist ontology, hence believing in the existence of *one* reality underlying everything, and there to be discovered (Alvesson & Sköldberg, 2000), we nonetheless deemed it appropriate to spell out for what circumstance these sources were produced, what their purpose was, and

what audience they targeted. We would also briefly discuss limitations inherent to these sources. For instance, we would signal that notes taken during transboundary meetings would inevitably bear the marks of interpretive filtering on the part of the note-takers, possibly giving rise to misunderstandings or important omissions.

Step 2 was to involve retrieval, from the selected primary sources, of text segments that we would view as relevant for the particular research question(s) we were addressing. Further sharpening our focus, we would look for segments relating to particular themes and sub-themes. In that respect, we would draw on what goes under the label 'thematic framework analysis'. In contrast to grounded theory under which researchers identify themes as they work their way through their 'data', this method, developed by Ritchie and Spencer (1994), and since then developed and applied by a number of other qualitative researchers, among whom Braun and Clarke (2006) and Srivastava and Thomson (2009), consists in extracting from their original textual context certain text segments understood to relate to specific *a priori* themes and sub-themes, as well as to the research question on which they are expected to shed light. This particular form of content analysis accepts that text segments might be related to more than one theme/sub-theme, and to more than one research question. As Braun and Clarke (2006, p. 97) underline, thematic framework analysis presents the advantage of allowing for theory-driven analysis while remaining flexible enough to include unanticipated dimensions. From our particular point of view, it furthermore seemed to present the major advantage of sitting well with the abductive case study strategy.

When seeking to construe the macro-level vision relative to the OPISA and visions held by CS representatives in that respect, we would

not attempt exhaustive coverage of issues of relevance for this vision. Recalling that, for Braun and Clarke (2006, p. 82), a theme captures something important about research questions asked, we chose to focus on two main themes, namely (1) 'Guiding principles underpinning governance of the Salish Sea and, more specifically, of those included in the proposed OPISA', and (2) 'Modalities for governing these marine commons'. At first glance these themes might appear to be insufficiently distinct. While obviously interrelated, (principles tend to underpin modalities), we shall, however, contend that they belong to two different spheres. While Theme 1 thus pertains to the sphere of ontology and epistemology, logic and values, Theme 2 pertains to the sphere of praxis in the form of approach, regime and practices for governing the proposed transboundary marine protected area. Apart from featuring on the agenda of most transboundary discussions throughout our study period, we deemed both themes relevant against the backdrop of the discussion we conducted in Chapter 2 about intentionality from a complexity perspective. While Theme 1 seemed to us to help illuminate possible shifts in non-focused but no less affirmative orientation guiding the OPI (Osberg, 2010b), Theme 2 could be anticipated to shed light on whether more focused - and hence presumably more concrete - envisioning with which the S&S Coalition and its two co-chairing organisations, the GSA and P4PS, started out, eventually turned into a (radically) novel model for governing the commons of the Salish Sea, or portions thereof. Going further, we singled out, under each theme, a number of sub-themes - or 'themes-within-a-theme' (Braun & Clarke, 2006) - allowing us to dwell upon particular aspects or dimensions of our two main themes. The sub-themes we settled for would meet the following three criteria:

(1) Seemingly mattering a great deal to the CS, they could be expected to give rise to contestation and/or to counter-proposals on their part;

(2) Of empirical relevance, they would reflect questions foregrounded in the sources we had at our disposal. The consideration was here that we wished to ensure that, although defined *a priori,* the themes and sub-themes retained would nonetheless match concerns we found foregrounded in the documentary material produced at the time:

 (3) They would match our own concerns.

For Theme 1, the sub-themes, all in part interrelated, were: (a) the knowledge base(s) informing establishment of a transboundary MPA and (b) ethics. For Theme 2, the sub-themes were: (a) approaches to marine conservation and to the MPA concept; (b) governance regime and practices for the area of interest/OPISA, and (c) shared governance across the border.

Step 3 was to consist of our commentaries regarding the retrieved text segments. Drawing on our own background knowledge, we would pay special attention to what we found surprising as well as missing. This step would also be the place where we put two kinds of questions to our text segments: a) those relating to the contexts to which the examined text segments might be understood to refer, and b) those expressing our doubts and hesitations as to what sense to make of the selected text segments. To repeat, since under the hermeneutic phenomenology, the notion of 'evidence' includes the researcher's personal reflections, we would consider these commentaries as forming part of the evidential base from which we shall draw inferences under Step 4.

Step 4 was where we would carry out the interpretive analysis *strictu sensu.* We considered this stage the apex of the entire analytical procedure. The following four considerations would inform this step:

The **first** consideration pertained to the very act of drawing inferences. Following Kurland (2002), we would understand interpretive analysis first and foremost to rely on the mental process of inference making. This is the process through which, when confronted with particular 'evidence', the interpreter makes judgements and decisions as to what sense to make of what this 'evidence' refers to or expresses. It would involve our active 'reshaping' of the text segments we wished to analyse, turning them into meaningful clues for what we were looking for as we picked them out, realigned or confronted them with each other. As the selection of capta for the purpose of substantiating our claims would rest with our judgement as to what sense to ascribe to them, this would in turn put us in a position to present arguments for certain inferences while rendering others less convincing. Conventionally, after advocating alternative interpretations as forcefully as possible, the interpretive researcher is expected to defend one interpretation in particular, at the expense of other interpretations, by presenting repeated evidence retrieved in the studied texts. This, however, calls for a remark: rather than considering them mutually exclusive, as complexity-informed researchers applying dialogical reasoning, we might decide to consider different interpretations of a particular text segment as complementary [109]. Furthermore, when arguing in favour of certain inferences, following what the methodology of discomfort prescribes (Burdick & Sandlin, 2010), we would at the same time remain attentive to 'evidence' that did not seem to

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[109] Even though they can hardly be labeled complexivists, Alvesson and Sköldberg (2000, p. 102) advocate this road.

fit our expectations. In any event, generally striving to exercise immense restraint in how we interpreted what we read, we would allow this 'evidence' to 'talk back to us', surprise us, even disappoint or unsettle us.

Reaching meaningful understandings under Step 4 required ability on our part to relate our 'evidence' to the concepts at the core of our first three research questions. This was precisely where the second step of Kolcaba's strategy (2003) for bridging the gap between theoretical concepts and the empirical terrain entered the scene. We recall from Section 4.2. that the first step she proposed involved associating theoretical concepts with certain attributes. For Kolcaba, yet another link is required, tying such attributes to clues observable in, or inferable from, texts relating to the empirical settings under scrutiny. She thereby clearly adheres to the interpretive tradition, which assumes that texts - and the language in which they are couched - constitute media that are sufficiently reliable for drawing sound inferences about different aspects of such settings, including the life world of the researched (Alvesson & Sköldberg, 2000). Geertz (1983) elaborates somewhat on this when he describes language as an important aid in a new *diagnostics*. This approach to knowledge generation thus sees words - or, more precisely, linguistic categories and key terms - as *symptoms* and trustworthy signals for shedding light on how the researched look at and relate to the world. However, where Kobalca uses the term 'empirical referents' or 'indicators', we were somewhat reluctant to follow her. Often used in clinical medical or psychological studies, we saw these terms as legacies from positivist research where they are often associated with operational definitions geared to quantitative or numerical measurement. As for 'symptoms', we were likewise wary of adopting this term since, for us, it carried a connotation of disease and dysfunction. Against this background we opted for the more neutral terms

of 'pointers'. In our understanding, pointers were interpretive devices helping us decipher certain contents of statements or messages as well as certain behaviour as empirically detectable 'signatures' first, as we move backwards and upwards, for attributes, next, by extension, for the theoretical constructs with which we associated these attributes[110]. In other words, when subjecting selected text segments to close reading, pointers understood beforehand to denote dimensions or ideas that we deemed legitimate to associate with attributes for the three concepts at the core of our heuristic framework would enable us to recognise certain statements or messages contained in these segments as signatures for the concepts in question.

While largely inspired by Kobalca, we acknowledge that the second step of her strategy presents at least two perils. First, eliciting an inevitably limited set of pointers as relevant for a particular attribute - and hence for a particular theoretical concept - might entail missing equally plausible signatures. Second, words that constitute the primary material with which we would be working are at all times slippery, shape-shifting and ambiguous [111]. As Geertz (1983) reminds us, this problem is compounded in situations where protagonists come from different cultural horizons. In such situations, while seemingly speaking the same language, protagonists may ascribe different meanings to the same set of signifiers. There would therefore be a significant risk that, as non-local interpreters, we would convey a certain meaning to CS inputs on the basis of certain

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[110] For Agamben et al. (2009), the historian does not randomly pick up evidence out of the inert mass of archived data. Like a detective, she looks for clues in the material, which she reads as signatures, or indices, revealing presence or absence of features/qualities or properties that can only be surfaced through inference. For Agamben (p. 76), in order to be fruitful, concepts must be associated with signatures acting as 'strategic operators' (p. 77, op. cit.).

[111] Law (2004) even likens words to amoeba!

signifiers, which, for CS attendees, would refer to something completely different. This notwithstanding, we expected the pointers for which we would settle, when applied cautiously and critically, to provide us with meaningful clues, on the basis of which we could draw inferences shedding light on our research questions. Furthermore, we also expected attention to clues less dependent on text and speech, such as certain kinds of behaviour - for instance silent obstruction or outright staying away from meetings - to offer further support for certain theses in cases where text and words seemed particularly ambiguous.

The attributes we proposed in Section 4.1. for the concept of bifurcation were two qualitative shifts involving, respectively, outward expansion widening the array of distinctly different options contemplated, and leaps upwards towards more relational and contextualising ways of thinking about the problem at hand. Accordingly, when comparing successive versions of the vision that informed the OPI, we would consider, as a pointer for the former shift, inclusion of ideas, options or approaches seemingly *not* contemplated in the previous visions(s). Pointers for the latter shift would be proposals or options signalling recognition of relationships, and possibly productive complementarities as well as linkages and interdependencies with wider contexts seemingly gone unnoticed so far.

Moving on to interruption, the attribute we associated earlier with this concept was that of defiant acts and dissenting speech through which CS protagonists would call into question what they thought was 'wrong', unacceptable or unsustainable in the logic underpinning existing ways of thinking about marine commons. Accordingly, it seemed obvious to see statements or messages on their part expressing objections, or criticism, as

well as behaviour suggesting opposition or resistance, as pointing to interruption.

Lastly, in relation to pedagogic 'subjectivation', we recall that the two attributes we associated with this concept were ideas and perspectives put forward by CS representatives differing markedly from those prevailing among non-native protagonists, as well as pride, on their part, in their own ability to bring a distinctive contribution to the 'problem-in-common'. Accordingly, as our two pointers for pedagogic 'subjectivation', we would retain statements or messages expressing ideas and proposals conspicuously grounded in a traditional CS worldview, and messages suggesting that CS representatives, when bringing forth their proposals, experienced pride in the contribution their perspectives would make.

The **second** consideration pertained to the modes of reasoning to apply during our interpretive analysis. While we would not entirely dismiss inductive and deductive reasoning, by now it will come as no surprise that we sought to privilege other modes of reasoning. We recalled that abductive reasoning encourages analogies (Santaella, 1997) and allows interpreters to see something as signalling something else (Danermark, 2002, p. 91). Arguably more so than the two more classic modes of reasoning, this mode of reasoning appeared propitious for thought experiments and speculation (Santaella, 1997). Assuming that a substantial number of files would leave much unsaid that might be the most important part of what was communicated, rather than a probabilistic logic, it would invite us to harness our imagination and intuition when formulating best guesses about what remained unstated or ambiguous. This would, however, imply a significant pitfall. The further abductive reasoning would prompt us to stray away from probability towards sheer possibility, and hence lending imagination and speculation on our part a near-free rein, the more

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serious the risk of reading more into our files than they could safely bear[112]. Accordingly, when drawing inferences from our 'evidence', we would seek to remain particularly wary of any form of wishful thinking prompting us to read too much into our documentary material. Lastly, when looking for relationships and patterns, we would supplement the abductive mode of reasoning by the connectionist mode recommended by Cilliers (1998). We would also seek to apply dialogical reasoning when looking for inferences possibly complementing each other.

The **third** consideration pertained to the dimension of time. In line with complex temporality, we would understand interpretive analysis as a practice spanning the past, the present and the future. The past would enter into account through our prior knowledge and historically transmitted pre-conceptions. The present would manifest *both* as we read texts produced in the past through today's lens[113], *and* through our concern to make our work relevant and meaningful in light of present concerns. As for the future, it would enter the scene through our awareness that our inferences might be judged from the vantage point of an inevitably unknown and unknowable future, and that our interpretations would therefore need to be revised against new concepts and experiences still to emerge (Osberg & Biesta, 2007, pp. 41-42).

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[112] That said, it is no easy task to determine where creative reading ends and where over-interpretation, taking the interpreter too far from the text, begins. This issue seems to be the object of on-going discussion also within literature studies (Davis et al., 2000; Eco, 1992).

[113] We would this bear in mind that, when looking at what happened more than ten years ago, the prism we would use for interpreting this past would inevitably include knowledge unavailable at the time. Also, however hard we would try, as we read files produced at the time of the OPI, we might find it difficult to ignore altogether comments brought to us during retrospective conversations with a number of former OPI protagonists four to six years after the events.

The **fourth** and last consideration pertained to the role ascribed to texts. Whereas hermeneutic interpretation mainly views texts as providing an entry into life worlds, and hence tends to consider meanings as research objects *per se*, Geertz's interpretive ethnography (1983) reminded us that the files we would be reading were also visible traces of concrete events and situations. For him, no interpretation of phenomena - including thought-forms - is meaningful without also understanding the context in which they occurred (p. 54, op. cit.). This consideration sits particularly well with complexity thinking's emphasis on contexts. Consequently, when drawing inferences about the macro-level vision as it became visible during different phases, as well as about visions held by CS representatives, we would pay attention to contextual conditions that we assumed might have affected these visions.

Turning to **Step 5,** we would view this step as the stage at which, following Gadamer's precept, we would display self-reflexivity in relation to the preceding steps. This would be the place where we would reflect - as honestly and transparently as we possibly could - on how our interpretive filter made up of pre-understandings, expectations and ideological biases, affected the inferences we drew under Step 4, the questions asked in relation to selected text segments under Step 3 and, prior to this, under Steps 1 and 2, the way we selected and re-arranging our sources and extracted text segments from their context. For Alvesson and Sköldberg (2000), such critical reflection is precisely what gives value to interpretive practice. Step 5 would, however, not be the only place where we would practice self-reflexivity. Parallel to conducting the analytical procedure, we would keep a form of logbook in which we would write down the

challenges and vexed decisions we faced when going through the various steps. These reflections are recorded in **Annex 28 (Book II)**.

Under **Step 6**, we would bring in secondary files presenting contributions, either contemporary to the OPI or more recent, from which we might draw arguments that might counter, nuance but also supplement inferences made under Step 4. We also expected secondary sources at times to fill possible gaps in the primary sources. Importantly, however, while quotations illustrating or substantiating the claims we made would be extracted on the basis of the same thematic framework we applied under Step 2, secondary sources would *not* be subject to the seven-step procedure.

Lastly**,** on the basis of inferences made under Step 4, possibly corrected, nuanced or enriched via Step 6, **Step 7** would consist in bringing out patterns in the understandings we arrived at regarding the three successive macro-level visions as well as those seemingly informing CS protagonists taking part in local discussions. In cases where we felt able to favour one particular understanding, we would strive to anticipate, and respond to, objections that might legitimately be formulated. This step would furthermore touch upon the third question on Davis and Sumara's checklist for the complicit researcher, namely how we would represent/present the understandings we arrived at in relation to these questions.

CHAPTER 5: CASTING OUR NET: UNDERSTANDING[114] THROUGH PROTO-EXPLORATION

Introduction

The present chapter is divided into four sections:

Section 1 is dedicated to addressing RQ.I, i.e. the question centred on the extent to which the vision that emerged during different phases of the OPI's heyday seemingly underwent a bifurcation event. After outlining how we went about dealing with this question, we next present the understandings with respect to what we called the early, the intermediate and the ultimate vision for the Orca Pass International Stewardship Area (OPISA) that resulted from applying the seven-step analytical procedure to our primary sources.

Section 2 addresses RQ.II and RQ.III. Here too we spell out how we went about dealing with the two questions. We next present the understandings resulting from applying the seven-step analytical procedure to reports emanating from transboundary meetings convened by the S&S Coalition.

Centred on RQ.IV, **Section 3** examines whether understandings reaped relative to the three first research questions warranted the linkages that our heuristic framework tentatively established between interruptive

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[114] We deliberately preferred the term 'understandings' to the term 'findings'. We felt uneasy about the latter term since it seemed somehow to clash with the interpretive tradition to which we chose to adhere. This tradition posits that what can be reached through interpretive analysis are at best insights or understandings. By contrast, the term 'findings' seemed to us a legacy from the positivist tradition asserting the possibility of objectively reproducible results. This assertion appeared particularly problematic when associated with thematic content analysis in which interpretation plays a large part.

speech and acts, speech denoting pedagogic subjectivation and shifts signalling bifurcation events.

Section 4 presents and discusses the overall conclusion derived from our proto-exploration. This conclusion pertains to the central question that we hoped this exploration would throw light upon, namely the extent to which, in its heyday, the OPI could be argued to have embodied a space in which a democratic education process unfolded.

Importantly, the minute demonstration of how we went about applying the seven-step analytical procedure to our primary sources is presented in **Book II.** Elaborated for the benefit of readers wishing to check in detail how we arrived at our understandings, **Book II** will also provide an overview of initial and contextual conditions that marked the three phases in which the early, the intermediate and the ultimate vision emerged as well as the two sub-cycles into which we divided the OPI's heyday when looking at CS messages emitted at the micro-level.

5. 1. The macro-level analysis: Addressing RQ.I

Introduction: How we went about addressing RQ.I

Since the research strategy we devised in Chapter 4 enjoined us to start with the macro-level analysis, the present section will be devoted to addressing RQ.I. To recap, as refined in Section 4.1., this question reads as follows:

> To what extent did successive versions of the macro-level vision that informed the OPI during its heyday appear to display radical novelty in the form of qualitative shifts widening the range of distinctively different perspectives and approaches addressing the plight of the Salish Sea and denoting a significantly more relational and contextualising way of thinking about this problem?

As required by the retrospective gaze we directed at the OPI, we started by delimiting the time span we would consider as our study period. We first considered making the start of our study period coincide with what - at least according the files we perused - was the very first transboundary meeting. At this meeting, held on March 30th 1999, the launching of the OPI was announced to about ten S&S Coalition members. We nonetheless took the decision to make our study period begin on September 8th, 1999, and to consider this date to mark the beginning of the OPI's heyday. On this day, a document outlining key principles for establishing a transboundary MPA in the Salish Sea was circulated for the first time via the newly established transboundary marine protected area (henceforth designated as TBMPA) listserv. Reading this as signalling that the OPI's instigators deemed the proposal sufficiently developed at this point to be communicated to a wider audience, we understood this date to mark the end of the OPI's gestation period. Determining the end point of the heyday - and hence of our study period - appeared somewhat less obvious. We might have chosen to let our inquiry cover the entire six-year period during which transboundary meetings took place on a fairly regular basis - that is, roughly speaking, until early 2005. Instead we took the decision to limit the studied period to spring 2003. We thus viewed the submission, on April 2nd, 2003, of recommendations regarding the OPISA to the Environmental Cooperation Council, headed by the Governor of Washington State and the Premier of the Province of British Columbia, as the apex of the OPI's history. Already from the summer of 2003 onwards, the S&S Coalition's energies appeared to be diverted away from the OP proposal towards other competing concerns.

In accordance with the longitudinal gaze discussed in Chapter 4, we began by identifying three critical phases within the OPI's heyday,

during which what we considered respectively the early, the intermediate and the ultimate vision became visible. We dubbed **Phase 1** a first time span of about seven months during which the first coherent proposal for a transboundary MPA, that we called the early vision, was issued and presented under different forms and on several occasions to a wider constituency. Coinciding with the beginning of the OPI's heyday on September 8th 1999, we deemed this phase to come to an end early April 2000, when the S&S Coalition seemingly considered the time ripe for launching preparations for an extensive outreach campaign aimed at gaining wide support for the proposal.

We set **Phase 2** to cover a time span of about four months stretching from early February to end of May 2001. In the course of this phase a more elaborate vision that we called the intermediate vision, since it became visible about mid-way through the OPI's heyday, was officially presented to wider constituencies, including governments from both sides of the border, both higher-order and local. The occasion was a first transboundary conference addressing the problems facing the GB/PS ecosystem. This vision was further elaborated upon in an application for funding from the tri-national (US-CA-Mexico) North American Fund for Environmental Cooperation.

Phase 3 again covered a somewhat longer time span, stretching from May 2002 to May 2003. This time span witnessed wide circulation of a publication offering the as-yet most extensive elaboration of the vision driving the Orca Pass experiment. This publication also formed the basis for discussions of the recommendations submitted for endorsement by the WA/BC Environmental Cooperation Council on April 2nd, 2003. Around the same time, the S&S Coalition elaborated on certain aspects of this vision when presenting the Orca Pass proposal at the 2003 Puget

Sound/Georgia Basin Ecosystem Conference. Since, seemingly, no further version saw the light after this, we called the vision that became visible in the course of Phase 3 the ultimate vision.

Having thus identified three successive phases during which the vision that informed the OPI was presented to wider constituencies, we proceeded to sketch out the vision that was made visible in the course of each of these phases. The primary rationale for seeking to sketch out the early vision for a transboundary area of interest was that this vision provided us with a historical reference against which we could detect possible changes in the vision that informed the OPI during the two following phases.

We next went on to compare the intermediate vision with the early one and the ultimate with the intermediate one. In accordance with RQ.I, our task was to assess whether either vision bore signs of having undergone a bifurcation event. This in turn required us to equip ourselves with a set of gauging tools. To this end we proceeded as follows:

First, associating the concept of bifurcation with radical novelty, as discussed in Chapter 2, we understood the concept of bifurcation to imply two kinds of conspicuous, qualitative shifts in the form of: (a) outward expansion to include an wider array of distinctively different perspectives and options for action - a shift that we short-handed as differentiation - and (b) upward leap(s) towards significantly more relational and contextualising ways of thinking about the problem at hand - a shift that we short-handed as complexification.

Second, we next looked at the shifts we noted in the successive visions in terms of differentiation and complexification that we elicited as our two gauging standards.

Third, confronting the conundrum of establishing when shifts in terms of either standard could legitimately be deemed sufficiently spectacular or dramatic to denote radical novelty, we opted for introducing an optimal scenario - inevitably provisional by nature. We conceived this scenario to reflect more differentiated, higher-order of thinking, conjuring up radically novel principles and modalities for governing the marine commons included in the Salish Sea that would contrast starkly with those that marked the early vision for the proposed transboundary MPA. Features we related to such scenario were derived from relevant readings, notably those mentioned in Section 1.1. , from our own experience as well as observations we made during the various events we attended in the Salish Sea region in the time span 1999 to 2011. We expected this scenario, or more precisely, the requirements we associated with it, to equip us with a benchmark for assessing if radical novel ways of thinking about governance of marine commons might be claimed to have emerged and hence also for deciding if a bifurcation threshold had been crossed. We also anticipated this scenario to prove useful in the discussion we would have in Chapter 7 about potentialities, which the OPI might have failed to actualise.

Further explication of the reasoning undergirding the gauging exercise as well as demonstration of how this exercise was conducted is set out in Section 1.4. (**Book II**), while the rationale for the decisions we took and the perplexities we experienced when conducting this exercise are laid out in **Annex 28** appended to that same book. On the basis of the qualitative ratings we performed for the intermediate and the ultimate vision respectively (displayed in **Annex 3**), we discussed whether the macro-level vision that emerged in the course of respectively Phases 2 and 3 might credibly be claimed to express radically novel ways of thinking

about governance of marine commons and hence to bear the mark of a bifurcation event with regard to the themes and sub-themes introduced in Section 4.3.. Lastly, prior to offering a tentative reply to RQ.I, we decided to take a second look at how bifurcation events might be understood to manifest in social contexts.

5.1.1. Phase 1 – **The early vision**

5.1.1.1. Understandings regarding the early vision

The interpretive analysis we conducted under **Step 4**, corrected or nuanced via Step 6, allowed us to arrive at a set of understandings regarding how the early vision addressed the five sub-themes we identified in Chapter 4.

With regard to the **knowledge base** - sub-theme **1(a)** – to underpinning establishment of a transboundary marine protected area (MPA), while a role was acknowledged for traditional ecological knowledge and wisdom (TEKW) in informing protection and recovery of marine commons within this area, (Western) science was presented as the primary knowledge base upon which to rely.

While the **ethics** - sub-theme **1(b)** - undergirding the early vision foregrounded human-oriented values such as justice and equality, native groups' special circumstances appeared overlooked. Moreover, even though obligation to respect and act responsibly towards non-humans was alluded to, there seemed to be no explicit distancing from an instrumentalising approach to marine life.

While presenting the **MPA concept** - sub-theme **2(a)** - as scientifically validated, the early vision acknowledged this concept as possibly controversial. However, no perspective other than the

scientific/ecological was evoked, nor were models other than Marine Protected Areas (MPAs) considered for marine conservation. Furthermore, whereas ecologically-representative MPA networks were seen as one template for translating the MPA concept into practice, inter-linkages between marine habitats, on the one hand, and coastal areas as well as river systems and uplands, on the other, appeared overlooked.

With regard to **governance regimes and practices** - sub-theme **2(b)** - the early vision seemingly took seriously FN and tribal rights and interests as well as their involvement, notably via co-management. By contrast, apart from broad reference to stewardship, little attention seemed paid as to how citizen groups and local communities might contribute to governing the marine commons included in the proposed transboundary MPA. Furthermore, whereas the two governance options - voluntary compliance or enforcement through regulations - appeared to be framed as complementary, which of the two was to be privileged appeared kept open.

As for **shared governance across the border** - sub-theme **2(c)** -, while the early vision seemed to acknowledge the shared waters as forming one seamless ecosystem, considerable caution was displayed regarding how the border would be transcended in political terms. Silence regarding joint citizen-based actions and the possibility for the two sets of higher order governments to coordinate their respective regulatory measures seemingly confirmed such caution. One secondary source nonetheless evoked the possibility for the two local governments, respectively San Juan County (WA) and the Islands Trust (BC), to share management decisions.

Against this backdrop we concluded under **Step 7** that, the early vision spelt out fairly clear principles for the OPI's work, it displayed relative undecidedness and noteworthy omissions regarding how the principles enunciated would translate into practical governance options,

also across the border. We nonetheless deemed the early vision, of which we caught sight via our interpretive analysis, to provide us with a sufficiently articulate historical reference to enable us detect changes, notably in the form of new or revised ideas and concepts, that possibly occurred in Phase 2 (and possibly also Phase 3) with respect to some, if not all of the five sub-themes.

5.1.2. Phase 2 – **The intermediate vision**

Introduction

Using the early vision as a backdrop, our primary task was to detect, in the intermediate vision, new principles and modalities for governing marine commons. In preparation for the comparative discussion required by longitudinal analysis, we were also attentive to where the intermediate vision seemed more outspoken and less ambiguous than the early vision, while pinning down continuing silences or omissions.

5.1.2.1. Comparing the intermediate vision with the early vision

In this paragraph we summarise understandings reaped from comparing the intermediate vision to the early vision.

1(a): As a new dimension, the intermediate vision repeatedly emphasised the role and input of scientific experts. Such input seemingly helped call forth an entirely new methodology centred on the concept of Richness Zones. On the other hand, where already the early vision acknowledged the role of TEKW for informing protection and recovery of marine commons, the intermediate vision clarified further in what respects TEKW might

contribute - notably in identifying and monitoring special protected zones within the proposed OPISA. We were, however, left with the impression that the primary role envisioned for traditional knowledge was still to supplement, or "fill gaps", in scientifically-gathered data.

1(b)*:* We still did not find the intermediate vision to distance itself expressly from the instrumentalising approach to marine life we observed in the early vision. However, whereas we found the early vision only marginally to touch upon the human/non-human relationship, in the intermediate vision, we caught sight of signals suggesting blurring of the conventional divide between the human and the non-human worlds. Open allusion to orcas as beings to be honoured and as 'international citizens' thus clearly exceeded how a modern, science-dominated worldview would conventionally frame non-humans. We also found conspicuous opening up to indigenous values through a reference to sites of spiritual importance for FNs and tribes within the proposed marine area, as well as to 'seventh-generation thinking' - a principle central to indigenous ethics.

Against this backdrop, we concluded that, as compared with the early vision, the intermediate vision appeared to mark an interesting move towards more relational ethical values, notably implying blurring of the conventional divide between humans and non-humans and between generations.

2(a): We noted that, while the early vision seemed aware that MPAs might be controversial in some contexts, the intermediate vision now openly recognised impediments for the MPA concept to be widely accepted. Politically-grounded considerations challenging scientific/ecological considerations were now also acknowledged. This in turn invited us to

infer that the intermediate vision - at least implicitly - denoted increased recognition of MPAs as complex, socio-ecological constructs. However, despite open recognition that FNs and tribes found the MPA concept problematic, and despite express commitment to involving them in the establishment of the proposed transboundary MPA, the S&S Coalition seemed little inclined to calling the MPA concept fundamentally into question. No invitation was thus extended to the CS to propose a complementary or 'alternative' marine conservation approach. This prompted us to toss in the suggestion that unshaken confidence in the MPA approach still blinded the S&S Coalition to other marine conservation approaches. Lastly, focus on one specific marine area somehow seemed to continue to push into the background a marine conservation approach heeding cross-scale connectivity reaching beyond marine waters.

Against this backdrop it appears reasonable to conclude that, compared to the early vision, we perceived the intermediate vision to denote, at least implicitly, increased recognition of MPAs as controversial. It did not, however, draw the full consequence of such recognition by opening up to distinctive and possibly diverging CS perspectives regarding marine conservation that might complement or even replace the MPA approach.

2(b)*:* Under both of the two main governance regimes, i.e. regulation-based enforcement and voluntary compliance, the intermediate vision came to include a more differentiated array of provisions. Under the former, we found 'no-takes' for special protected areas implying total prohibition of any form of commercial, recreational and cultural use. Tribal co-management seemingly also - at least in part - fell into this category, since it implied treaty-based, non-voluntary regulations. Education, notably through outreach activities, was presented as preparing the ground for

voluntary compliance. A secondary source clarified somewhat how these two main governance options would be articulated. A clear-cut 'division of labour' or complementarity thus seemed envisioned between local governments and higher-order governments, either state/provincial or federal, with the former taking on non-regulatory management and the latter regulation-based enforcement. Yet it still remained unclear which of the two was envisioned to prevail within the proposed marine area.

In contrast to the early vision, involvement of citizens was foregrounded and elaborated upon. Not only was their desire for action and commitment underlined as a condition for establishing the OPISA. Citizens were also foreseen to be actively implicated in identifying and effecting restorative action via recovery programmes. Transcripts of more recent conversations led us, however, to suspect a bias that might otherwise have escaped our attention. Little attention thus seemed paid to the capacity of local user groups, even without mediation in the form of education and outreach activities on the part of NGOs based outside the considered area, to conceive new ideas and experiment with new governance tools, thereby also instituting their own regulatory regime.

Despite such bias clearly privileging mediated citizen involvement, we were inclined to conclude that, compared to the early vision, the intermediate vision widened somewhat the array of governance tools considered under the general headings ' regulatory enforcement' and 'voluntary compliance'. Yet, none of the new ideas and concepts introduced seemed to be informed by a logic differing starkly from the logic that informed the early vision. Ambiguity furthermore persisted with regard to which of the two governance regimes was to be privileged within the OPISA.

2(c)*: Where the early vision only evoked cooperation between federal, provincial and state nature resource agencies, as well as the two local governments sharing management decisions, the intermediate vision seemed to move closer to the idea of the two sets of higher-order governments *coordinating* their respective policies and regulatory measures aimed at protecting marine commons. There were, however, still no signals pointing to the possibility for FNs and tribes to work together to rehabilitate governance regimes applied in traditional fishing and harvesting grounds now bisected by the border.

How citizens were envisioned to join forces across the border remained somewhat unclear. Yet we found the intermediate vision to introduce the interesting notion of a "constituency of concerned citizen-stakeholders that spans a political border". Likewise 'citizen-stakeholder' involvement was mentioned in relation to protection and restoration of ecosystems shared by different countries. This led us to wonder if the intermediate vision might thereby have hinted at the possibility for citizen groups to work together across the border to these ends. Should this be the case, we would, however, have expected the intermediate vision to mention possibilities for further enhancing community-based transboundary monitoring and recovery projects already underway.

The attitude to the border itself still seemed fraught with ambivalence. We thus found apparent hesitation to label also human inhabitants bordering the shared waters as 'international citizens'. Such hesitation also transpired through repeated use of the qualifier 'international' instead of 'transboundary'. On the other hand, we were struck by capta suggesting implicit recognition of the political boundary's dysfunctional effects as well as overt critique of (local) governments'

efforts to establish transborder marine protected areas as "slow, scattered and piecemeal".

On balance, despite persisting ambivalence and silence as to how the CS might join forces across the border for the purpose of rehabilitating traditional governance regimes and fishing practices, all in all, when compared with the early vision, we found the intermediate vision considerably bolder and more explicit regarding how both local governments and higher-order governments might work together across the political boundary.

5.1.3. Phase 3 - **The ultimate vision**

5.1.3.1. Comparing the ultimate vision with the intermediate vision

Comparison between understandings reached for the intermediate and the ultimate vision respectively again allowed us to detect changes in the latter with regard to the five sub-themes. Looking at the ultimate vision, we had the following three questions in mind:

(a) Did it introduce new dimensions or options as compared with the intermediate vision?
(b) Did it denote more relational and contextualising ways of thinking?
(c) More generally, did it strike us as less ambiguous and bolder in pushing back limits than the intermediate one?

1(a): As we compared the two sets of understandings, what mainly struck us was that the value of TEKW appeared considerably better acknowledged in the ultimate vision. Where we understood the intermediate vision as largely overlooking traditional knowledge as a

possible complement to, or as a counter-weight for, expert consultations, notably for the purpose of identifying (biological) Richness Zones, there now seemed to be considerable interest in traditional knowledge in association with traditional practices. Guidance appeared to be sought from the CS as to how such practices might allow marine commons to regain a healthy status. This seemingly signalled increasing recognition of intimate intertwining, within TEKW, of knowledge generation, on the one hand, and experience and practices (or praxis) (Kovach, 2009), on the other. At the same time, we were surprised to see CS longstanding, experiential knowledge of the land and waters making up the proposed OPISA disregarded in relation to GIS mapping in particular. Upon reflection, however, we took this to lend further support to the thesis that scientific expertise informed by hard sciences continued to predominate at the expense of both traditional and lay knowledge.

1(b): Compared with the intermediate vision which already suggested some blurring of the human/non-human divide, the ultimate vision appeared to mark further change in the way non-human elements of the biosphere and human/non-human relations were being thought about. As it transpired in the ''Wave of the Future' publication, the ultimate vision thus seemed to move resolutely in the direction of a value system emphasising responsibility towards non-humans. While still presenting marine life as instrumental to economic gain, it called for fundamental rethinking about oceans as the "home" of marine creatures rather than, as was too often the case, as "bottomless refuse pits or limitless food sources". Moreover, its underlining that reducing the human footprint was a duty for all appeared to mark conspicuous distancing from purely economically-grounded values.

2(a): In addition to implicitly admitting that approaches other than the MPA approach were required for addressing the plight of the Salish Sea, we understood the ultimate vision to pay attention to areas other than strictly marine ones. Explicit attention thus seemed given to how coastal development affected (marine) habitats. This vision, however, did not go as far as to address the issue of linkages between marine, freshwater and upland ecosystems and habitats. Furthermore, although it explicitly recognised difficulties in relation to the CS, and to BC FNs in particular, and also underlined the need for WA tribes to be intimately involved in the process of creating MPAs, the ultimate vision still did not invite these FNs and tribes to propose complementary approaches based on traditional practices for bringing the marine commons of the Salish Sea back to a healthy status.

2(b): As the ultimate vision emphasised complementarity between governmental and citizen-led actions, greater clarity now seemed attained concerning the respective role of enforceable regulations versus stewardship based on voluntary compliance. While the 'no-takes' option was no longer explicitly referred to towards the end of Phase 3, the option of 'special protective areas' was nonetheless retained. As we understood it, coercive regulations would still apply, albeit for such areas only, possibly in conjunction with stewardship measures. Outside these areas, the management plan involving a combination of voluntary governance tools would apply.

By foregrounding citizen groups' direct role, both in monitoring activities and in helping develop management plans, the ultimate vision offset the impression we got from the intermediate vision, of direct involvement by citizens groups and islander communities being somewhat

played down. In contrast to the intermediate vision, possibilities were thus expressly evoked for these groups to regulate themselves. While self-regulation by citizens and user groups seemed mainly understood to result from instrumentalising education - presumably mainly via the outreach campaign - self-regulation through peer pressure was also contemplated. On the other hand, consideration was still not given to possibilities for local user groups to institute arrangements, tailored to specific local conditions, that would allow these groups to act as responsible stewards of the biophysical systems of which they would recognise being part. Nor did possible productive coupling of the governance options proposed and CS traditional governance regimes and practices appear to be contemplated.

2 (c): As a noteworthy move distinguishing it from the intermediate vision, the ultimate vision now expressly called also for higher-level governments to coordinate their activities for the sake of "efficiency and effectiveness". To make any sense, we understood this to imply coordination across the political boundary. Another interesting feature of the ultimate vision was the obvious pride expressed in the OPI as a joint venture, showcasing for the first time how a transboundary MPA could be established in North American waters. We were inclined to read this as signalling a nascent regional - and hence transboundary - sense of place and identity, if not citizenship. Even so, here neither, did we find any 'evidence' enabling us to argue convincingly that consideration was given to possibilities for BC FNs to work with WA tribes with a view to promoting traditional practices for using and governing marine commons.

5.1.4. A tentative reply regarding bifurcation

5.1.4.1. Understandings resulting from the gauging exercise

In this last paragraph, following the recommendation that Yin (2003) addresses to case study researchers, we shall first seek to discern patterns or trends in the results reaped from the gauging exercise. More precisely, looking across all five sub-themes, we wish to find out if there were noteworthy differences in the strides each vision appeared to make in terms of differentiation and/or complexification. We expect this to bring us greater clarity as to how close each vision seemingly came to expressing radically novel ways of thinking and regarding what sub-themes.

Next, we shall discuss if, informed by these trends, we might be in a position to settle the question of whether the macro-level vision that emerged in the course of respectively Phases 2 and 3 might credibly been claimed to have resulted from a bifurcation event or how close to such an event the detected shifts might be deemed to have come with regard to one or the other sub-theme.

Our discussion is based on the overview of results of the qualitative ratings displayed in **Annex 3**. As we took a cross-cut view of how the intermediate and ultimate visions were rated with respect to the five sub-themes, what immediately struck us was that a number of sub-themes scored a relatively high mark in relation to one or both of the two standards of differentiation and complexification. As far as sub-theme **2(a)** was concerned, the intermediate vision thus earned the relatively high mark (+) with respect to differentiation**.** The justification for this mark was that, departing from the notion of scientific consensus about the MPA concept underlined in the early vision, it recognised that other rationalities were at

play. The other (+) mark which both visions earned related to **1(b)** (ethics) and to **2(c)** (shared governance across the border). For ethics, this mark concerned both standards. We thus noted that the intermediary introduced new principles, seemingly inspired by indigenous/CS values. The standard of complexification was also honoured as the conventional divide between humans and non-humans became more blurred in both visions. The shifts in the direction of complexification that we noted both visions to display with respect to shared governance across the border, were also quite remarkable. Whereas a constituency of concerned citizen-stakeholders spanning a political border was evoked in the intermediate vision for the first time, the ultimate vision went even further in making more conspicuous a regional sense of place and identity ('we-ness'), if not citizenship, among non-aboriginal protagonists. Pride was thus expressed in the OPI as a joint venture showcasing how a transboundary MPA might for the first time be established in North American waters. Seen from an enaction perspective, the good marks earned by both visions in terms of complexification came as no surprise. This perspective would thus expect sustained and intense interactions within a collective with a transboundary scope to help bring about increasing acknowledgement of possibilities for establishing partnerships across the border.

What struck us was that, for both visions, the less satisfactory scores in terms of both standards pertained to governance regime and practices - sub-theme **2(b).** The thinking in this matter appeared to suffer both from insufficient opening up to 'alternative', unconventional governance tools and, as a possible correlate, from insufficient imagination as to how such tools might be brought together with more conventional ones in mutually beneficial productive combinations. This, we speculated, might have something to do with observations made during our discussion

in Sub-Section 1.3.4. (**Book II**) and further elaborated upon during the gauging discussion in Section 1.4. (pp. 161-169) of that same book. These observations suggested among others that reluctance on the part of the S&S Coalition to let the OPI stand out from government programmes held it somewhat back from exploring alternative paths.

All in all, the result of the qualitative ratings we performed in relation to the intermediate and the ultimate vision suggested that they each displayed qualitatively significant shifts in terms of either differentiation or complexification - or both - with respect to some of our sub-themes. However, none of these seemed to us to meet fully the requirements we associated with the optimal scenario we had in mind.

5.1.4.2. Taking a second look at bifurcation events

Since understandings reaped from our proto-exploration did not enable us to claim that even the ultimate vision complied with the optimal scenario with respect to at least one of the five sub-themes, by the same token, we could not legitimately argue that the OPI brought about radically novel ways of thinking about, and practicing governance of, marine commons. This observation would, it seems, in turn compel us to conclude that no bifurcation event occurred in the course of the OPI's heyday. However, before pronouncing a 'final' verdict, we decided to take a second look at the concept of bifurcation, pressing our thinking a bit harder on how it may be seen to relate to radical novelty when transposed to an empirical context focusing on cognitive shifts. Along with the decisions we took in Chapter 2 regarding what features would be required for ways of thinking to qualify as radically novel, drawing a conclusion as to whether observed cognitive shifts could convincingly be claimed to denote a

bifurcation event seemed to us to require a second decision. This (second) decision pertained to whether the radically novel ways of thinking assumed to flag this event were understood to emerge at one precise point, or whether it might make more sense to understand the event of bifurcation in terms of gradients. When first encountering the concept, we found it described in terms of certain critical *points* in the trajectory of emergent processes (Osberg & Biesta, 2007). During our theoretical discussion, however, we came to reason in terms of bifurcation 'thresholds.' As we immersed ourselves in the empirical terrain, with all its fuzziness, thinking about the event of bifurcation in such terms appeared to make ever more sense. Whereas a point by definition denotes either a narrowly localised place with a precisely indicated position or an exact moment in time, the notion of threshold seemed to us to grant more latitude for the fuzzy and gradual transitions more plausibly found in 'real world' social contexts, especially when looked at through a complexity lens. Conceiving bifurcation events as implying crossing a blurred threshold rather than as occurring at a sharply demarcated point, and as a gradual rather than an abrupt, one-off event, would then warrant reasoning in terms other than occurrence/non occurrence of a bifurcation event. Accordingly, we could now argue with some confidence that, where shifts - as was the case for both visions with respect to ethics and shared governance across the border - met substantially, albeit not fully, requirements we associated with the optimal scenario, and where these shifts over time moved further in the direction of these requirements, they could now legitimately be understood as bringing the vision for the sub-themes concerned ever closer to a bifurcation threshold, possibly even bringing this threshold within reach. This would in turn entitle us to draw the following, tentative conclusion in

relation to R.Q.I [115] : Since the ultimate vision continued, and further amplified, a trend already visible in the intermediate vision towards more differentiating and complexifying ways of thinking with respect to ethics and shared governance across the border, this vision could legitimately be seen to signal that a bifurcation threshold might have been within reach with respect to these sub-themes. We are even prepared to contend that such a threshold might have been crossed within a reasonably short span of time, had certain conditions, on which we shall reflect in Chapter 7, so allowed. We are furthermore ready to contend, already at this stage, that, as they transpired in the ultimate vision emerging during Phase 3, the ethical dimension and shared governance across the border were arguably broached in a way the OPI's instigators might not even have thought about when they launched the OPI in the course of 1999.

5.2. The Micro-level analysis: Addressing RQ. II and RQ.III

Introduction: How we went about addressing RQ. II and RQ.III

As we turned to the micro-level at which local interactions between protagonists directly concerned in the OPISA proposal took place, we focused on interactions that took place within the TBMPA meetings convened by the S&S Coalition as well as in other relevant fora held during the OPI's three and a half year heyday. Our purpose was to shed light on whether certain moments arguably occurred on these occasions that involved either dissenting speech and defiant acts or denoted pedagogic 'subjectivation' on the part of CS attendees. One question we

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[115] We are fully aware that the tentative conclusion we propose here is based on a limited evidential base. For this reason, a fully-fledged study drawing on a substantially broader body of files would obviously be required to put this conclusion further to the test.

wished to explore was whether the conspicuous opening up to dimensions and concepts familiar to indigenous ethics that we noted in both visions coincided with, or were preceded, by such acts or speech. Likewise, since we found the intermediate vision to mark a conspicuous stride towards a less consensual outlook on the MPA approach, this called for looking more closely at what happened at the micro-level during Phase 2, or in the time span leading up to it. Lastly, we wished to probe the extent to which CS representatives appeared to champion measures that would contribute to alleviating the partitioning of CS territory, and of the Salish Sea in particular It will be recalled that, as refined in Section 4.1., **RQ.II** read as follows:

> To what extent did interactions that took place at the micro-level include dissenting speech and defiant acts on the part of CS representatives challenging the proposal for the transboundary marine area on the table, as well as the logic underpinning it?

We also reformulated **RQ.III** as follows:

> To what extent did interactions that took place at the micro-level include speech on the part of CS representatives through which they brought to the fore ideas and perspectives differing distinctively from those prevailing among non-native protagonists and, in so doing, to what extent did they seem to experience pride in their own ability to bring a distinctive contribution?

Where Abrams (2009) couched relations between the CS and TEKW, on the one hand, and non-aboriginal OPI-protagonists and Western

science, on the other, in terms of Foucauldian power relations, we chose to travel down a somewhat different avenue. We looked instead at the OPI as a microcosm offering an opportunity for two distinctively different universes to be brought into each other's presence. This encounter would in turn allow protagonists informed by these universes, on an equal-to-equal basis, to build a common world that would nonetheless leave room for both fundamental dissent and on-going renewal of perspectives. The task we assigned to ourselves was to shed light on the extent to which CS attendees in TBMPA meetings, or other events relevant for the OPI, took advantage of these platforms to make their voices heard through dissenting speech and by bringing to the fore distinctive ideas and proposals, while also enacting (experienced) pedagogic 'subjectivation'.

To address this task, we deliberately imposed an important limitation on our micro-level analysis. When looking at what seemed to happen at meetings and events during which CS attendees interacted with non-native protagonists, we deliberately confined ourselves to CS perspectives and concerns that were either expressed directly by CS representatives attending TBMPA meetings or such that were reportedly articulated elsewhere and evoked at these meetings. We did not attempt to probe how particular non-aboriginal OPI protagonists responded to these inputs during, or in the wake of, these meetings. This focus was justified by the decision we made in Chapter 4 to concentrate on interactions between parts and whole (type-2 interactions) rather than on interactions between parts .

The analyses under **Steps 4** and **6** (Sections 2.4.and 2.6. - **Book II**) both confirmed that CS protagonists emitted messages either explicitly or implicitly objecting to existing or proposed principles and modalities for governing the marine commons included in the Salish Sea. They also

evinced that CS representatives emitted messages introducing distinctive proposals, often in conjunction with manifest pride in their ability to 'make a difference.' We were nonetheless still confronted with the question of whether these understandings in themselves justified bringing affirmative replies to RQ.II and RQ.III. In accordance with the heuristic framework developed in Chapter 2, what we were ultimately after was to shed light on whether statements or behaviour that came to expression at the micro-level might credibly be argued to have afforded certain shifts that became visible at the macro-level. We thus recall that, already when elaborating on Rancière's conception of democracy, we signalled that we understood interruption to manifest both as dissenting speech and acts and as the *effects* that such speech and acts could be shown to exert. Accordingly, our main preoccupation was to investigate whether CS messages that we pinpointed as expressing or suggesting dissent could plausibly be ascribed potentiality for exerting *actual* interruptive effects[116] on the two successive visions we saw emerge. We understood these effects to be such that would enable breaks with, or suspending, certain ways of thinking and doing. Likewise we wished to examine if, by introducing ideas grounded in a traditional worldview - and possibly also expressing awareness of - and pride in – their ability to bring a distinctive contribution, CS messages arguably exerted what we chose to call differentiating[117] effects, expanding

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[116] It will be noted here that we deliberately drew a distinction between 'potentiality' and actual 'effect.' According to Agamben (1999), the former implies both existence and non-existence, or being and non–being. As he states (p.182): "What is potential is capable of not being in actuality." Effects, on the other hand, are actualised potentiality imprinting themselves on the 'sensible' (in a Rancierian sense) as they become visible, audible and, possibly, tangible.

[117] It appeared all the more legitimate to use this qualifier in relation to messages of relevance for RQ.III/ pedagogic 'subjectivation' that, already when commenting in Chapter 2 on moments of pedagogic subjectivation from a complexity point of

and renewing the vision that became visible at the macro-level by bringing it to encompass distinctively different ways of thinking, seeing and doing.

Accordingly, when bringing together the two fairly congruent sets of understandings that resulted from our analyses under **Steps 4** and **6** for RQ.II and RQ.III respectively (Sections 2.4. and 2.6. - **Book II**), we proceeded to discuss to what extent messages we deemed relevant under each question displayed specific qualities which we deemed were required for them to have credible potential for exerting either interruptive or differentiating (actual) effects on the two successive visions we saw emerge. The assumption was here that, for this to be the case, CS messages would need to display a) outspokenness in presenting certain arguments, b) reasonable unambiguity across different messages relating to the same sub-theme and c) insistence over time[118]. Accordingly, the task ahead of us was, for messages suggesting criticisms or objections (Pointer1) and for each sub-theme, to assess, first, the outspokenness with which dissent was expressed; second, whether such messages were fraught with ambiguities that might be assumed to make them less audible and hence less forceful. Lastly, we would look at the insistence with which they were brought forth over time. Messages that we understood to introduce distinctively different ideas and options (Pointer 2) and that could be read as manifesting pride, among CS protagonists, in their own ability to make a distinctive contribution (Pointer 3) would be probed against these same qualities.

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view, we suggested that such moments might be understood to contribute to expanding the array of differentiated options potentially available.

[118] As we shall see later in the overall discussion regarding RQ.IV, we did not deem fulfilment of these requirements to constitute a sufficient condition for turning potentiality into actual effects visible at the macro-level. We thus expected additional conditions to play a role, notably the degree of openness and willingness to listen found among key protagonists in charge of giving shape to, and of promulgating, the vision for the OPISA that emerged at that level.

In order to prevent our multidimensional gauging exercise from becoming unwieldy, we took a synoptic or 'cross-quality' look at how messages pertaining to each sub-theme positioned themselves. This way of proceeding could, we thought, be justified if the three qualities were assumed to be mutually reinforcing. Furthermore, when looking for messages with differentiating potential, while we obviously maintained the distinction between messages through which CS protagonists introduced distinctively different ideas (Pointer 2) and those that denoted their pride in being able to make a distinctive contribution (Pointer 3), we brought together understandings reached for each pointer. Common sense would thus point out that the odds for CS messages to have a differentiating impact at the macro-level would be greater when messages presenting distinctive ideas and options in an outspoken, reasonably unequivocal and insistent way, were combined with pride, on the part of the speakers, in their own ability to bring a distinctive contribution, expressed in an equally outspoken, unequivocal, and insistent manner.

The results of the qualitative ratings for messages relevant for RQ.II and RQ.III respectively are displayed in **Annex 4**. Table 1 indicates for each sub-theme whether we felt able to give an affirmative, a partly affirmative, an inconclusive, or a negative reply to the question of whether the dissenting messages that CS protagonists emitted with respect to these sub-themes could be ascribed significant interruptive potential. As shown in Table 2 the marks pertaining to messages with differentiating potential were organised according to Pointers 2 and 3 as well as to the sub-cycle in which these messages were emitted.

As already hinted at in Paragraph 4.1.1.4., under our discussion about how we would tackle the temporal dimension in the empirical part of our research, when looking for moments during which CS representatives

emitted potentially interruptive or differentiating messages, and in preparation for our discussion of RQ.IV, we decided to break down the OPI's heyday into two sub-cycles that we dubbed respectively Sub-Cycle 1 and Sub-Cycle 2. While still framing the heyday years as one coherent cycle, in line with complex temporality, we posited this cycle to be made up of two consecutive and adjoining sub-cycles, at one and the same time distinct and intimately linked. Quite obviously, we set the beginning of Sub-Cycle 1 to coincide with the first TBMPA meeting in early October 1999 attended by a CS representative in the person of Saanich Elder (BC). We set the end of this sub-cycle to coincide with the end of Phase 2 (i.e. end of May 2001). As for Sub-Cycle 2, we set it to coincide with Phase 3 (i.e. from early June 2001 to end of May 2003). As will transpire from our discussion of how we dealt with RQ.IV in Section 5.3. below, the temporal delimitation of the two sub-cycles clearly reflected how we understood what we saw (or inferred) happening at the micro-level to relate to what became visible at the macro-level. Put otherwise, the temporal delimitation of the two sub-cycles was directly derived from our understanding of complex causality.

5.2.1. Interruption

5.2.1.1. The interruptive potential of Coast Salish messages

The degree of outspokenness and insistence with which dissent was expressed seemed to vary a good deal across the different sub-themes and over time. Dissenting messages were near-inexistent for **2(c)** and fairly muted and implicit for **1(a)**. Surprisingly, with respect to the latter sub-theme, we only found implicit criticism of Western science-informed

knowledge and no objection to this knowledge being privileged for identifying special sites[119]. By contrast, throughout both sub-cycles, we found both forceful and insistent dissenting messages pertaining to **1(b)** and **2(b).** As far as the former was concerned, we were particularly struck by the earnest, morally-grounded condemnation expressed in a number of messages. Thus, in Sub-Cycle 1, a Saanich Elder (BC) deplored desecration of ancestral sites and unsustainable fishing practices depleting entire tracts of the Salish Sea in the name of short-term profit. In Sub-Cycle 2, a tribal Elder (WA) equally denounced that agreements, treaties and such have failed to be followed through. We expected such reprobation calling upon non-natives' conscience to be difficult simply to ignore. As for 2(b), objections to provisions that might infringe upon ancestral rights to use marine habitats both for sustenance and for cultural/ceremonial use, and, in particular, prohibited use in 'no-take' areas, came across as particularly vehement in Sub-Cycle 1.

Yet, for all their outspokenness and insistence, dissenting messages pertaining to **1(b)** and **2(b)** were not entirely devoid of ambiguity. For example, with respect to ethics, there seemed to be conspicuous inconsistency between Elders' implicit emphasis on long-term values and a natural resource manager working for tribes openly subscribing to a logic favouring short-term economic interests. Dissenting messages emitted in Sub-Cycle 1 regarding governance regimes and practices**,** were equally ambiguous. While opposition seemed particularly vehement with regard to 'no-take' areas or reserves, upon closer inspection, objections to restricted use of certain areas of relevance for fisheries seemed less entrenched. Accordingly, in a fairly extensive discussion under **Step 4**, we argued in

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[119] We even found a Tulalip tribal speaker object to lack of scientific justification for MPA site selections.

favour of drawing a clear distinction, within the overall 'no-take' issue, between infringement of traditional rights to steward ancestral fishing grounds and temporary prohibition of certain specific areas. The latter provision seemed acceptable to at least some FNs and tribes, provided they would remain duly involved in devising and implementing such provisions.

Whereas we deemed dissenting messages emitted in Sub-Cycle regarding **2(a)** to be both outspoken and forceful, as far as ambiguity was concerned, presumably as a result of varying CS perspectives, the picture for this sub-theme remained disturbingly unclear. On the one hand, we observed fairly conciliatory signals from BC FNs, notably from those abiding by Douglas treaties with regard to the OPI process itself[120]. On the other, we noted that, throughout Sub-Cycle 1, quite a few BC FNs as well as most WA Tribes directly concerned by the OPI stayed away from the process. Likewise, in Sub-Cycle 2, some WA Tribes expressed clear opposition to the OPI process while the representative of the Samish Tribe expressed support. As for the FN outreach facilitator, it was unclear whether her statement about the Chiefs in her area being excited about MPAs referred to support to or, on the contrary, rejection of this marine conservation approach. Such lack of clarity prompted us to consider as uncertain the interruptive potential of messages emitted throughout the OPI's heyday that pertained to sub-theme 2(a).

Generally speaking, we ascribed the ambiguities we detected to dilemmas or tensions that the CS were experiencing, caught as they seemed to be between different logics, each with its own discourse. When represented through their, mostly non-aboriginal and Western-trained, natural resource managers, unsurprisingly, Western rationality and language seemed to predominate. When speaking through their formal

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[120] We refer here to footnote 104 in **Book II**

institutions, a legal language foregrounding rights appeared to prevail. Alongside these two logics, however, when tribal or FN Elders took the floor, we caught a glimpse of an altogether different worldview. Strikingly, we found a recurrent theme running through these Elders' dissenting messages. We perceived the thrust of most objections and criticisms expressed in these messages to target conventionally drawn limits and boundaries, be it in relation to knowledge generation, human/non-human relations, approaches undergirding governance of marine commons or regimes and practices applied.[121] This point will be further elaborated upon in Chapter 7.

5.2.1.2. Tentative reply to RQ.II

On the basis of the understandings reached above, we felt able to conclude that CS representatives did indeed take the floor during the OPI's heyday to express objections to and criticism of ways of thinking about governance of the marine commons included in the Salish Sea. What is more, despite some ambiguities, we deemed dissenting messages

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[121]To substantiate this claim we point to the implicit objection, perceived under **1(a),** to non-native knowledge focusing narrowly on biological dimensions (BC Aboriginal Fisheries Commission) and chopping up what is holistic (FN Outreach and Liaison facilitator). Under **1(b),** we read the Saanich Elder's remark about human dependency on marine life as a reminder that humans and non-humans cannot be cut off from each other, while another Elder from BC underlined that "All is one". This line of thinking also found expression under **2(a)** through implicit criticism of the MPA approach for concentrating on limited and bounded areas, and also of conservation groups' thinking about the 'environment' as "a space to escape to" and, on the other, the native perspective seeing it as "a place to live, hunt, and fish." Lastly, under **2(b)**, but also of indirect relevance for **2(c)**, we would mention the criticism, directed at the strictly defined boundaries for usual and accustomed fishing areas, for jeopardizing free movement and, potentially, efforts to revive a notion of borderless CS waters.

pertaining to **1(b)** and **2(b)** sufficiently forceful and insistent so as to be ascribed significant interruptive potential. This led us in turn to assume that these messages would leave some traces in the macro-level vision that emerged in Phase 2 and Phase 3 respectively.

Before turning to RQ.III, we still need to address the question of defiant behaviour on the part of CS representatives. To shed light on this question, we looked at patterns in CS participation in TBMPA meetings. What struck us here was that fairly regular CS attendance in TBMPA meetings and fairly active participation on the part of CS attendees throughout Sub-Cycle 1 stood in stark contrast to scant CS attendance and participation in Sub-Cycle 2. This might prompt some to interpret CS Elders' staying away or keeping their presence at a minimum as in itself signalling growing defiance. They might attribute it in particular to reluctance on the part of these Elders to being 'co-opted' into an initiative whose ideas and terms they might have perceived as set by others (Mohan, 2001). They might also point out that fairly limited CS attendance, on the part of WA tribes, might have to do with the OPI's non-governmental nature. Pointing at WA treaty-tribes' governmental status (also enjoyed by BC FNs), a secondary source suggested that they were not going to jeopardise privileged government-to-government relationships by embarking on an NGO-driven initiative[122]. While we were ready to concede that these arguments make some sense, rather than interpreting CS Elder's staying away from TBMPA meetings as deliberate CS defiance against or purported obstruction of the OP project, another thesis might be advanced. This thesis suggests that CS Elder's staying away from TBMPA meetings might best

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[122] To defend this thesis, they might point out that, already in October 1999, the Saanich Elder seemingly expressed some distrust in that respect as he warned " the treaties are not to be tampered with by federal Crown, *let alone NGOs*"[emphasis added].

be interpreted as signalling that they perceived the vision carried by the S&S Coalition to have come closer to taking their concerns and objections into account[123]. Viewing it therefore less imperative to make their voices directly heard at these meetings, they might have decided instead to devote scarce time and resources to other battles[124]. We shall further discuss this thesis in the context of RQ. IV.

5.2.2. Pedagogic 'subjectivation'

5.2.2.1. The differentiating potential of Coast Salish messages

While, regarding sub-theme **1(a)**, CS representatives unquestionably introduced recommendations in the course of Sub-Cycle 1 expressly referring to traditional knowledge about marine areas and marine life, we also observed inconsistencies with respect to the role that TEKW was envisioned to play. At the same time, however, making up somewhat for such inconsistencies, we found CS representatives to extol the added value that TEKW would bring. By contrast, extolling of traditional knowledge appeared to ebb away during Sub-Cycle 2. More than anything else, the inferences we drew from the Samish representative's proposals and from the FN Outreach and Liaison facilitator's report, both of which were put forward at the end of Sub-Cycle 2, were based on speculation on

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[123] Although we are speculating here, we see this as a possible illustration of how feed-back effects from the macro-level might have affected the micro-level.
[124] Other controversies in which FNs and tribes were engulfed during Sub-Cycle 2 included fish farming of Atlantic salmon and, more generally aquaculture. For Saanich and Sencoten speaking nations in particular, the proposal by BC Hydro to build a gas pipeline across the Strait of Georgia (GSX) and establishment of the Gulf Islands National Park took up most of their time and resources. The report mentioned in footnote 271 confirms this as it evokes FNs and tribes' limited time, human resources and finances compelling many of them "to wear many hats at the same time" and to adopt a "constant crisis management mode".

our part. Against this backdrop we ascribed significant differentiating potential to messages that were emitted in Sub-Cycle 1, but opted for an inconclusive reply in relation to messages emitted during Sub-Cycle 2.

As for sub-theme **1(b)**, both sub-cycles witnessed submission of quite a few ideas evidently informed by CS ethical values. For instance, in Sub-Cycle 1, a statement by a Saanich Elder (BC) evoked marine creatures as teachers reminding humans that they depended on non-humans for their survival. In this sub-cycle, the same Elder- now Head of the Coast Salish Sea Council - brought in moral principles as he exhorted non-native fellow attendees to "work hard" and to choose "the High Road" as they sought to promote the OP proposal. In Sub-Cycle 2 the sacred dimension ("To us it is all sacred") was evoked by a Swinomish Elder (WA), together with long-term orientation and the precautionary principle,mentioned by a Tulalip Elder. Lastly, when evoking the notion of responsibility in relation to co-managing Northwest Straits waters, a Tulalip speaker (WA) seemingly foregrounded a principle pivotal for CS ethics, also in relation to non-humans.

Both sub-cycles also witnessed express manifestation of pride in these values, thereby confirming that confidence in these values remained extensive. Accordingly, despite the discrepancy that we noticed in Sub-Cycle 1 between messages emitted by tribal Elders and by a natural resource manager, attaching more weight to Elders' voices, we deemed the former messages sufficiently outspoken and insistent to be ascribed substantial potential for having an actual differentiating effect at the macro-level throughout the time span covered by the OPI's heyday.

In view of both FN and tribal scepticism towards MPAs in general, it would have been surprising to find proposals relating to the MPA process - sub-theme **2(a)** - going beyond ensuring FN involvement in the process

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from the outset. Sub-Cycle 1 nonetheless witnessed articulate and insistent messages pointing to MPAs as forming part of a wider spatial context, and to the MPA approach as forming part of broader policies. Moreover, two statements emitted by the Saanich Elder (BC) denoted a sense of collective self-worth. The former suggested that non-natives might benefit from being exposed to other ways of looking at marine conservation. The other recommended that traditional ways of thinking about marine creatures be injected into the MPA discussion. By contrast, the messages we captured in Sub-Cycle 2 remained conspicuously silent regarding the distinctive contribution CS thinking might bring relative to MPAs. Against this backdrop we ascribed significant differentiating potential to messages emitted in Sub-Cycle 1 but none to those emitted in Sub-Cycle 2.

As for messages pertaining to sub-theme **2(b)**, in Sub-Cycle 1, several messages evoked traditional governance practices such as multi-use, at times associated with temporary closure of particularly vulnerable areas. At the same time we detected a sense of collective self-worth in the Saanich Elder's account of how, thanks to advice from FNs, the Canadian federal authorities put an end to inappropriate practices in relation to salmon recovery. We also read his reference to "the greatest fishing stations" being located on Saanich speaking territory as implicitly signalling pride in his people's prudent governance that secured plentiful harvests. Likewise we were also inclined to read a recommendation from the BC Aboriginal Fisheries Commission for FNs to participate in MPA enforcement, alongside management and monitoring, as asserting FNs' role as full-fledged, self-governing regulators. In Sub-Cycle 2, apart from repeated emphasis on restoration on the part of Tulalip speaker (WA), we found the Samish Tribe representative (WA) to foreground historical governance practices in the form of reef-net fishing. Also in this sub-cycle,

a Tulalip speaker asserted the tribes' share in authority and responsibility as co-managers of northwest straits waters and pointed to (respect of) tribal rights as a way of strengthening existing protection and restoration efforts. Combined, these observations inclined us to ascribe significant differentiating potential to messages pertaining to this sub-theme throughout the OPI's heyday.

Lastly, for sub-theme **2(c)**, in Sub-Cycle 1, we noticed a conspicuous tension between, on the one hand, a vision of a seamless Coast Salish territory and, on the other, one acknowledging a political border splitting up CS communities. This tension made it unclear how the CS contemplated alleviating this partitioning through actions conducted jointly by CS communities on either side of the international border. Making up in part for this omission, we saw benefits of the CS working together across the border expressly recognised in Sub-Cycle 1. In Sub-Cycle 2, the representative of the Samish tribe furthermore conjured up a picture of a borderless OPISA where the same traditional practices could be revived. Since, on balance, we found the messages emitted somewhat contradictory, we opted for keeping open the question of the differentiating potential of CS messages, emitted during either sub-cycles, with regard to shared governance across the border. We remained aware that several circumstances might have prevented us for doing justice to CS messages in that respect. First the discussions held by CS Elders at the Gathering at the Lummi reservation in June 2000 remained inaccessible to us for linguistic reasons. Second, a number of sources that would have been central to further highlighting CS thinking regarding possibilities for shared governance across the border had unfortunately been lost. Against this backdrop we opted for assigning a '?' mark for both pointers and in both sub-cycles.

5.2.2.2. Tentative reply to RQ.III

Understandings relating to this research question suggested that tribal Elders to a certain degree used meetings convened by the S&S Coalition, as well as other parallel fora, of direct relevance for the OPI, as platforms for putting forward ideas and recommendations informed by a traditional worldview, and for expressing confidence in the contribution that considerations peculiar to a CS worldview could bring. While the outspokenness, unambiguity and insistence with which proposals were put forward varied across sub-themes and according to when they were emitted, as shown in **Annex 4** , we felt able to ascribe significant differentiating potential to messages pertaining to sub-themes 1(b) and 2(b) in both sub-cycles as well as to sub-theme 1(a) and 2(a) in Sub-Cycle 1.

5.3. Linking the two levels of analysis: Addressing RQ. IV

Introduction: how we went about addressing RQ.IV

To feel sufficiently confident, after completing our micro-level analysis, so as to contend that, as they interacted with non-native protagonists, CS representatives emitted messages with significant interruptive and differentiating potential constituted in itself an important landmark in our explorative journey. Yet, pivotal though they were, the tentative replies we provided for RQ.II and RQ.III were but stepping-stones in a progression towards the ultimate leg of our proto-exploration, namely to shed light on RQ. IV. This leg, we recall, would imply

confronting the replies we provided for RQ.II and RQ.III with the reply we provided for RQ.I.

According to the recursive approach adopted throughout this proto-exploration, we turned the understandings reached through our two-level analysis into key inputs to be fed into the discussion pertaining to **RQ. IV**. As reformulated in Chapter 4, this question read as follows:

To what extent could dissenting speech and defiant acts on the part of CS representatives as well as speech, through which they brought to the fore ideas and perspectives differing distinctively from those prevailing among non-native protagonists, and through which they signalled pride in their own ability to bring a distinctive contribution, be argued to have afforded one or several bifurcation events calling forth, at the macro-level, radical novelty in the form of qualitative shifts widening the range of distinctively different perspectives and approaches addressing the plight of the Salish Sea and denoting a significantly more relational and contextualising way of thinking about this problem?

Reformulated in the light of decisions we took when dealing with the three first research questions, we reformulated this question as follows, making it considerably shorter:

To what extent could a credible case be made that CS messages, to which we ascribed significant interruptive or differentiating potential, afforded qualitatively significant shifts in respectively the intermediate and the ultimate vision in terms of differentiation and complexification?

Since RQ.IV is clearly grounded in complex causality, it seemed appropriate to recall a few tenets central to this causality. Renouncing, as complex causality demands, any attempt to establish conventional cause-effect linkages, our purpose was not to provide an explanation for why certain shifts did or did not occur in the visions that successively became visible at the macro-level. We recall that, as it proscribes framing what played out at the micro-level as ontologically prior to, and as 'giving rise to', the macro-level vision (Osberg & Biesta, 2003), complex causality frames instead higher- and lower-level processes as *cooperating* in producing new phenomena at the macro-level, be it an order, properties, or relational patterns (Goldstein, 2000, p. 17). It asks us to view what took place at the micro-level as being co-present with what emerged at the macro-level (Emmeche et al., 1997). Messages with significant interruptive and differentiating potential could now be understood to be part and parcel of the process of emergence itself and, ultimately, of the shifts resulting from this process. We thus recall that, for Juarrero (1999), perturbations and fluctuations affording bifurcation can be assumed to "leave their lasting marks on the specific configuration that emerges". Accordingly, our task was to assess to what extent CS messages, emitted during TBMPA meetings and other relevant fora and to which we ascribed significant interruptive and differentiating potential, appeared to leave visible traces on the macro-level vision that emerged in different phases of the OPI's history, thus turning from potentially into *effectively* interruptive [125] and differentiating acts.

Following Davis and Sumara (2006), we next embarked upon a level-jumping exercise based on the qualitative ratings conducted at the

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[125]Apart from debunking of ways of thinking deemed unacceptable, dysfunctional, or unsustainable, we also counted suspension of certain proposals among visible effects of interruptive acts.

macro- and micro-level respectively (displayed in **Annex 5** - Tables 1 and 2).When confronting results garnered from the micro- and macro-level analysis respectively, we could now reap the full dividend of understanding the OPI's heyday to be made up of two distinct, yet interrelated sub-cycles and of upholding this distinction throughout the micro-level inquiry. Time has come for us to explicate further the rationale for delimiting Sub-Cycle 1 and Sub-Cycle 2 as we did when dealing with RQ.II and RQ.III. While it thus appeared obvious to have the former coincide with the first TBMPA meeting with CS attendance, there appeared to be good reasons for making the end of this sub-cycle coincide with the end of Phase 2. The latter delimitation, so we reasoned, made it legitimate to assume that CS emitted up till end of May 2001 might somehow – at least in principle - have affected the intermediate vision. As for delimitation of Sub-cycle 2, we set it so as to enable us to discuss possible impacts of CS messages on the ultimate vision alone. In other words we considered CS messages emitted at meetings and events that took place between early June 2001 and end of May 2003 as relevant for the ultimate vision *only*. Furthermore, recalling that we understood the ultimate vision to have emerged over a time span of about 12 months stretching from May 2002 to May 2003, when commenting on possible impacts on this vision of CS messages emitted in Sub-Cycle 2, we bore in mind that only messages emitted *prior* to May 2002 could be assumed to have affected what became visible in the "Wave of the Future' publication, which was issued at the beginning of May 2002.

Conceiving messages emitted in Sub-Cycle 1 to have a possible deferred impact on the ultimate vision, or to amplify effects resulting from messages emitted during Sub-Cycle 2, we considered messages emitted in the first sub-cycle to have relevance for both the intermediate and the ultimate vision. We thus conceived messages, even those going back

several years, to have possibly helped shape the ultimate vision, as they reverberated through time. From this followed that we considered messages, to which we ascribed significant interruptive and/or differentiating potential, and which were emitted in the course of either sub-cycle to have relevance for the ultimate vision. Crucially, we did not assume the reverse to apply. Even if we found complex temporality to imply framing time in terms other than a unidirectional, forward-oriented arrow, we did not understand it to require us to buy into the - to us perplexing - idea that effects of *future* events or acts could be understood also to spill back into the past. We therefore ruled out that shifts in the intermediate vision that became visible in Phase 2 (early February to end of May 2001) - and hence still in sub-Cycle 1 - might have been afforded by CS messages emitted in Sub-Cycle 2, that is to say, from June 2001 onwards.

In light of the understandings derived from the level-jumping exercise, we addressed the following question: how plausible were the linkages we suggested in Chapter 2 between what emerged at the macro-level of the OPI as a whole, and what CS representatives expressed or implied during local discussions?

5.3.1. Understanding the impact of Coast Salish messages with significant interruptive potential

We shall concentrate here on sub-themes **1(b**) and **2(b)** since, as shown in **Annex 5** (Table 1), we deemed CS messages pertaining to both sub-themes to be sufficiently outspoken and insistent to be ascribed significant interruptive potential.

We felt inclined to understand messages emitted in Sub-Cycle 1 pertaining to **1(b)/**ethics to have left some traces on both visions notably in the form of a move away from conventional, clear-cut separation between humans and non-humans. At the same time, however, we remained aware that messages originating from sources other than those we examined might have contributed just as much in pushing these visions towards more relational ethics. Also, against all expectations, morally-tinged reprobation that CS protagonists expressed in Sub-Cycle 1 and 2 seemingly left little, if any, imprint on either vision.

As we looked more closely at the controversial issue of 'no-takes'/sanctuaries/marine reserves under **2(b)**, in view of the fierce opposition and resistance to this issue that the CS manifested already in the early days of the OPI, we should have expected the intermediate or, at any rate, the ultimate vision to skip this governance option altogether. Instead, not only did we see it expressly evoked in one of our primary sources pertaining to Phase 1; we also found it repeatedly evoked and stoutly defended in the ultimate vision as exposed in the 'Wave of the Future' publication. Only at the eleventh hour, prior to submission of the OP proposal to the BC/WA Environmental Cooperation Council in early April 2003 did this option appear to be relinquished. Yet, since the notion of (permanent) prohibition of any use nevertheless seemed to be retained, albeit under a different name, we were inclined to see this withdrawal as being more than anything else of a 'cosmetic' nature.

5.3.2. Understanding the impact of Coast Salish messages with significant
      differentiating potential

As shown in **Annex 5** (Table 2), messages that earned positive marks for *both* pointers in the same sub-cycle and that were hence more likely to leave visible traces at the macro-level pertained to all sub-themes barring sub-theme 2(c).

For sub-theme **1(a)**, the idea of making knowledge about how certain areas were used by humans form part of the criteria informing identification and designation of MPAs seemingly found an echo in the ultimate vision. What particularly struck us in this vision was its apparent acknowledgment that, within TEKW, experience and practices played a central role for generating knowledge.

For **1(b)**, we were inclined to consider CS messages emitted in Sub-Cycle 1, which - implicitly or explicitly - drew attention to interconnectedness between humans and non-human beings and processes, as having played a role in the blurring of the divide between humans and non-humans that we observed in the intermediate vision and, more generally, in making the ethical dimension more conspicuous in this vision. Here too, however, we surmised that the reference to 'seventh-generation thinking' was made under the effect of messages other than those we examined. As for the ultimate vision, its express allusion to virtues such as 'care' or 'sense of duty' could be read as suggesting that the Saanich Elder's exhortation in Sub-Cycle I for virtues to inform the OP work might have been heeded after all, albeit belatedly. On the other hand, a Tulalip speaker evoking the principle of precaution at an MPA training seminar in October 2002 came too late to warrant any link between this statement and

the reference to the human footprint found in the 'Wave of the Future' publication.

In relation to sub-theme **2(a)**, two key features in Sub-Cycle 1 were, first, the BC Aboriginal Fisheries Commission's recommendation calling for the linking MPAs to integrated coastal management, and second, several messages recommending a comprehensive approach encompassing the Salish Sea as a whole. We also noted the Saanich Elder's proposal to hold a workshop to familiarise non-natives with CS concepts of MPAs and the marine environment in general, as well as his recommendation that the traditional way of thinking be injected into the MPA discussion. Nothing, however, in the intermediate vision indicated that either of these messages was taken on board. By contrast, the ultimate vision explicitly admitted that the MPA approach could not *per se* address all the problems posing a threat to the Salish Sea. It furthermore mentioned coastal development and how it might affect (marine) habitats. This prompted us to wonder if this marked acknowledgement, albeit somewhat belatedly, of one among a series of recommendations on MPAs, emitted by the BC Aboriginal Fisheries Commission and brought into TBMPA discussions in the course of 2000.

For **2(b)**, one key feature we saw foregrounded in Sub-Cycle 1 was restoration geared to ailing populations of marine species and their rapidly deteriorating habitats. Moreover, several messages evoked traditional governance practices such as (sustainable) multi-use and temporary closing of vulnerable areas. While the intermediate vision and the ultimate vision (as well as the early vision for that matter) all mentioned (habitat) restoration and species recovery among their aspirations, neither appeared to grant restorative actions the prominent place the CS might have hoped for. On the other hand, the interest expressed in the 'Wave of the Future'

publication in traditional practices for governing marine commons might be seen as aroused under the deferred effect of the Saanich Elder's extolling of plentiful harvests and hence sustainable fishing practices. We also suggested that a Tulalip speaker's confident appraisal of the contribution that respect of tribal rights would bring in strengthening existing protection and restoration efforts might have left a lasting impression on those S&S Coalition partners that heard him speak.

5.3.3. Tentative reply to RQ.IV

The selective confrontation of understandings and assessments afforded by the level-jumping exercise as summarised above, arguably allowed us to get a first idea about the extent to which establishing some form of linkage between CS messages emitted at the micro-level, and shifts noted at the macro-level, appeared to make sense. The reply we arrived at relative to RQ.IV could, however, be nothing but cautious and provisional.

It was cautious on the grounds that, even if it appeared tenable to include a number of CS messages among fluxes that arguably afforded the qualitatively significant shifts we noted in the two successive macro-level visions, we could never be sure that effects we tentatively attributed to these messages did not originate from messages proffered elsewhere. Our focusing on TBMPA meetings - and a couple of other fora that we deemed relevant - obviously entailed that we did not take into account influences and pressures to which the S&S Coalition was exposed on the part of constituencies other than the CS. Even a fully-fledged study would inevitably have led to our conceding that many other influences, 'internal' or 'external' to the OPI, might just as plausibly have afforded the shifts we observed. This caveat notwithstanding, to those who might infer from our

discussion that the basis for establishing any form of linkage between potentially interruptive and differentiating messages, on the one hand, and the qualitatively significant shifts we noted in the successive visions, on the other, was at best inconclusive, we propose the following observation: while readily admitting that our partial discussions under Sub-Sections 5.3.1. and 5.3.2. left us at times undecided regarding the actual impact on either vision of CS messages, several of the qualitatively significant strides noted at the macro-level unquestionably touched upon aspects or dimensions in relation to which the CS expressed objections or criticisms, or introduced distinctive considerations with emphasis on the added value these might bring.

Our reply to RQ.IV was also inevitably provisional. As Annells (1996) cautions, since interpretation is an ever-evolving process, there can be no definitive interpretation.

5.4. Tentative conclusion regarding central research question: Significant headway towards novel thinking about marine commons

The question we address in this last section is central to our entire research effort, namely:

Can the OPI, in its heyday, credibly be claimed to have fulfilled the potential we initially ascribed to it for embodying a space that witnessed democratic education, revisited as a process of (strong) emergence, through which radically novel ways of being, seeing, and doing relative to governance of marine commons were called forth, notably under the effect of interruptive and differentiating speech?

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In our attempt to reply to this crucial question we shall first emphasise that CS protagonists undoubtedly seized opportunities for questioning principles and modalities for governing marine commons informed by a logic differing markedly from their own. As they let their voices be heard, they verified their claim to be included among those that were seen and heard (as opposed to those who were overlooked or ignored). Furthermore, since, on various occasions, they pointed to ways of remedying the plight of the Salish Sea based on their peculiar knowledge and experience and also came across as recognising, that, in so doing, they were able to bring a valuable, distinctive contribution, they could also be claimed to act as pedagogical subjects. According to a Rancierian conception, therefore, the OPI would be deemed to fulfil requirements for qualifying as a space witnessing the experiment of democratic education. Yet, the conception of democratic education we adhered to following our discussion in Chapter 2 was more demanding. Informed by complexity's 'strong' emergence strand, we suggested in this chapter that, for spaces to be legitimately considered spaces witnessing democratic education, their capacity to call forth *radically novel* ways of thinking, seeing, and doing would need to be convincingly vindicated. We associated such ways with two shifts: outward and qualitatively significant expansion and renewal of the array of options contemplated for action and a leap upward towards higher-order, significantly more relational and contextualising ways of thinking about, and addressing, the problem at hand.

Subsequent to gauging the two successive visions against what we deemed to be an optimal scenario that we conceived to reflect radically novel principles and modalities for governing the marine commons included in the Salish Sea, in neither of them did the principles and modalities contemplated seem to undergo shifts bringing them up to the level of, and hence on par

with, principles and modalities that such a scenario would imply. By the same token, we felt unable to claim that either of the two visions had crossed a bifurcation threshold. Against this backdrop, and bearing in mind complexity thinking's proscribing assertive and definitive conclusions, we felt at first tempted to advance as a tentative conclusion that, not even in its heyday, did the OPI embody a space within which a democratic education process as we understood it appeared to have unfolded.

This somewhat disappointing preliminary conclusion did not come as a complete surprise. Already when embarking upon our proto-exploration, we mentally prepared ourselves for the eventuality that, for all the strikingly favourable conditions that prevailed in its heyday, as with any experiment, there could be no guarantee that the OPI would prove capable of calling forth radically novel principles and modalities for governing marine commons [126] Moreover, if looked upon as an exercise in what Osberg and Biesta (2003, p. 93) call "experimenting with our world," the OPI could in no event be framed as unsuccessful.

Further reflection nonetheless prompted us to nuance and soften somewhat what might seem a harsh verdict. We came to realise that the very gauging of the two successive visions against an optimal scenario reflecting what we understood to be radically novel principles and modalities for governing marine commons in effect set the bar quite high. For example, comparing the two visions to this scenario made us particularly sensitive – as well as critical of - to silences or omissions in the two visions. Such comparison also led us to be disappointed when sensing hesitation and caution where we would have hoped to find boldness.

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[126] Some might suggest here that we might have selected another case, in which a democratic education process could convincingly be argued to have taken place. In reply to this remark, we would argue that only hindsight allows making judgments about the soundness and appropriateness of initial choices.

Informed by these self-reflexive considerations, we therefore decided that it would be somewhat unfair to allow an overly demanding attitude to eclipse the qualitatively significant strides we observed in - or inferred from - either vision, notably with respect to ethics and shared governance across the border. For the former sub-theme, we deemed the shifts noted in the ultimate vision to have come reasonably close in terms of both differentiation and complexification to what we envisioned an optimal scenario would imply. As for the latter, we saw both visions make noteworthy strides towards complexification as a regional - and hence also transboundary sense of place - came to be more conspicuous over time. One might even advance that, under the assumption that issues touching upon collectively-held values, as well as upon place-bound identity, are fraught with considerable inertia, and hence tend to be more difficult to reframe, the shifts we noted with regard to both issues seemed all the more remarkable. Our inquiry furthermore suggested that the OPI enacted a space of invention and experimentation since it promoted the innovative concept of a transboundary marine protected area, brought as-yet-unconceived concepts into the world and pointed to as-yet-unexperimented combinations of regulatory and voluntary measures.

As a further mitigating consideration, we could point out that these were still early days. What we called the ultimate vision emerged less than three years after the early vision was first circulated to a wider constituency. One might indeed wonder how justifiable it was to expect radical shifts over such a short span of time. This consideration in turn led us to speculate that we might eventually have ended up with a stronger - albeit still neither assertive nor definitive - conclusion regarding the OPI's fulfilment of the potential *qua* space for democratic education we initially ascribed to it, had contextual dynamics allowed it to maintain its

momentum, provided the CS subsequently decided to engage more actively with the OPI. We thus consider it highly plausible that the CS Gathering, which took place at regular intervals in various locations throughout the Salish Sea region from 2005 onward, and at which, among others, possibilities for WA tribes and BC FNs to join forces across the border were increasingly discussed, might have come to play a particularly important role in this respect. This Gathering might thus be conceived to provide an impetus forceful enough to bring about critical shifts, both in terms of differentiation and complexification, in the way the S&S Coalition, on behalf of the OPI, would envision governance of marine commons included in the Salish Sea. Under such conditions, rather than embodying a space that (merely) brought about qualitatively significant shifts relative to ethical issues and shared governance across the border, prospects would have been far brighter for the OPI to engender principles breaking for good with principles, that so far, informed governance of the marine commons of the Salish Sea. Invention of modalities upending, largely fragmented ways of practicing such governance, would hence had allowed the OPI to earn the status of a space that harboured a full-blown democratic education process[127].

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[127]Ending our proto-exploration on a speculative note only confirms Ginzburg's (1989) comment that retrospective or historical conclusions are inevitably endowed with an insuppressible speculative margin. Rather than talking about conclusions, it might perhaps be more appropriate to say that what we arrived at were insights combining understandings derived from our proto-exploration with a degree of thought experiment.

CHAPTER 6: HEADWINDS, EDDIES AND FOG

Introduction

In Chapter 4 we discussed at some length the implications that our decision to approach the OPI from a complexity perspective entailed, both in terms of research strategy and methodology. In this chapter, we shall look more closely at the challenges and constraints [128] we encountered during our inquiry. It is divided into four sections:

Section 1 elaborates on the challenges that delimiting the OPI as well as transposing complex temporality onto the empirical context of the OPI confronted us with. It also sketches out features that the complexity perspective seemed to make less visible.

Section 2 discusses the constraints that resulted from certain strategic and methodological decisions. After commenting on how we sought to cope with the challenge of maintaining an open-ended research process and of turning the concept of radical novelty into something empirically observable and gaugeable, we discuss how we strove to find the right balance between an adaptive and a rigorous methodology.

Section 3 discusses limitations inherent to the understandings and conclusions we reached. We also discuss to what extent these understandings appeared to comply with quality standards prescribed for qualitatively-oriented educational researchers.

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[128] We prefer the term 'constraint' to the more conventional 'limitation' for two primary reasons: First, 'constraint' seems to sit better with the spirit and the letter of complexity thinking. Second, we recall that constraints can play both a hampering role - bringing it close to what we understand the term 'limitation' to suggest - and an enabling role, turning what at first glance seems to be a weakness into a strength. That said, in the discussion that follows, we shall focus on the shortcomings inherent in our inquiry while windfalls will be discussed in Chapter 7..'

Section 4 evokes other frameworks that appear relevant for shedding light on our case and presents rationales for why they fell by the wayside.

6.1. Constraints ensuing from meta-theoretical tenets

6.1.1. Delimiting the Orca Pass Initiative

Already in Chapter 1, and as shown in **Annex 1,** rather than a monolithic body, the Coalition itself appeared to us to be far closer to a set of ever-wider concentric circles with, at their core the two organisations co-chairing the Coalition, namely the GSA and P4PS. This in turn prompted us to characterise it as a multi-layered nebula brought into existence by interactions and relationships. The aptness of this metaphor became ever more evident as we delved into the documentary material at our disposal. The fuzziness, porosity and constant fluctuation of the boundaries 'separating' the OPI from its wider context had the effect of making somewhat uncertain what constituted the 'inside' as opposed to the 'outside' of the initiative and of compelling us to remain attentive to what happened at its fringes. For instance some BC FN and WA tribes seemed undecided as to whether to take part in the OPI or not, while others chose to attend fora that, while running parallel to it, were nonetheless of direct relevance to it or, more generally, made their position on MPAs clear elsewhere when in the presence of the S&S Coalition's key organisations. At the same time, the complexity lens invited us to see the OPI as a holon whose constituent parts were the organisations and groups that took part in discussions relating specifically to the OPISA. It also invited apprehending the OPI as nested in the wider context of the Salish Sea region within

which it was caught up in a tightly-knit web of multi-dimensional relationships. As a result, as we struggled to delimit the OPI, we found ourselves, to a large extent, settling for a fuzzy logic (Berkes, 2008, pp. 198-199), under which transition from membership to non-membership is conceived in terms of gradients rather than as clear-cut and abrupt.

This notwithstanding, when conducted at the macro-level, the analytical procedure demanded a clearly identifiable macro-level protagonist. Since it was the S&S Coalition *qua* collective body that presented the successive visions for the OPISA to the 'outside world', settling for the Coalition as embodying the OPI and as speaking on its behalf seemed an obvious decision. However, even this decision left some haziness. Moreover, owing in large part to the circumstance that the bulk of the sources we used in our inquiry originated from the S&S Coalition's two lead organisations, i.e. the GSA and P4PS, we found it difficult at times to keep our gaze firmly on the OPI as a macro-level protagonist, as we were near-irresistibly pulled towards a more classic apprehension of these organisations as key protagonists, also at the macro-level.

6.1.2. Transposing complex temporality to the empirical terrain

Few complexity thinkers had expressly warned us about challenges occasioned by leaving behind conventional chronological order and alternating between a diachronic and a synchronic gaze. In practical terms, we sought to deal with this difficulty by following Falconer's (2007) recommendation to visualise time as a flow made up of recursive (sub-) cycles of change, continuously blending into and replacing each other while fluidly tying together events, elements, and processes occurring in different cycles. From this perspective, a synchronic gaze implied attention

to the interplay between phenomena framed as occurring within the same (sub-) cycle of change. At the same time, reflecting the recursiveness that complex temporality arguably implies, it allowed for diachronic analysis taking into account how dynamics - even when understood to play a role within a certain cycle of change - in hindsight, also seemed to feed into later ones.

Addressing the first three research questions also offered us the opportunity of experimenting with how complex temporality might play out in way we conducted our inquiry. For instance, during the interpretive analysis under Step 4 relative to RQ.I, our argumentation was simultaneously directed forward and backward in time. As we tacitly prepared ourselves for the overall assessment relative to a possible bifurcation event, and as we sought in turn to construe the intermediate and the ultimate vision, we hinged our discussion on noteworthy new dimensions that were introduced, as compared to the previous vision, and that suggested widening of the array of options contemplated, as well as moves towards relational and contextualising ways of thinking. At the same time, understandings gained relative to the earlier vision transpired in our argumentation, thereby denoting 'rear-mirror' orientation on our part.

Lastly, it occurred to us that the very write-up of our empirical inquiry was marked by complex temporality. Since the write-up and execution of our inquiry were, by and large, simultaneous, the former could be nothing but a reflection of the latter. However, we soon came to realise that fitting an intrinsically iterative and recursive investigative process (and hence also the related write-up) into the temporarily linear, "from point a to c through b" format, as existing conventions for writing up thesis reports tend to demand, was far from obvious. What some might consider repetitions resulted in effect from our recursive way of proceeding, as

partial conclusions reaped from one stage of the research process were injected as inputs into the next stage. This also invited us to shift between different tenses when deemed appropriate. Only after completing our construing of all three visions did we switch to a retrospective gaze and hence to consistent use of the past tense.

6.1.3. What the complexity perspective made less visible

As advocated by Morin, the complexity perspective tends to feel uncomfortable with notions such as irreducible incommensurability or incompatibilities and seems instead to have an in-built bias favouring (temporary) symbiotic associations[129]. We furthermore discovered that an important implication of complicity's axiom of the researcher's entanglement with her study objects is this: Once we opted for broaching the OPI through the prism offered by complexity, it became inconceivable to separate the complexity-informed way of thinking about the world from how we framed the OPI. It thus becomes near-unthinkable to read this initiative as anything else than a complex whole - or holon - sustained by micro-level interactions among the organisations involved in the initiative or gravitating at its boundaries as well as by interactions with the wider contexts in which it was nested. As it followed suit with other relational perspectives in blurring the distinction between epistemological issues and issues pertaining to the studied case (R. Bouwen, 1998, p. 303), we came to experience complexity as an all-encompassing frame of thinking that

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[129] That said, Jantsch (1981) reminds us that, if one draws a distinction between individuals and species, symbioses also involve competitive and antagonistic relations between two or several parties. In other words far from being ignored, antagonisms are assumed to play in a positive or productive role.

compelled us, so to speak, to approach all aspects of 'reality' as forming a vast and rich, multi-level web of interrelations.

Even more strikingly, conducting our inquiry from a complexity perspective brought us the following thought-provoking insight: once we subscribed to complexity's ontological and epistemological principles, we found it exceedingly difficult to return to the universe of linearity, conventional causality, with its reasoning in terms of independent and dependent variables, and of forward-oriented, unidirectional temporality. Subscribing to complexity thinking during the time it took us to complete our proto-exploration evidently left a lasting - possibly irreversible - imprint on our own way of thinking.

6.2. Strategic and methodological constraints

6.2.1. Challenges ensuing from strategic decisions

6.2.1.1. Keeping the research process open-ended

As we swapped the relative comfort of linear research guided by a pre-conceived hypothesis and driven by the ambition to reach firm conclusions either validating or rejecting this hypothesis, our research ended up by being marked by repetitions, resumptions and backtrackings. What is more, we were often taken aback by the direction in which intuitive flashes took us, at times leaving us with the impression of not being at the helm. As we furthermore sought to meet the requirement, imposed by the logic of emergence, of maintaining our research process open-ended, we also soon came to discover that such open-endedness was fraught with at least one treacherous peril, namely setting out on a runaway

course towards ever wider, open-ended questions (Harries-Jones, 1995, p. 232).

To circumvent this peril, heeding Osberg's invitation (2010a) for researchers to carve out and explore a slice of 'reality', we opted for devising a research strategy helping delimit the scope of our inquiry. It might of course again be objected that the very notion of strategy, implying pre-set goals, is at odds with the idea of open-ended research. Referring to a discussion held elsewhere (Bastrup-Birk & Wildemeersch, 2011) with regard to goal-setting in experimental - and hence supposedly open-ended-situations, we shall nonetheless argue, that, much as experimenters often grope in the dark and through trial and error, at times going back on their steps before heading in new directions, few set out with no sense of purpose whatsoever. Referring to November, Camacho-Hübner and Latour (2010) and to K. N. Lee (1993) we proposed there a middle course between, on the one hand, steering towards pre-set objectives and, on the other, totally clueless search. By involving navigation from one (provisionally set) signpost to the next, this middle-course comes close to what we qualified in Chapter 2 as pre-conceived, focused but provisional envisioning, in this case, of what we hoped our empirical inquiry would shed light upon. The heuristic framework, then, that we conceived provided the buoys preventing us from getting lost[130] as they directed our gaze to specific aspects or dimensions of the empirical terrain. Our decision to let ourselves be guided by a heuristic framework nonetheless carried with it at least one important drawback. Broaching the OPI with the

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[130] Even so, we came to experience constant tension between sticking firmly to the research agenda we set for ourselves, yet remaining open to suggestions to include new aspects. We remained wary that following new clues and adding new aspects to our inquiry might either send us off on a tangent or down too many interesting side-roads, eventually leading us astray.

help of this framework inevitably left less room for constructing meaning through negotiation with the researched (Lather & Lather, 1991, p. 110).

6.2.1.2. Inter-level interactions: The challenges of 'level-jumping'

Davis and Sumara (2006) invite the complexity-informed researcher to constantly shift attention between the level of collectives, these collectives' underlying level, and the wider 'external' contexts in which these collectives are nested. Yet we soon came to realise that, in addition to a spatial dimension, or passage from one level to another, the strategy of level-jumping also implied a temporal dimension requiring us to, ideally, conduct the macro- and micro-level analyses simultaneously or in parallel. This manner of proceeding, however, quickly proved highly challenging[131]. We found ourselves constantly wavering with regard to which of the two levels would be most advisable to look at first. Recalling, however, that, under complex causality, effects generated (at least in part) at the lower level were assumed to become visible at the higher level *only*, we settled for starting with the macro-level analysis. However, as we worked towards a tentative reply to RQ.IV, the order was reversed as we began by looking first at the micro-level. Combined with our decision to focus on feed-forward effects, the logic of emergence pointing upwards - but also, in some puzzling way, forward in temporal terms - commended starting with the conclusions reaped from our micro-level analysis. At the same time, as we looked at possible effects of micro-level fluxes and disturbances that became visible at the macro-level, we constantly kept in mind that in no way, could these fluxes be framed as conventional causes

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[131] The American architect Venturi (1966, p. 329) confirms this difficulty when he writes: "Simultaneous perception of a multiplicity of levels involves struggles and hesitations for the observer…".

of what we noticed at the macro-level, nor would complex causality ever allow us to assess their respective weight. For instance, when gauging the possible effect of interruptive and differentiating messages, we found it impossible to decide which of the two had the greater impact at the macro-level.

Having drawn a reasonably clear distinction between the two levels, we ensured that we did not to go so far as isolating them from one another. For instance, as we embarked upon our macro-level analysis, we drew on our background knowledge pertaining notably to the CS. This background knowledge helped us formulate working hypotheses that related some of the shifts recorded in the macro-level visions to what we sensed happened during micro-level discussions. As we discussed shifts in the two successive macro-level visions[132], this knowledge also led us to pay special attention to issues and aspects that we expected would be of prime interest to the CS. Conversely, we allowed understandings reached through our macro-level analysis to inform our reading of what occurred at the micro-level.

While this did not spare us entirely from experiencing doubt every now and then, in practical terms, our distinction between, on the one hand, sources that the S&S Coalition produced for the purpose of presenting the overall vision for the OPISA to larger constituencies and, on the other, those produced in the context of TBMPA meetings convened by the S&S Coalition or of other relevant fora, proved of great value for reducing confusion about what was happening at which level.

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[132] Had the necessary material been available, it would, of course, have been desirable to probe how the CS themselves perceived amendments or additions brought over time to the OP proposal.

6.2.2. Methodological challenges

6.2.2.1. Finding the right balance between an adaptive and a rigorous
methodology

When deciding what methodology to adopt, the complexity researcher is not always placed in an enviable situation. As she strives to leave behind reductionist methods chopping up or breaking down phenomena into ever smaller, sharply defined categories and hence often missing critical linkages with larger contexts, she must nonetheless find a way of securing a fair degree of structure and legibility. Heeding Davis' advice [133] to acknowledge the complexity of knowledge-generating processes while holding on to a few guidelines and principles, we opted for conducting proto-exploration of a deliberately limited 'slice' of the OPI while at the same time striving to show how this slice related to wider contexts.

Uncertainty also prevailed with respect to the most appropriate way of proceeding. With few precedents or models on which to lean and with no ready-made 'how to' manual at our disposal, we sought to figure out how best to overcome particular hurdles as they presented themselves, be it with regard to what particular steps to take first, where to draw boundaries, how to divide up a time span, etc. In so doing, we often proceeded in accordance with what intuitively appeared to make most sense. Only subsequently did we attempt to rationalise in logical terms what we had done. For instance, when embarking upon the gauging discussions for RQ.I and RQ.IV, we set out without a pre-made idea about

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[133] Conversation with B. Davis, UBC, May 16th 2008.

how we would proceed. As we allowed the next steps to emerge from those that preceded, we were often surprised by what emerged. Since we were only able to gain an overview of what we had actually done *ex-post*, one might say that our way of proceeding illustrated practical application of the logic of emergence.

In line with our overall effort to keep our inquiry manageable, we sought to stick to a fairly rigorous research protocol, in the form of the seven-step analytical procedure. In so doing, we deliberately chose to say a lot about a relatively limited evidential base.[134] Our opting for retrospective inquiry regarding an initiative that unfolded more than a decade ago obviously led us to rely on documentary material while precluding collecting capta through participant observation. Furthermore, while we did have retrospective conversations with former OPI protagonists, notably from the GSA and P4PS, we deliberately chose not to conduct structured or semi-structured interviews centred on RQ.I. Whereas these conversations provided us with very useful background information and also doubtless proved valuable as secondary sources, we were wary that the interpretation they offered of the OPI's history would influence too heavily our own understandings of what emerged from the OPI. They might, we feared, prevent us from taking a fresh look at the visions we saw emerge in the course of the OPI's heyday[135]. In relation to RQ. II/III, we deliberately abstained from conducting interviews on ethical grounds[136].

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[134] This decision proved particularly judicious in relation to RQ.II and RQ.III. Where, for the RQ.I, we deliberately selected a small number of key files among a vast amount of files, for the two other research questions, we by and large had to make do with what was available to us.

[135] In this context some might ask why we opted for a retrospective case study rather than for action research. They might point out that the latter would have enabled us to witness first-hand emergence of new concepts and visions rather than, as we did, seek to construe them *ex-post* from at times sketchy sources as well as from retrospective conversations inevitably bearing the distorting marks of

The very nature of the documentary material with which we worked - namely, primarily meeting reports and notes - prevented us from contemplating anything other than thematic content analysis. Clearly, however, as any other single analytical method, thematic framework analysis presented shortcomings. While, to its credit, it proved tremendously useful in helping us structure and systematise our inquiry, we found the sharp distinction it imposed between different sub-themes problematic not least in light of the complexity perspective's inclination to foreground linkages between issues, We thus often found boundaries separating the different sub-themes both uncertain and arbitrary. We encountered quite a few instances where it was far from obvious to which theme certain issues could best be understood to belong. This was particularly conspicuous when it came to allocating text segments to either sub-theme 2(a) - the OP process and MPA concept - versus sub-theme 2(b) – governance regime and practices. In some cases such lack of clarity led us to allocate the same text segments to both sub-themes.[137] Should we, however, decide to undertake a fully-fledged study of the OPI - or other similar initiatives - in the future, while remaining faithful to complex

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hindsight, post-rationalisations and more recent understandings. To this we would reply that only retrospective study enables retracing the trajectory that research objects follow over time while also minimising the researcher's impact on the directions it took.

[136] We thus felt that, however respectful and sensitive, the very act of interviewing constituted a form of intrusion into the universe of CS interviewees. This seemed all the more the case when the interviews, as was the case here, were primarily designed to serve a purpose determined by the researcher rather than by the researched.

[137] Another case in point was the segment "restoring … & [sic] preserving the Salish Sea" This segment could thus be argued to pertain to 2(a) through the spatial connectivity it suggests, 2(b) through its foregrounding of restoration next to preservation and 2(c) as it evokes borderless space.

epistemology, we should obviously like to explore how other analytical methods[138] that might help bring about further insights.

6.2.2.2. Linking the concepts of bifurcation and radical novelty to the empirical terrain

When it came to transposing the core concepts in our heuristic framework to the empirical terrain, the concept of bifurcation proved particularly taxing and hence required a fair measure of inventiveness. Not until confronting our documentary material did we figure out how we might tackle the challenge of translating into something empirically gaugeable what, so far, had mostly been an abstract concept borrowed from the realm of thermodynamics. Since, under the logic of emergence, the notions of bifurcation and radical novelty are inextricably linked, perhaps the most tricky part of our effort, when dealing with RQ.I, pertained to determining when shifts in terms of differentiation or complexification might be considered sufficiently dramatic to denote radical novelty. Doubtless, our empirical work helped us clarify our thinking in that respect. As we sought to gauge to what extent the way of thinking about governing marine commons denoted by the successive macro-level visions arguably underwent bifurcation, we realised that, rather than aspiring to give a straightforward yes/no reply to this question, a more cautious and more pragmatic approach seemed commendable. Rather than understanding bifurcation in an empirical social context to imply a clear-cut and abrupt event occurring at a precise point in time and space, it thus

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[138] We are thinking here in particular of methodological tools such as symbolic interaction analysis as well as mapping of interactive flows over time which can be expected to sit particularly well with the enaction strand of complexity.

seemed more tenable to frame it in terms of moves towards and across a fuzzy threshold spanning a range of gradients.

We were nonetheless still left with the challenge of finding a credible way of assessing how close the shifts we foregrounded in the two visions came to denoting that a bifurcation threshold had been reached or crossed, hence allowing us to argue with some confidence that they came to include radically novel perspectives or options for action. An important decision was to introduce an optimal scenario under which what we conceived to be radically novel principles and modalities for governing the marine commons included in the Salish Sea would be brought to light. Furthermore, since we found it problematic in empirical terms to uphold a clear distinction between, on the one hand, crossing of a bifurcation threshold and, on the other, emergence of radical novelty, we decided to conflate the two at the empirical level and hence to consider shifts matching the optimal scenario as fingerprinting both. Since such conflation thus also helped us envision radical novel ways of thinking as manifesting in the form of gradients, our next task was to assess how close the shifts we noted in the two visions came to meeting the requirements we associated with the optimal scenario we had conceived. Here, however, we again faced a hurdle. In addition to recognising that this assessment still very much relied on a judgment disputable at any time, we came to realise that it would confront us with the following, particularly vexed, question: should shifts that could reasonably be deemed dramatic enough to denote a bifurcation event be understood as signalling that such an event was about to happen, that it was in the process of happening, or was what we observed 'after-the-event' spin-offs? Mercifully, we were spared from settling on one of these options since the understandings we reaped via our analysis did not warrant our claiming that a bifurcation threshold had been

reached or crossed for any of our five sub-themes in the course of the OPI's heyday.

6.3. Constraints regarding conclusions

6.3.1. Limitations to the research strategy and methodology

Decisions we took in terms of both research strategy and methodology inevitably carried with them important limitations and biases. Although obviously not ignoring them altogether, these decisions thus brought us to pay less attention to a number of relationships or influences originating both in the OPI's 'internal' and 'external' contexts, which, at the end of the day, might have proved just as relevant as those on which we chose to focus.

As far as dynamics 'internal' to or playing out at the fringe of TBMPA meetings, or in other relevant fora we examined, were concerned, we abstained from exploring what changes in relational practices between CS and non-aboriginal protagonists resulted from these two sets of protagonists interacting on a regular basis, notably during Sub-Cycle 1. We also abstained from examining to what extent these interactions might have impacted CS involvement in and perception of the OPI. We limited ourselves to discussing how scant CS participation in TBMPA meetings in Sub-Cycle 2 might be interpreted. What would be interesting in a fully-fledged study of the OPI, should available sources so allow, would be to take a closer look at how non-native OPI protagonists perceived inputs from the CS and how open or receptive they seemed to be towards what the latter objected to or recommended. Furthermore, we would take interest in how the fluctuating amount of resources, in terms of time and energy

invested in the OPI, or the general 'climate', prevailing within its fuzzy boundaries, either amplified or neutralised affording effects of interruptive or differentiating messages. We concede that, when choosing to focus on conscious envisioning playing out either at the level of the S&S Coalition *qua* embodiment of the OPI, and, at the local level, among CS representatives and spokespeople, we gave the enaction strand a somewhat short shrift. We abstained from examining what the enaction lens would have found particularly interesting, namely what self-organising dynamics were generated through interactions between the different S&S Coalition partners, as well as between the latter and other organisations that engaged in the OPI, and what impact these dynamics might have exerted on the successive visions. Rather than inviting us to map out flows and exchanges that took place among the OPI's different protagonists and seeking to assess how these dynamics affected the different parties in presence, our theoretically-informed emphasis led us to focus on one set of protagonists, namely CS attendees or spokespeople that engaged in these interactions.

Whereas complex causality clearly proscribed any attempt on our part to assess the relative influence of respectively 'external' contextual circumstances and self-organising dynamics 'internal' to the OPI in either bringing forth or hampering emergence of radically novel ways of thinking about governance of marine commons included in the Salish Sea, the very formulation of RQ. IV prompted us to foreground affording rather than impeding conditions. This in turn led us to abstain from looking systematically at the extent to which weak or no apparent shifts in terms of differentiation or complexification were preceded by or coincided with lack of or scant interruptive or differentiating CS messages. Combined with our decision to pay less attention to possible "top-down" or feedback effects that the successive visions might have exerted on CS

representatives, this also implied that we did not seek to assess the degree to which these visions, as they emerged, might have dissuaded CS representatives from upholding certain objections or from championing certain options. For example, we did not explore whether the apparent confirmation over time of (Western) science as the dominating knowledge base informing the OP proposal seemingly discouraged CS protagonists from recommending, next to science-based methodologies, some applied under traditional governance regimes. Lastly, as far as CS protagonists were concerned, we abstained from unpacking the 'black box' of individual idiosyncrasies, framing these protagonists solely as spokespeople for particular CS institutions or FNs and tribes.

While we strove to remain attentive to 'external' contextual influences (this, we recall, was a major rationale for bringing in, under Step 6, sources pertaining to fora other than TBMPA meetings), we abstained from examining more closely to what extent transboundary initiatives contemporary to and of direct relevance for the OPI - notably the bi-annual Puget Sound/Georgia Basin Research Conferences and the Transborder Marine Stewardship Initiative involving the Islands Trust and San Juan County - either sought to support it or, on the contrary, diverted resources, in terms of time, attention and funding, away from it. Nor did we engage in in-depth discussion of the possible impact on transboundary relationships of the 9/11 attacks.

6.3.2. Limits to understandings and conclusions

We are careful to remind the reader that the understandings and tentative conclusions that emerged from our proto-exploration could be nothing but partial and contingent. For one, as emphasised by the hermeneutic tradition, they resulted from one among many other possible

interpretations of what the studied protagonists actually meant when they expressed themselves as they did. Next, the claims we posited were shaped by the research questions we formulated and, beyond this, by the very way in which we conducted our inquiry. Furthermore, under the assumption that retrospective studies seeking to construe past events can only do so in a way that makes sense in the present (Osberg & Biesta, 2007, pp. 41-42), the tentative conclusions reached could only be provisional since new concepts and insights emerging in the future will rapidly make them appear either inadequate or outdated. In other words, rather than definitive or authoritative replies to the research questions we asked, the conclusions we brought at best offered preliminary and provisional clues begging to be challenged by further research. What is more, following both complexity thinking and the hermeneutic tradition, in considering questioning essential for making new understandings possible, some of our understandings, notably relative to RQ. II and RQ. III were formulated in an interrogative mode.

In what follows we propose to highlight how adhering to complexity's epistemological principles made it problematic at times for us to meet a number of quality standards, often foregrounded in qualitative research manuals (Flick, 2009) and, more specifically, for the attention of educational researchers, and how we sought to circumvent such problems.

(a) Replicability and reliability: When discussing the issue of replicability, we consider it important to distinguish between replicability of research protocols, on the one hand, and of research results on the other. As explicated earlier, we sought to follow as much as possible complexity's precept that research methods ought to be chosen and even at times invented so as to match the particular research problem at hand, as

well as the unique characteristics of the selected case. Ruling out recourse to a pre-set and already well-proven methodology, we designed a seven-step analytical procedure that we deemed compatible with principles characteristic for complexity thinking. Although we obviously expected the procedure itself to be replicable, explicit and systematic as it was, when pondering upon the inevitable limitations to understandings it brought forth, we realised that they primarily relied on inferences and judgements on our part that, therefore, made them non-replicable. We experienced this firsthand when we found ourselves in the process of matching particular text segments with particular sub-themes. During this process it became abundantly clear that the matching exercise could not be dissociated from the connotations we ascribed to the different sub-themes. For this reason we consider the traditional criterion of reliability of the inquiry process and results *across researchers* (Miles & Huberman, 1994, p. 278), bringing them to the same results, as non-applicable in relation to the understandings and conclusions we arrived at. Even with the same set of sub-themes understood to encompass a certain range of issues, another researcher might have selected different text segments, eventually leading her to noticeably different observations or inferences and, therefore, conclusions.

(b) Validation: As they advance the view that once words are transformed into written text, the gap between the 'author' and the 'reader' widens as odds for multiple interpretations increase (Hodder & Hutson, 2003), qualitative researchers obviously leave by the wayside any modern notion of objective truth (Gergen & Gergen, 2000). No longer are researchers allowed to seek validation with authors assumed to convey an 'original' or 'true' meaning to a text. Under the hermeneutic tradition there is thus no

point in seeking validation in any external, objective sense. All we can do is present and argue for our view of the world or 'reality' as we see it as researchers. Strictly speaking, therefore, not even triangulation through sources external to the studied setting can be claimed to provide an unquestionable basis for validation. For this reason, while we approached former OPI protagonists for the purpose of double-checking certain facts prior to completing our report, we abstained from asking them to validate our interpretations. We also recall that, rather than gauging shifts in the macro-level visions in terms of a set of objective, pre-set standards, we relied on standards largely derived from our theoretical discussion in Chapter 2 as well as on the benchmark offered by our optimal scenario. Therefore, it did not seem to make much sense to confront them with assessments that former OPI-protagonists offered during retrospective conversations. Our argument here was that, more likely than not, these protagonists' assessment of the OP-experiment and its outcomes would be grounded in criteria with little in common with those we applied, hence making the two sets of evaluation incommensurable[139]. Overall, the further we proceeded, the more we came to realise that our whole project was a construction - or, rather, a work site, since it was provisional as it would possibly be further elaborated upon in the future - that might have taken on an entirely different shape and entirely different content, had we opted for other strategies and methods for generating knowledge. By the end of the day, the solidity of its foundations depended on our capacity to remain self-critical, cautious and, above all, coherent.

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[139] Nor can the consideration be entirely dismissed that a few practitioners might ascribe a higher degree of validity to their version or interpretation of events under the 'We know best since we were there' argument.

(c) Internal coherence and consistency: We part ways here with the more classical notion of internal coherence, adopted notably by the AERA (American Educational Research Association) in relation to humanities-oriented educational research (2009). The latter notion involves "the use of compelling confirming and disconfirming evidence to enable readers to understand and/or re-experience educational events, concepts, [and] value systems." For us, the very notion of "compelling, confirming, and disconfirming evidence" still bears traces of the positivist era. Having opted for the interpretive tradition, we are far more inclined to agree with those emphasising the "contingent, contextual, personally interpretive nature of any qualitative study" (Schwandt, 1990). Instead, we propose to relate the standard of internal coherence to our effort to use the partial understandings reaped at the different stages of our inquiry as building blocks or stepping-stones for drawing a set of overall tentative conclusions. As for the standard of consistency, throughout the seven-step analytical procedure, we sought to remain as consistent as feasible with complexity's and the hermeneutic tradition's largely congruent epistemological principles, favoured modes of reasoning, and recommendations regarding how to relate to research 'objects.'

(d) Plausibility: We recall that abductive reasoning favours plausibility on the grounds that it allows one to line up a series of possibilities deemed equally tenable. Otherwise put, this standard does not require the researcher to provide a reply to a specific research question to be considered to be the only correct one. Hirsch Jr (1967) proposes two standards against which to gauge plausibility: first, closeness, i.e. the closer the interpreter remains to the studied context, the more weight her interpretation carries. Our borrowed status as complicit researchers

arguably placed us in a good position to meet this standard, provided of course, that we successfully resisted the temptation of conflating our world and that of the researched. Second, for Hirsch, the plausibility of inferences increases with the relative frequency of instances as well as with the number of statements from the members of the class pointing in the same direction. Yin (1994) and Huberman and Miles (1994) echo this. The former states that inferences based on several different sources of information will appear more plausible, while the latter recommends the researcher to double-check findings in a self-conscious way. Obviously, here our limited evidential base places us on a somewhat shakier ground. As seen earlier, however, we strove to make up for this by resorting to secondary sources for the purpose of probing the plausibility - and hence the credibility[140] - of inferences drawn from our primary sources. Thus, in order to arrive at plausible inferences, under Step 6, we sought out inferences which would either challenge, nuance, or complement inferences we made under Step 4. More specifically, in order to make up for the lack of a critical mass of CS inputs in TBMPA meetings in Sub-Cycle 2, we turned to reports of events that we expected would provide further clues on CS perspectives regarding governance of marine commons. We also looked for more or less contemporary policy statements regarding marine protection proffered by institutions representing CS FNs and tribes.

 (e) **Rigour:** Associated as it is with deductive reasoning - drawing conclusions from a set of foundational and absolute axioms - the quality standard of rigour seemed too narrow for us to adhere to. Nonetheless, we

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[140] There seems to us to be only a very thin and porous line separating these two standards.

wanted readers to understand how we arrived at our understandings. This is where we found the standards of transparency and systematicity to come in handy. Taken together, these two standards presented the advantage of not applying exclusively to modes of reasoning. They could also be applied to the way we collected and sorted out our documentary material as well as to the analytical tool and procedure used for harvesting and processing relevant text segments and turning them into capta. Our seven-step analytical procedure proved particularly valuable with respect to systematicity. As far as the documentary material was concerned, we made sure, as far as primary sources were concerned, to enclose them as annexes to **Book II**, mostly *in extenso* or, in the case of the "Wave of the future" publication, in the form of a substantial extract. This way, readers would be able to access to the documentary body from which we extracted text segments, enabling them to form their own judgments as to what to make out of these segments. In annexes appended to **Book II,** we also made sure to display the retrieved text segments, organised according to sub-theme and with indication (in red) of the capta that would provide the basis for our inferences and hence substantiate our understandings. As for the standard of transparency, we understood it to require - notably under Step 5 - our laying bare assumptions and pre-understandings that informed our interpretation of the harvested text segments, and, of how the studied protagonists' interpreted the situation and, more generally, the world. In short, we understood transparency to imply critical evaluation of inferences we made in relation to our 'evidence' (Cresswell, 2007).

 (f) **Researcher reflexivity:** When presenting standards for reporting on humanities-oriented educational research, the AERA (2009) ascribes great importance to researchers remaining aware of value commitments, research

ethics, and the politics of knowledge or complex relationships among power, politics, research methodology, and knowledge production. Clearly, the pre-conceptions and normative preferences with which we started out contributed to shaping how we understood the complexity perspective. As they prompted us to elicit certain features and stances that we deemed inherent to this perspective, while seemingly matching our own preferences, this selectivity inevitably implied a certain risk of our instrumentalising and distorting arguments offered by the complexity thinkers on which we drew. For instance we discovered along the way that, following a normative preference on our part in this respect, we were only too happy to buy into a hopeful idea set out notably in strands of complexity thinking derived from evolutionary biology (Davis & Sumara, 2006). The idea in question ascribes potential both to individual and collective consciousness for shifting to higher and more complex levels of order over time.

In addition to these considerations, we view the requirement of self-reflexivity as directly derived from the standard of transparency evoked earlier. We sought to abide by this requirement in several ways. For one, since we found self-reflexivity to form an important part of the interpretive method as practice (Finlay, 2009), we made sure to build a self-reflexive step into our analytical procedure. Next, as we strove to practice, throughout the research process, what Munari (1993/2000) calls an 'epic' way of knowing' - viewing confrontation with unforeseen conundra as intellectually stimulating - several times along the way, we felt well beyond our comfort zone. The discomfort and doubts we felt on such occasions prompted us to record and reflect - as we did in **Annex 28 (Book II) -** on methodological hurdles and dilemmas encountered, the perplexities

we experienced as well the decisions we made in an attempt to circumvent them.

Before closing this sub-section, we wish to pay some attention to the sensitive question of the language we deemed appropriate for presenting the substance of our understandings. Since these questions related to protagonists whose ontology/cosmology and ethics we expected to contrast starkly with those informing non-aboriginal OPI protagonists, this issue took on extra weight and required extra care in relation to RQ.II and RQ.III. For example, as noted under Step 5 of our analytical procedure for RQ.II and RQ.III (Section 2.5. - **Book II**), the terms 'complicity' and 'management' proved both problematic for practitioners as well as scholars with a CS background. Furthermore, already at an early stage, we became acutely aware of the near-insuperable discrepancy between, on the one hand, the two genres we captured in our material, namely, (1) the operative and action-oriented genre adopted in summaries drafted by non-native note-takers working for S&S Coalition member or partner organisations and (2) the distinctive genre adopted by CS Elders (as opposed to non-aboriginal natural resources staff working for tribes and FN bands) as it came to expression in the few sources where their voices pierced through and reached us in an unmediated form[141] - and, on the other hand, our own language striving to meet the canons of academic English. The best we could do here was to resort frequently to verbatim quotations to substantiate our claims while discussing these claims in the language the latter expected us to adopt. In our view, the issue of language is all the more important in that it also touches upon the ethical issue of researcher

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[141] This was the case, for instance, with the Draft Resolution that was submitted to the Gathering held on the Lummi reservation in June 2000.

responsibility. For our research to serve a wider purpose than sheer knowledge generation and for it, however modestly, to help call forth less unsustainable futures, it appears critical for the insights we reaped to remain accessible and intelligible for those directly concerned. Consequently, as we shall see shortly, especially when spelling out how our inquiry might have contributed to the field of practice, we strove to adopt a language as devoid as possible of specialised terminology. It was our belief that only through such an effort might we prevent our research from remaining confined to the academic community.

6.4. Other potentially relevant frameworks

Using our heuristic framework and the research questions derived therefrom as searchlights, our aspiration was, with their help, to get a better idea about the dynamics and relationships playing out between the two levels we identified for analytical purposes. At the same time we bore in mind that, since, for complexity thinkers, approaching any study 'object' as 'really' complex precludes telling a single and exclusive story about it (Cilliers, 1998, p. viii), this framework offered but one way, among many others, to look at the OPI. All we did was to propose, among many other possible prisms, one through which we read and highlighted selective aspects of the OPI and its protagonists.

Against this backdrop it appears well worth asking what other approaches or frameworks we might have chosen for investigating the OPI's potential for calling forth (radically) novel concepts and options for action. In our doctoral proposal, next to the complexity perspective, we contemplated two other approaches for studying the empirical terrain,

namely the Community of Practice framework and social learning theory. Several considerations brought us to relinquish both frameworks.

Starting with the the Community of Practice framework (Wenger, 1998), its primary preoccupation with order and continuity, social validation and identity made it stand out as at best reformist in its outlook and incremental in its approach. We perceived it as largely non-critical as it presents change and innovation as something to be negotiated and accommodated rather than something with potential for upending a current state of affairs or practices deemed unacceptable or unsustainable. As for social learning theory: while acknowledging its helpful contribution notably in helping reinstate collectives, alongside individuals, as relevant units of analysis, we nonetheless decided to leave this body of theory behind on three counts: first, we came to distance ourselves from the very notion of learning which, in agreement with Biesta (2005), we deemed largely phagocytised by market-led needs. Second, as we shall further elaborate upon in Chapter 7, we came to question the somewhat taken-for-granted assumption, found among many social learning theorists (Wals, 2007), that external facilitation or mediation is required for significant shifts to occur in the way collectives (and individuals) are thinking and acting. Third, elsewhere (Bastrup-Birk & Wildemeersch, 2011) we argued that social learning theorising tended to grant a predominant role to critical reflection regarding current and past practices, somewhat at the expense of imagining and envisioning possible pathways for the future.

A third theoretical approach we might have contemplated is actor-network theory (ANT) (Latour, 2005). It too enables a leap away from thinking in terms of discrete, well-bounded entities. It too would have encouraged thinking about the OPI as constituted by a network of relationships temporarily clotted together and dependent on repeated

enactments of such relationships. What we felt uncomfortable with, though, was that, by claiming that 'reality' only exists if performed, this theory does not appear to encourage study of the fictive or the virtual. This ontological claim stands in stark contrast to the enaction strand of complexity, which, far from relegating what is imagined or fantasised to the outskirts of what is studied, on the contrary advocates granting it prime attention as a resource for inventing futures (Davis & Sumara, 1997). Accordingly, for us, ANT seemed ill-suited for studying how future possibilities were being thought about. Moreover, under ANT, networks appear and disappear - observable and interpretable thanks to different method assemblages - but apparently with no sense of direction other than horizontal or eccentrical expansion (Lash, 1999). In contrast to complexity's adhering to a directionality that notably implies leaps upwards, this made actor-network theory therefore less appealing for anyone, ready to contemplate the possibility for individual and collective visions to undergo qualitative leaps towards ever higher and more complex ways of framing problems. Lastly, and perhaps even more worrisomely, we perceived an in-built interest in ANT for how processes and understandings eventually undergo stabilisation and ordering (Fenwick, op. cit, p. 6).

The last potentially promising framework we shall evoke here is that pertaining to relational construction of meaning (R. Bouwen, 1998). Coming from a complexity perspective, we clearly agreed with this framework's foregrounding of relationality and polyvocality as a catalyst for new knowledge as well as for new practices, notably in response to socio-ecological challenges. We also saw clear affinity between, on the one hand, its view of meaning as ever-evolving and subjected to an open process (1998, p. 306) and the emergence strand's insistence that any process of emergence is open-ended and on-going and cannot be brought to

definitive closure. Lastly we agreed with its insistence that the statements expressed cannot be cut off from the context in which they are taking place. This emphasis on contextualised knowledge generation through interaction between diverse protagonists (1998, p. 302) thus seemed very close to the enaction strand's concept of co-emergence construing outputs of a given set of interactions as the emergent product of interactions between human actors and the setting in which these interactions took place.

Yet four considerations led us to leave aside also this theoretical and conceptual framework:

First, it seemed to us to foreground processes through which meaning is assigned to relevant events and conditions in an *existing* situation from diverging perspectives. It will be recalled that, in the case of the OPI, controversy was less about how the present state of the Salish Sea was to be interpreted than about what *futur*e options would be politically, ecologically and ethically acceptable. For this very reason the notion of 'vision' seemed to us more appropriate than 'meaning'.

Second, its notion of context seemed to us to be primarily understood in organisational terms. As a corollary to our research interest in socio-ecological problems, we felt the need to extend context also to encompass interaction between humans and non-human species and processes.

Third, rather than focusing on how language depicting a problematic situation was altered in the course of communicational processes, going beyond discourse analysis, our ultimate preoccupation was to infer from the language used possible ontological and

epistemological shifts that might have led the S&S Coalition to think differently about how best to govern marine commons in the future.

Fourth, while taking into account the multi-scalar character of many issues and hence the need for actors to frame responses to issues accordingly, it seemed to us to focus primarily on (local) interactions between different parties or organisations and less on the (temporarily) bounded collective created through these interactions.

While these considerations led us to settle for approaching our case through the complexity lens, in association with our heuristic framework, we remained lucid enough to expect that, as any perspective, complexity too was likely to be fraught with shortcomings. While the challenges and the constraints exposed in this chapter might possibly lead some to view as problematic broaching (potentially) educational situations through this lens, in defence of our decision, we feel tempted to quote Kuhn (2007, p. 160) who, we think, tellingly summarises the difficulty, but also benefit, that it implies:

> << The novelty of complexity is both useful and a difficulty. That complexity counters many commonplace assumptions means there can be a re-noticing of our world and ourselves: a re-thinking and a questioning of taken-for-granted, no-longer-tested assumptions. In this sense contemplating the ideas of complexity may amount to a call to think for oneself, to take up the challenge of wakeful, fully human being. >>

To further reflect this nuanced view, we shall dedicate a section in the next chapter to highlighting windfalls we deemed inherent to approaching our case from a complexity perspective. At the same time we recall that, following the logic of emergence, educational researchers opting for the complexity perspective are in no way condemned to hold on to it as it stands today. Under a meta-narrative of continually emerging new

possibilities, this perspective is assumed to undergo continuous revisiting. What is more, under a strand informed by evolutionary biology, it can be thought about as a stepping-stone for other paradigmatic leaps yet to come.

CHAPTER 7: THE JOURNEY IS THE DESTINATION

"*The further you travel, the more clearly you realise that the journey is all that matters.*" (Baudrillard)

Introduction

This last chapter will be dedicated to addressing the fourth question that Davis and Sumara (2006) put to the complicit researcher: in what way might our research be considered educational? Endowing us with an *active* role, this question clearly has to do with the extent to which our research might reasonably be claimed to have helped expand the space of the possible in theoretical, methodological, and practical terms.

We propose to structure the chapter as follows: As Fendler (2012) recommends, we begin by providing an overview of the trajectory that our research process followed with indication of important landmarks. We then proceed to distil a number of windfalls that we found to be inherent to conducting empirical research under the logic of emergence. A third section highlights three kinds of contributions that our research arguably brought in its wake. The fourth and last section raises a set of fresh questions for future studies to address.

7.1. Overview of the research trajectory and its landmarks

Our commitment to keep our research process as open-ended as our guiding questions would allow led us to pay considerable attention to the process itself. Whilst the broad lines of our research were already outlined in our doctoral proposal, our theoretical and conceptual

framework evolved over the following years with continuous alternation between theorising and empirical inquiry. In that sense, we could say that, rather than sequentially, the elaboration of the heuristic framework, the formulation of the research questions deriving from it, and the empirical inquiry ran largely parallel to each other, at least part of the research period. With hindsight, we nonetheless realise that we dedicated about two thirds of this period to circumscribing our theoretical and conceptual foundation.

We initially contemplated broaching three cases from three different perspectives: the community of practice framework, social learning, and complexity theory. However, as already noted in the previous chapter, we rapidly discarded the first perspective on the grounds that we did not find it to challenge fundamentally ways of thinking that brought us to the dire and alarming socio-ecological conditions we are facing today. The following year was mostly dedicated to examining how far social learning theorising could take us in providing concepts shedding light on the three cases. In the same stride an article examining how the concept of reflexivity might be revisited when linked to experimentally-oriented social learning was submitted and accepted for publication in Studies of Continuing Education (Bastrup-Birk & Wildemeersch, 2011). After deciding to concentrate on the OPI as our single case, between spring 2007 and fall 2011, we spent five periods of about two months each as a visiting scholar at the Department of Educational Studies (EDST) of the University of British Columbia. The purpose of these visits was to familiarise ourselves even further with the background for our case and the context in which it unfolded. During these visits we had conversations with a number of former OPI-protagonists who kindly provided us with archival material

about the OPI. We also had fruitful conversations with members of EDST faculty.

From the beginning of 2008 onwards, our thinking took a resolute turn towards complexity thinking. However, it was not until our encounter with Osberg's thinking about complexity in relation to taking care of the future (2010b) and with Biesta's (2011) and Simons and Masschelein's (2010) pondering on how the notion of democratic education could be revisited in the light of Rancière's thinking that we intuited promising complementarity between these two strands of thinking. The emphasis which the former conception put on equal intelligence seemed to us to tie in well with a complexity-informed view framing education as a process of emergence, largely self-initiated and self-sustained through interactions between individuals and groups. Since these propositions did not sit well with a view, often found in theoretical literature about social learning, framing external facilitation or mediation as a must for breakthroughs to occur in the way that collectives think and act (Wals, 2007), we decided also to social learning theory by the wayside.

As we prepared for immersing ourselves into the documentary material handed over to us, it occurred to us that, since the complexity perspective was not yet part of mainstream thinking in educational research, prior to embarking on our empirical inquiry, it might be appropriate to spell out meta-theoretical tenets informing this perspective as well as its methodological implications. An extra year (2010/2011) was taken up by literature review, the elaboration of a research strategy and of a methodology in line with complexity.

Already in our doctoral proposal, we signaled our intention to go down an exploratory avenue when conducting the empirical part of our research. This intention gradually morphed in a decision to

adopt a clearly experimental attitude. This attitude seemed all the more commendable that experimental research is by definition open-ended and therefore sits particularly well with the logic of emergence. Consequently, throughout our research, as we strove to avoid any move that might turn our research into a self-sealing process, we let it take shape as freely as the constraints inherent to our heuristic framework and to adhered-to meta-theoretical principles would allow. At the same time, however, in order to keep our inquiry manageable, and again in line with our experimental approach, we opted for conducting a proto-exploration drawing on a deliberately limited sample of the documentary material handed over to us. Applying the seven-step analytical procedure to this material required a time span of seven months, from October 2012 to end of April 2013.

Towards the 'end' of the research process it occurred to us that the root metaphor guiding our entire research effort was that of an upward-oriented, ever expanding spiral (Alvesson & Sköldberg, 2000). We thus often returned on our steps to pick up partial understandings reaped from a previous discussion in order recursively to inject them as inputs into the following discussion. Furthermore, while continuously expanding along the way, our partial understandings eventually combined to form a more complex understanding of how what seemingly happened at one level of analysis appeared to affect the other. Speaking more generally, we might also say that our whole research effort was marked by looped temporality as it sought to inject insights reaped from a past endeavour into the present while revisiting the past in the light of more recent insights.

7.2. Windfalls brought by complexity informed inquiry

In Chapter 6 we presented the challenges and constraints we encountered as a consequence of our decision to adhere to epistemological principles, peculiar to complexity, and to conduct empirical research in line with these principles. Recalling that the complexity perspective also ascribes a positive role to constraints *qua* conditions enabling certain positive effects, we think this is the place to counter-balance somewhat some of the comments made in the previous chapter that might lead some readers to consider as highly problematic to apply complexity to (potentially) educational situations as highly problematic. In what follows we shall make the case that a complexity-informed attitude to research can be liberating in several respects:

a. Complexity's acceptance of the limits of knowledge as well as its reframing of mistakes and setbacks as offering opportunities for breakthroughs (Geyer, 2003) helped us think about uncertainty as a condition pregnant with opportunities in which there is still everything to play for. We also found complexity thinking prepared us well for the ambiguities and, at times, contradictory signals we encountered in the course of our inquiry.

b. Complexity thinking also freed us from linear logic. By admitting the possibility for cognition to be subjected to major qualitative leaps, it invited relinquishing incremental thinking. It also directed attention to surprises, unintended consequences and the taking off of spontaneously processes.

c. Even though some might view this as a sign of inadequacy, we found complexity's renunciation of authoritative conclusions liberating.

Spared from the obligation of providing such conclusions, we were granted breathing space for scouting out unactualised potentialities inherent to the OPI that we might otherwise have overlooked. This also granted us some spare capacity for considering fresh questions for further research.

d. In ontological and epistemological terms, complexity thinking helped us escape the tired modern/post-modern debate and seemed to us to adumbrate what Finlay (2009, p. 17) calls the 'post-post-modern' era.

On balance, therefore, complexity thinking appeared propitious for negotiating a turn towards what Lakatos calls a 'positive problem shift' (1970) in at least two respects. First, at the level of knowledge generation, its possibilistic logic invited looking beyond the tried-and-tested. Second, it seemed to us to invite intellectual curiosity and openness to different angles of approach by reminding us that what we observed, read, and inferred, and the picture we drew from this, only provided one possible, necessarily partial and provisional, picture of the studied situation; many others might be just as valid. From this follows also that the tribute we just paid to a complexity informed attitude to research should not be read as signaling that we consider it superior to other attitudes. Nor does it suggest that insights gained via the complexity lens ought to be considered more 'truthful.'

7.3. Contributions brought by our research

Introduction

This section addresses what might be called the 'so what' question so critical for any research effort. Our deliberately limited evidential base, complexity's deep scepticism towards definitive replies and the

hermeneutic tradition all conspired against our offering anything other than a cautious conclusion with regard to the question at the centre of our research effort. We shall nonetheless contend that this effort was far from futile, neither from the point of view of theorising (democratic) education nor from a conceptual and methodological, nor a practical, issue-oriented point of view.

7.3.1. Contribution to theorising (democratic) education

As we approached the OPI as a collective experiment seemingly promising for illustrating a process of democratic education, we were aware that such framing precluded spelling out in advance how we expected this experiment to affect the way its instigators thought about governance of marine commons. Admittedly, when setting out on our empirical inquiry, we did harbour some hope of somehow being able to make a reasonably good case for the OPI, in its heyday, fulfilling the potential we ascribed to it for calling forth *radically* novel principles and modalities for governing marine commons of the Salish Sea. The discussion in Chapter 5 suggested, however, that, while undeniably contributing to a new model for governing marine commons at least in portions of this sea, notably by promoting the innovative concept of a *transboundary* marine protected area, the vision that ultimately emerged from the OPI could not be claimed to upend altogether the logic underpinning prevailing ways of thinking about this matter of public concern. Nor were we able to claim with some confidence that the logic underpinning this vision aligned itself with the logic informing our optimal scenario. This in turn tempted us at first to conclude that the OPI had not lived up to the (positive) potentialities that we initially deemed inherent to it

and hence that it did not earn the status of a space in which a democratic education process could be claimed to have unfolded.

Further reflection, however, led us to nuance what might seem a categorical verdict. We decided not to let this critical attitude eclipse altogether the qualitatively significant strides in the direction of further differentiation and/or complexification that we observed in either vision, notably with respect to ethics and shared governance across the border. These shifts seemed all the more remarkable under the assumption that collectively held values and place-bound identity tend to be fraught with considerable inertia and are hence more difficult to unsettle

Lastly, since the ultimate vision emerged less than three years after the early vision was first circulated to a larger constituency, we wondered how justifiable it was to expect radical shifts to occur over such a short span of time. This consideration in turn led us to speculate that, had the favourable contextual dynamics, both 'internal' and 'external' that the OPI enjoyed in its heyday continued, hence allowing it to maintain its momentum, a more affirmative, albeit still neither assertive nor definitive, conclusion could have been given relative to our central question. We were ready to contend that, in case CS Elders had decided subsequently to engage more actively with the OPI so as to weigh more on the direction in which it would be heading, the prospects for this experiment to give rise to proposals breaking for good with fragmenting, techno-rational ways of approaching governance of marine commons would have been even brighter, hence allowing it to earn the status of a space that harboured a full-blown democratic education process.

Despite ending our proto-exploration on a speculative note, the circumstance that this exploration nonetheless revealed qualitatively significant shifts in the two successive visions warrants our advancing at

least six insights that will arguably contribute to theorising education in the context of collective experiments grappling with socio-ecological challenges.

7.3.1.1. Decoupling (democratic) education from external pedagogical intervention

An important implication of a conception of education combining Rancière's thinking about democracy and one informed notably by the complexity strand of emergence was that it directed attention to the potential for citizens engaging in the experiment of democracy, under favourable conditions to bootstrap themselves [142] into novel ways of thinking, seeing, and doing. Against the backdrop of Fenwick's suggestion (2009, p. 116) that, in uncertain, complex, and rapidly changing contexts, it might be preferable for educators 'to do less rather than more,' this conception seemed all the more thought-provoking that it left room for significant shifts to occur, both in how problems were framed and how they were responded to, without such shifts necessarily being sparked or fuelled by 'external' public pedagogy intervention or facilitation.

Nothing in the files we examined contradicted the impression we got from the outset: no educators or facilitators 'external' to the S&S Coalition were called upon to help the OP experiment along the way[143].

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[142] We found the notion of bootstrapping in relation to education to be particularly prominent in Jörg (2009).

[143] A caveat nonetheless seems required here: if the OPI itself could be claimed to have unfolded without external pedagogical intervention, the picture looked somewhat different if focus is set on how the S&S Coalition itself behaved in relation to its constituencies. We thus recall that it orchestrated an educational effort (in a conventional sense) in the form of a major outreach campaign directed at the wider public. We also recall that the S&S Coalition appointed a CS

Yet, our proto-exploration suggested that the OPI experiment had given rise to qualitatively significant, albeit not radical, strides in the two visions we saw emerge at the macro-level. Our investigation lent support to the following, tentative, claim with regard to (temporarily) bounded collective experiments: together with favourable conditions - both 'internal', in the form of affording initial conditions as well as regular interactions between their constituent parts, and enabling 'external' contextual conditions, flux, within this collective, in the form of interruptive and differentiating speech, performed by protagonists driven by strong concern [144] regarding a problem-in-common, appears to provide sufficient impetus for expanding and renewing understandings regarding this problem so as to make them significantly more nuanced, relational and contextualising. Our analysis also evinced that, at least in its heyday years, absence of external intervention did not condemn the initiative to a rudderless and confused search ending rapidly in discouragement and confusion, if not paralysis. Better still, it helped weaken the proposition that external pedagogical intervention constitutes a *sine-qua-non* condition of possibility for significant cognitive shifts to manifest, be they epistemic, ethical, or behavioural. *A contrario* it could be said to validate the proposition that highly motivated groups, mostly made up of citizen and local community groups, on their own accord and harnessing their own resources, are capable of generating new ideas and options for action and exploring ways of experimenting without external intervention being necessarily required. Importantly, however, this is not tantamount to claiming that, even under

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Outreach and Liaison facilitator, whose mission was to explain and promote the OPI among FNs and tribes.

[144] Rancière reminds us in the (1987, p. 12) that for novel capacities to emerge, challenging circumstances are required sparking protagonists' attention and motivation in the form of will, care, hope, or concern.

favourable conditions, experimental interactive spaces can be considered sufficiently educational in themselves so as to make any external facilitation redundant. One might thus legitimately ask if intervention on the part a facilitator equally familiar with the two contrasting universes in presence might have helped bring about more rapidly the radical shifts we initially hoped for or, at the very least, prevented the OPI from sliding into dormancy.

7.3.1.2. Role of 'extra-political' experimental spaces

Characterised as they are by unexpected problems and emergencies, at least one deep irony marks the present times: on the one hand, turning around our priorities and behaviour is urgently called for; on the other, since there are no precedents on which to rely, experimenting requiring time and concentration on one particular problem becomes critical. Against the grain of contemporary extolment of the political *qua* arena for conflict between different interpretations of what democratic values are about (Mouffe, 2000), what seems to us to be even more needed are experimental spaces that might be described as 'extra-political'. What we have in mind here are spaces shielded from short-term electoral preoccupations. Spared from the pressures of day-to-day politics and from constraints imposed by formal decision-making, these spaces can, at least in principle, be expected to enjoy more latitude for embracing long-term perspectives and hence for harnessing reflection and imagination in pursuit new ideas and dreams, however unconventional and seemingly far-fetched.

A combination of circumstances made the OPI stand out as such an experimental, 'extra-political' space. Not only did it come across as withdrawn from adversarial party politics. What is more, to the best of our

knowledge, its grant makers dictated few conditions and seemingly imposed neither a constraining mandate nor a strict timetable within which specific objectives were to be fulfilled. As a result, rather than being monopolised by contest between diverging vested interests, time and energies were freed to explore options for the future. Our analysis of the two successive macro-level visions suggested that both underwent advances towards longer-term thinking and inter-generational and inter-species interdependance and reciprosity and suggested emergence of a transboundary or regional sense of place and identity, if not citizenship, among non-native groups. Accordingly, our proto-exploration could be claimed to offer at least partial empirical vindication for the proposition that informal and experimental spaces can act as safe heavens or 'heterotopias' (Foucault, 1984; Masschelein, 2011), in which freedom can prevail for individual and collective intelligence and imaginations to be harnessed for rethinking our relations to each other and to the more-than-human world.

7.3.1.3. Including human/non-human relations in democratic education

Our interpretive analysis brought to light an admonition from a CS Elder pointing out that marine creatures were also teachers for humans. This admonition usefully reminded us of the need to consider human/non-human relations an important dimension of democratic education and of education in general. Making up for omissions found in past educational research that typically focused on inter-human relationships and on how these contribute to the construction of social worlds, educational researchers might from now on adopt less anthropocentric perspectives, particularly problematic against the backdrop of the socio-ecological

challenges that humanity currently faces. What is more, they would henceforth be inspired to redefine notably democratic education processes as such wherein non-humans, represented through their spokespeople (Latour, 2004a), join in as equal partners to invent new ways of taking care of the future.

7.3.1.4. Reframing dissensus

Among the implications listed in Chapter 2 for how we might think about democratic education, we highlighted how Biesta (2010, 2011) associated educational situations with such in which individuals and groups stepped forward to offer interpretations unsettling the configuration of a "field of perception-in-common" (Simons & Masschelein, 2010, p. 597) so far taken for granted. Under this conception, democratic education became consubstantial with dissensus expressed through interruptive acts. We, for our part, clearly do not call into question the importance of acts denouncing shortcomings and wrongs in what might be called mainstream ways of thinking and practices. We also view such acts are crucial for avoiding succumbing to complacency. Thus, had we, against all odds, found no messages expressing CS disapproval and objections to the ways in which non-native groups tended to approach marine conservation, there would arguably have been little point in looking, in either vision emanating from the OPI, for anything signalling a radical break with such approaches. Even so, our analysis of dissenting CS inputs suggested that the role of dissensus might go well beyond unsettling prevailing ways of thinking through protests or resitance and defending viewpoints peculiar to a certain group. Confirming Rancière's proposition that dissensus and interruption pave the way for "new modes of political construction of common objects

and new possibilities of collective enunciation" (2009a, p. 72), we noted how dissenting CS messages consistently targeted arbitrary boundaries and, in particular, fragmented ways of thinking and doing. This in turn invited us to ascribe potential to dissenting messages for also pushing back limits and hence for wedging space (Marker, 2011) for novel perspectives and responses[145]. In this light, dissensus can no longer be conflated with polemics and apologetics, let alone sheer protest and resistance[146]. Rather than encouraging a view of dissensus as implying holding on to certain presuppositions - whether normative/ethical, philosophical, ideological or other - and attacking those held by opponents, our interpretive analysis appeared to lend empirical support to reframing this notion in terms of creative friction opening up for new possibilities. Instead of presenting it as a problem to be disposed of or avoided (Todd, 2011) or to be cultivated for the sake of democracy (Mouffe, 2000), dissensus ensuing from contrasted perspectives rubbing shoulders would now be reframed as an important educational resource.

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[145] This proposition sits well with Juarrero (1999), who frames perturbations at the micro-level as constraints enabling renewal of the pool of 'alternative' significantly or radically novel ways, which emergent macro-level entities can access for the purpose of addressing unfamiliar challenges.

[146] This proposition arguably also goes in the direction of what two indigenous scholars, Alfred (1999) and Marker (2011) advocate. Both argue that merely resisting modernity is not enough. To genuinely free themselves from the latter's binary oppositions, dualisms and hierarchical orderings of the world as well as from its culture-nature dichotomy, indigenous peoples need to step forward to express other ways of thinking and doing that may help move towards what Marker calls broader paradigm transformation (p. 205) For him, bringing in CS knowledge and values can thus help open up for imaginative possibilities for new/old ways of thinking about how social and natural ecologies are inextricably linked.

7.3.1.5. Reframing the classic tension between distinctiveness and
interconnectedness

Our proto-exploration arguably helped us revisit the perennial and seemingly intractable tension - at the centre of much educational research (Todd, 2011) - between centrifugal distinctiveness and centripetal interconnectedness. Also Rancière seems preoccupied by this problem. In "The Ignorant Schoolmaster" (Rancière, 1987) we thus found him to place centrifugal impetus over and above a centripetal one. Welcoming differentiated conceptions as a warrant for intellectual liberty opening up "a thousand paths" (1987, p. 59), he denounces coincidence between conceptions as leading to stultifying consensus.

As we pondered on this issue, it occurred to us that the complexity perspective might at first invite us to follow Rancière, since going as far as merging distinct conceptions obviously carries the risk of reducing the diversity so highly prized by this perspective. Upon reflection, though, we found that complexity encouraged altogether rethinking the relationship between distinctiveness and interconnectedness. First, breaking with confrontational 'us/them' dichotomising, its dialogical logic helped us reframe the OPI as a site where contrasted perspectives which, under modern, binary 'either/or' reasoning, would be seen as incommensurable, could instead be assumed to engage in productive conversation. Moreover, rather than thinking in terms of the static properties of distinctiveness and interconnectedness that we deem inappropriate when looking, as we did, at dynamic ideational patterns or thought-forms, complexity thinking invited us instead to think in terms of differentiating *vs.* complexifying thought patterns.

Our gauging exercise under RQ.I helped us come to further grips with how the two processes of differentiation and complexification might

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be understood to relate to each other. Admittedly, at first sight, these two processes seemed to pull in opposite directions, one towards ever-greater separation, and the other towards ever-greater interconnectedness. However, lending empirical support to what we intuited already at a more abstract level in Chapter 2, this exercise suggested that, rather then being antinomic, *qua* processes shaping thought patterns, differentiation and complexification could be understood as being caught in a dynamic - and fecund - two-way relationship. More concretely, when gauging the shifts we noted in the two successive visions, we thus came to realise that capacity to apprehend an ever-wider array of distinctly different 'alternatives' seemed to constitute a condition of possibility for, as a next step, bringing them together in productive associations. This was for example the case when, introduction into local discussions of the possibility of integrated coastal management, championed by the CS, seemingly helped the S&S Coalition became aware that coastal development was likely to affect the OPISA and that, therefore, the proposed transboundary MPA could not be isolated from broader spatial contexts and broader policies. In other words, awareness of a new governance practice expanding the array of options available (differentiation) seemed to afford a more relational and contextualising way of thinking about the problem at hand (complexification). Conversely, readiness to embrace differentiated options appeared to depend on (pre-existing) ability, among S&S partners, to grasp or imagine possible gains reaped not only from accessing a pool of differentiated options but also from combining or linking them. Put otherwise, one might thus argue that for benefits deriving from combining distinctively different options to be recognised, a certain level of complexifying thought needs to be attained beforehand.

To recap, our gauging exercise led to the insight that, for a collective experiment to be well-placed for fulfilling their educational potential, bringing about more differentiated and more relational and contextualising understandings and approaches relative to a problem-in-common, an important condition of possibility seem to be that the individuals and organisations engaging in this experiment are both ready and able to embrace an ever-wider array of distinctly different 'alternatives' and to imagine how these 'alternatives' might fruitfully be combined. However, how these conditions can be secured remains an open question.

7.3.1.6. Blurred distinction between process and outcome

Although we did not get the opportunity to pose this question directly to former S&S Coalition protagonists, we are prepared to wager that, when first conceiving principles and purpose for the OPI during its gestation period, few, if any, of them anticipated what actually emerged in Spring 2003. We shall thus contend that, as they transpired in the ultimate vision, the two sub-themes of ethical dimension and shared governance across the border were arguably broached in a way the OPI's instigators might not even have thought about when they launched the initiative in the course of 1999.

As discussed in Chapter 2, a Rancierian conception proscribes a notion of democratic education implying construction of pre-set objectives, let alone instruction. While neither leaving everything to chance nor relying entirely on spontaneous, self-organising dynamics for fuelling educational processes, a conception informed by complexity's strands of emergence and enaction unquestionably helps escape obsession with pre-

specified ends and results. Under an ontology positing that 'all there is' is in constant flux, notions of forward planning and obligation to achieve specific results within a pre-determined time-span no longer seem to make much sense. Even more importantly, any attempt to make a sharp distinction between process and outcomes now seems a pointless exercise [147]. Complex ontology instead invites reframing educational processes as trajectories, all along which landmarks rather than 'final' results can be recorded.

As it transpired from our inquiry, the OPI's trajectory was arguably departing from a linear, forward-oriented, unidirectional trajectory in pursuit of pre-set ends. Not only did this trajectory to a considerable extent appear shaped through intentional envisioning's partnering with – 'internal' and 'external' circumstances. As illustrated by the way the S&S Coalition dealt with the issue of 'no-take' areas, concrete options thus appeared devised and revised in pace with opportunities and constraints At the same time, the OPI's trajectory seemed to us also to be shaped by inquiry-driven pursuit of knowledge (Alhadeff-Jones, 2013; Montuori, 2013) spanning the past, the present, and the future. While, doubtless, both visions for the OPISA might have gone further in taking on board past knowledge and practices, as illustrated by the ultimate vision's manifest interest in CS traditional knowledge and practices passed on from generation to generation since time immemorial, past understandings were nonetheless taken into account. While, as far as the present was concerned,

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[147] This became abundantly clear to us on at least two occasions: First, when, under **Step 2** for RQ.I., we struggled to draw a clear distinction between: (a) the OPI a*s* the collective process involving interplay between a multiplicity of protagonists - governments, grassroots organisations or plain citizens; (b) the concept or approach developed and promoted through this process. Second, when we struggled to establish whether radical novelty was best thought about as an outcome or as part of a process involving shifts.

both visions might have gone further in drawing in relevant contemporary knowledge from other disciplines[148], they evidently strove to incorporate the most recent state-of-the art scientific knowledge. As for the future, while they might have gone further in playful imagining (Osberg, 2010b) with respect to possible futures, the entire experiment of the OPI evinced how a group of organisations strove to conjure up modalities for preserving marine species and habitats as-yet-unexperimented in North America.

To recap, our investigation confirms that interrupting a notion that posits (democratic) education as a process through which knowledge and understandings are progressively or incrementally accumulated to serve specific pre-defined ends opens up for fundamentally reconceptualising this process. It can now be understood as a trajectory, open-ended, yet marked by certain landmarks along the way, which, as long as its momentum is sustained, ideally spans the past, the present, and the future. As it implies revisiting recursively past understandings, expanding horizontally or eccentrically in the present so as to take advantage of recent swathes of knowledge across conventional disciplinary boundaries of direct relevance for the problems at hand, not to forget playful imagining of virtual options to be contemplated in the future, this new or 'alternative' conceptualisation of educational processes might hopefully inspire current ends-oriented educational practices and, eventually, help replace altogether such practices by *possibility*-oriented practices (Davis & Sumara, 2006; Jörg, Davis, & Nickmans, 2007).

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[148] Only hard science knowledge was thus harnessed, at the expense of no less relevant social sciences and humanities, notably anthropological knowledge.

7.3.2. Methodological contribution

A second type of contribution arguably brought by our research was insights relating to challenges and constraints we encountered when endeavouring to generate knowledge relative to education in accordance with complexity's epistemological canons. To the best of our knowledge, only few educational researchers - among whom notably Davis and Sumara (2006), Haggis (2009) and Hetherington (2013) - have sought to bring to light epistemological and methodological challenges encountered when broaching a supposedly or potentially educational setting from a complexity perspective. In accordance with the principle that whoever is forewarned is also forearmed, our recording (in Annex 28 - **Book II**) of the decisions we took and the perplexities we experienced all along our empirical inquiry might prove useful for researchers intending to conduct empirical educational research from a complexity perspective for the first time. If one major insight were to be retained from our research effort with respect to methodology, it would be this: Since adopting a complexity attitude entails acute sensitivity to innumerable interrelationships playing out at different levels under constantly fluctuating conditions, a strict discipline coupled with principled and consistent selectivity throughout the research seem to offer the best bulwark against the researcher feeling either overwhelmed or drifting astray. Such discipline and selectivity obviously stand in stark contrast to what is expected from naturalistic educational researchers, namely going as deeply and broadly as possible in an effort to do justice to the richness - or thickness - of a given empirical setting.

Lastly, we arguably brought two additional methodological contributions as we made two 'epic' attempts to convert the concept of pedagogic subjectivation and the even more abstract concept of bifurcation, borrowed from Prigogine's world of thermodynamics, so as to make both

observable and gaugeable in social settings. Whereas our effort relative to the former concentrated on attuning it to complexity's epistemological tenets, for the latter, we readily concede that the understanding we proposed is far from definitive. Further reflection regarding how bifurcation events might be detected and their magnitude assessed in the social world is obviously required

7. 3. 3. Contribution to the field of practice

As it underlines that peculiar historical and initial conditions, contextual contingencies, and 'internal' as well as 'external' dynamics conspire to render each complex setting unique, complexity thinking proscribes generalising conclusions. Even if, as Haggis (2009) reminds us, emergent phenomena are universal by undergoing a process of coming into being, they are also specific in their particular instance and manifestation. From this follows that insights reaped from our investigation of the OPI cannot be directly transposed onto other, seemingly, comparable complex settings. Strictly speaking, their practical relevance and value will now confined to practitioners that are either contemplating to bring the OP-proposal back to life or - at a broader spatial scale within the same region - to address the issue of governing the Salish Sea and its commons as one seamless ecosystem.

Complexity thinking furthermore proscribes prescriptive recommendations often found in educational research. Davis and Sumara (2006) thus remind us that prescribing rules for governing social complex settings does not sit well with the open-endedness implicit in this thinking. Such rules might freeze or limit the space of the possible. Accordingly, we did not deem it to be our role to issue prescriptive recommendations that

would 'show the way' (Biesta, 1998) to practitioners. Nor did we consider it our role to set ourselves up as judges of protagonists involved in the OPI and, in particular, of the two Co-chairs of the S&S Coalition, the GSA and P4PS. For this reason we abstained, for example, from assessing the extent to which each of these organisations displayed openness and flexibility when exposed to CS perspectives on marine conservation.

Yet these reservations do not amount to stating that complexity-informed social researchers - and, among them, educational researchers in particular - can only hope to bring a very limited contribution to the field of practice. Against the backdrop of Rancière's notion that the ultimate purpose of knowing is to underpin doing (1987, p. 109) and of Danermark (2002, p. 9) for whom ability to help satisfy pressing needs and mitigate or avert particular challenges form an important rationale for conducting social inquiry, we would indeed deplore such a verdict. To counter it, we contend that our empirical investigation contributed in at least three ways to the field of practice.

First, our proto-exploration could be said to have adumbrated how complexity-informed educational researchers might usefully act as go-betweens bridging two, often sharply separated, worlds, namely that of practitioners informed by hard natural sciences and that of practitioners informed by so-called soft, social sciences. Offering a language and concepts that can be shared by both worlds, we might thus have contributed, however modestly, in dismantling the conceptual wall that often isolates these two branches of knowledge and practice from one another.

Second, thanks to our focus on potential effects of CS inputs during TBMPA meetings as well as in other relevant fora, we might have drawn the attention of practitioners, tackling intricate socio-ecological

problems in other regions with indigenous communities, to windfalls of systematically inviting spokespeople from these communities to be included in their teams.[149]

Third, as already suggested, adhering to a complexity-informed notion of education implies framing education as the domain of possibility Jörg (2009, p. 17). This arguably placed us well to raise 'what if' questions foregrounding unactualised potentialities we deemed inherent to the OPI and that this experiment, if revived, might actualise in the future. As reconceptualised, this notion thus reminds everyone of us that all situations, even such which, at first sight, do not seem promising, contain a 'shadowland' of unactualised potentialities that can, if offered a fresh chance or a new window of opportunity, be brought to fruition.

Replacing a picture framing the OPI as an initiative that could be revived at any time and hence be brought to bear new fruits, rather than as one either in a post-mortem or, at best, in dormant state, can be done in at least two ways: First, relying on a retrospective gaze, the first way involves what might be called a retro-utopic search for potentialities (Arns, 2004).[150] Such search is aimed at re-surfacing past *potential* futures for the purpose of irrigating present thinking and inspiring new visions for the future. As we retrieved ideas and recommendations that CS Salish representatives

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1. [149] According to a recent report by the European Environmental Agency (2011), the particular contribution of indigenous and local knowledge lies in its value-based frameworks and frames of meaning incorporating social needs. It also raises awareness of connections across different scientific disciplines, including between natural and social sciences, as well as to longer time scales. At the same time this report underlines the importance of feeding insights, gained from research building on this knowledge, back to the indigenous communities concerned.

[150] Importantly, a retro-utopic view is *not* about what Latour (2010) describes as 'fleeing backwards' and ignoring what is ahead. Nor is it about nostalgic attempts to call back what actualised in the past but is no more. It is about offering a platform for voices and ideas, concepts or proposals seemingly not taken sufficiently seriously at the time.

submitted during TBMPA meetings or other relevant fora, a number of which seemingly fell by the wayside (for instance, shifting attention from conservation to restoration), this is precisely what we did. While some of these ideas and recommendations transpired only in part or not at all in either macro-level vision, they nonetheless had the merit of being articulated. As we recovered these ideas and recommendations, we made it possible for practitioners to retrieve those, which, as seen through today's lenses, they might still deem relevant and valid for present or future initiatives pertaining to marine governance in the Salish Sea region. This is also what we did when presenting a first reading of the OPI in the context of an interactive sessions attended by former OPI protagonists[151].

One particular past potentiality, which did not materialise for want of sustained CS participation in the OPI, left us with a deep sense of a missed opportunity. What we have in mind here is the opportunity the OPI offered for showcasing novel relational practices between native and non-native groups marked by growing mutual trust and appreciation in the face of persisting divergences. Had CS involvement in the OPI been more sustained in its heyday, it might thus have offered FNs engaged in treaty-processes in BC[152] an opportunity for building more trustful relationships with non-native partners outside adversarial government-to-government relationships.[153] This potentiality seemed all the more important that the

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[151] Proceedings of this session on the theme 'Transboundary MPAS in the Salish Sea: Lessons from past endeavours and prospects for the future' are posted on http://depts.washington.edu/uwconf/psgb/proceedings/papers/1D_bastrup.pdf
[152] As explicated in footnote 97 (**Book II**), on the US side, co-management institutionalised through the Boldt decision entailed more cooperative relationships.
[153] A Musqueam representative (BC) advocated this possibility at a traditional ecological knowledge (TEK) conference hosted by the Stol:ho Nation (BC) in Abbotsford in November 2003 (*Personal notes*).

Tulalip representative at an MPA training conference in Pt. Ludlow (WA) emphasised the need to nurture relationships of trust and honesty.

Relaying and in part building on such 'recovery operation,' the second way of addressing the 'what if' question involves attempting to conjure up as-yet- unarticulated options that might be brought to fruition in the future. When foregrounding such potentialities, we are arguably taking on an active part - and hence responsibility - in broadening the range of conceivable futures. By opening up for possibilities seemingly as-yet-unthought about or 'othered' in the OPI's heyday, either by CS representatives or by the S&S Coalition as a whole, we are arguably contributing to moving away from what Osberg qualifies as "a destructive or stultifying present" (2008b). Or, put otherwise, heeding a call emitted by Latour (2004b), rather than devoting our work to *substracting* from 'reality,' pointing to what should be discarded or fought against, we are striving to *augment* it by "generat(ing) more ideas than we have received" and by suggesting "new positive metaphors, (...) attitudes and habits of thoughts" (p. 247). Against this backdrop we are inclined to view our attempt to articulate potentialities that, according to our analysis, were seemingly 'othered' by the different organisations and groups that engaged in the OPI as a major contribution to the field of practice.

7.3.3.1. Potentialities inherent to or adumbrated by the OPI

Whereas we unquestionably saw CS protagonists seize the stage offered by the OPI to make their voices heard, our proto-exploration nonetheless left us with the impression that they did not take full advantage of the opportunity it provided at the time for leaving their distinctive mark on the successive visions that informed the OPI. Leaving it to a future,

fully-fledged study to throw further light on constraints that might have held them back, [154] we shall limit ourselves here to offering some speculation as to what the macro-level vision might have looked like if the imprint left by CS perspectives had been more conspicuous. Apart from being inspired by background reading as well as on notes that we took during various seminars and conferences we attended in the years 1999 to 2011, in line with abductive reasoning, this speculation is also nurtured by thought experiments.

Generally speaking, in a climate characterised by CS cultural revival and hence increased self-confidence, compounded by steady Canadian-US federal agency funding for CS building partnerships across the border, we should have expected far greater CS involvement also in TBMPA meetings. CS representatives from either side of the border might thus have supported, far more openly and actively than they actually did, the OPI's transboundary scope as a pragmatic attempt to overcome the partitioning of marine habitats occasioned by a border that "the white man created" [155] and that they therefore never considered theirs (Miller, 1996/1997, 2006). At no point were proposals made elaborating upon how CS experience might inform the OPI's transboundary ambitions and help alleviate effects of this border. This seemed all the more surprising that, in the period in which CS involvement was documented, *viz.* fall 1999 to fall 2002, to the best of our knowledge, apart from the Transborder Marine Partnership Initiative involving the two local Governments of San Juan

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[154] These include lack of funding to cover travel expenses, scarcity of staff and many competing issues. On the US side in particular, concern about putting at risk the government-to-government relationship with federal and state authorities might also have played a role in hampering tribal attendance in TBMPA meetings in particular.
[155] Statement made by a member of Sumas tribe (WA) - Source: DVD of Coast Salish Gathering, 2005.

County (WA) and the Islands Trust (BC), few other fora were specifically oriented towards local and site-specific issues and concerns within which principles and modalities for stewarding marine life and habitats were framed as *transboundary* matters of concern. Even so, we did not infer from this that the important issue of shared governance across the political boundary had but limited interest for FNs and tribes and that there therefore seemed to be only little possibility for CS participants to push back limits in thinking in this respect. For one, important sources that could usefully have shed light on FN and tribal thinking about shared governance across the border unfortunately turned out to be unavailable [156]. Furthermore, the sheer circumstance that a fair number of BC FNs got together in June 2000 with at least four different WA tribes[157] to celebrate their common CS heritage and identity could in itself be interpreted as an event preparing for the CS Gatherings that took place from 2005 onwards, precisely for the purpose of discussing ways in which tribes and FNs could join forces across the border for the good of the Salish Sea. While, admittedly, jurisdictional and political circumstances extant to this day make it stand out as less plausible, we still consider it worthwhile to foreground as an important potentiality awaiting actualisation; this potentiality would bring the OPI, if revived *qua* informal forum in which few, if any governmental representatives took part, to enact the space in which the CS might safely bring up ideas, and concepts and practices endorsed in these Gatherings, many of which presumably informed by

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[156] In at least three instances, important sources thus turned out to be either non-existent (minutes of Transborder Partner meetings), to have gone missing (environmental lectures under the tri-university PS/GB ecosystem programme), or were not made accessible to us (minutes of the Northwest Indian Fisheries Commission's tribal Environmental Forum).

[157] Apart from the Lummi, there were representatives from the Tulalip, the Upper Skagit River and the Samish tribe.

practices stemming from a time and age when the Canada/US border and hence separate national institutions did not exist.

In other respects, while we indeed found CS Elders to seize the opportunity which TBMPA meetings and other relevant fora offered for enlightening non-native attendees about traditional values and practices, we could not help thinking that they might have gone much further, for example in explicating how they understood 'stewardship,' a concept to which they seemed to attribute a positive connotation.[158] A future OPI could conceivably become a privileged scene for CS representatives' unreserved championing of the idea that certain areas be granted experimental status for the purpose of demonstrating how the CS traditionally used marine habitats.[159] CS representatives might insist here on securing more prominence for indigenous knowledge, traditional CS values and ways of thinking for the purpose of generating "imaginative possibilities for new/old ways of thinking about the inextricable spirit of social and natural ecologies" (Marker, 2011, p. 205).[160]

By now, it will have become clear that what we deemed to be shortcomings noted in the two visions as we gauged them against the optimal scenario we had in mind, were in effect unfulfilled or unactualised potentialities we considered inherent to the initiative, either in its heyday or

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[158] In notes from the TBMPA meeting of May 2nd, 2002, under 'Tribes and First Nations' heading, 'stewardship' was described as "a positive concept with Tribes."
[159] During discussions at a TEK conference, held in November 2003, mentioned in footnote 153, one tribal participant did indeed propose that the feasibility be explored for pre-contact management/government practices to be re-introduced around the Salish Sea with First Nations and tribal Elders acting as mentors (*Personal notes taken at the conference*).
[160] This scenario seemed all the more plausible that the Clayoquot Sound Scientific Panel (BC), established in the 1990's, offered an example of fruitful exchange between Western science and indigenous theory *(Personal notes of input by Nu-Cha-Nulth Chief Tyson Atleo at Session on Knowledge translation and exchange at Salish Sea Research Conference, Vancouver, October 2011).*

under some future form. At the time, these shortcomings could obviously not simply be put down to unsteady CS involvement in the OPI alone. The S&S Coalition, for its part, might also have acted more resolutely to distinguish the OP proposal from contemporary programmes devised by the two federal governments. In addition to including methodologies grounded in traditional knowledge, it might also have considered mining the longstanding and intimate experiential knowledge held by non-aboriginal 'old-timers' based in the proposed area of interest. Even more importantly, breaking with the apparent reluctance and lack of boldness, displayed in both visions that emerged during the heyday period, to opening up to 'alternative,' unconventional governance tools, a future vision carried by a revived OPI might highlight a third way of governing marine commons. [161] Next to – or even better instead of coercive enforcement imposed by governments and (instrumentalising) education through outreach campaigns orchestrated by NGOs based outside the area concerned, this third way would deeply implicate local user groups based in the OPISA, acting as responsible stewards, in experimenting with self-instituted rules and self-implemented arrangements tailored to their specific local conditions.

Lastly, if resumed under some form, the OPI might be brought to showcase, in a far more consistent way, how approaches other than MPAs

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[161] That this option does not represent mere fanciful speculation is testified both by literature (Dietz et al., 2003) and by survey based on focus groups drawn from local communities in WA - mentioned in footnote 48 (**Book II**). A second interesting understanding from this survey was that participants clearly preferred grassroots, local decision-making processes - such as those taking place in Marine Resource Committees - to governmental, in this case, federal, involvement. They best saw the latter kept at a minimum or, better still, totally kept out. For most informants, a system of MPAs based on a local control model would recognise that local residents knew the problems best, had good ideas and had a real stake in the outcome of the MRC experiment.

might contribute to the recovery and enhancement of marine commons included in the Salish Sea. Above all, it might demonstrate how a multiplicity of diverse organisations (and agencies) might organise themselves so as to overcome at least some of the dysfunctional effects occasioned by arbitrary sector-based, administrative and jurisdictional boundaries. Such re-organisation would seek to replicate in the realm of human affairs at least some of the interconnectedness and seamlessness, which characterises biophysical processes and systems. While we did detect interesting signals pointing at a nascent regional or transboundary sense of place and identity, should the OPI experiment be revived, it might be well worth looking further into how such as sense might be further developed and in particular how relations between the islander communities north and south of the border might be strengthened, possibly via further practical projects across the border.

Summing up

Beyond the theoretical and methodological insights, we shall claim that our research arguably also contributed to the field of practice. First of all, having alerted practitioners in the Salish Sea region to potentialities inherent to a collective experiment such as the OPI, it might possibly prompt them to revive this experiment under some form. More generally, it might help draw the attention of practitioners, also elsewhere, to dividends in terms of novel ways of governing marine commons that can be reaped, provided certain conditions are secured. Among these conditions we wish to highlight, first, ensuring that the experiments concerned are kept away from day-to-day politics as well as from lobby groups with short-term agendas; second, securing presence within the experiment of different

ontological/paradigmatic perspectives, even antagonistic ones. Third, as hinted at by our proto-exploration, a special windfall inherent to transboundary experiments is emergence of a sense of place spanning political boundaries, which might in turn pave the way for some form of transboundary identity and, ultimately, transboundary citizenship.

Our research might also have some inspirational value by suggesting an unconventional angle that might provide practitioners in the Salish Sea Region, but supposedly also elsewhere, with an edge when grappling with intricate socio-ecological matters of public concern. Combined with our experience as practitioner, our own 'practicing' of complexity thinking in the course of our research, thus prompts us to contend that this form of thinking carries with it clear benefits when applied to the field of practice. Not only will this perspective arguably make instigators of collective experiments more sensitive to arbitrary and dysfunctional boundaries, be they conceptual, sector-based, organisational or jurisdictional. This way of thinking arguably also prepares them well for facing uncertainty, contingency, on-going flux and hence unpredictability. As it invites them to replace tight planning schedules with adaptive responses, while encouraging them to think about the wider contexts in which their projects are embedded as being made up of dynamic multi-scalar relationships, complexity thinking arguably puts them in a better position for coping with the many as-yet- unknown challenges lying ahead. Lastly, it might help them come round to an understanding that every worldview and way of knowing has something to offer while none in particular can claim to bring the whole picture. They would thereby become more aware of an acute need to enlarge frames of reference so as to leave room for and preserve a diversity of approaches into which they can tap when facing unprecedented challenges.

7.4. From closure to opening: raising fresh questions

As already noted, rather than seeking authoritative answers or firm conclusions as to "what was the case", let alone validation or invalidation of hypotheses, deductively derived from a general rule or law, what can be expected from research conducted from a complexity attitude is entirely different. From this perspective, and in full agreement with the post-normal scientific paradigm (Funtowicz & Ravetz, 1993), raising questions is as important a dimension of knowledge generation as providing replies. Both perspectives underline that study of experimental processes can prove particularly fecund in raising new questions that re-orient social research agendas. Inspired by Carpendale (2004), the two schemes below illustrate the fundamental difference between the restrictive and expansive approach adopted respectively by conventional - or normal - and post-normal complexity-informed experimental research processes.

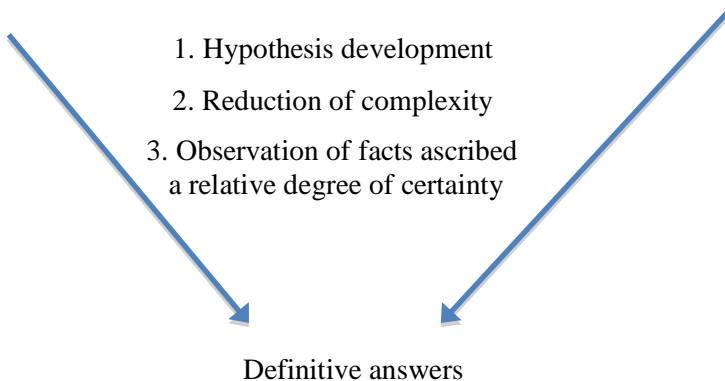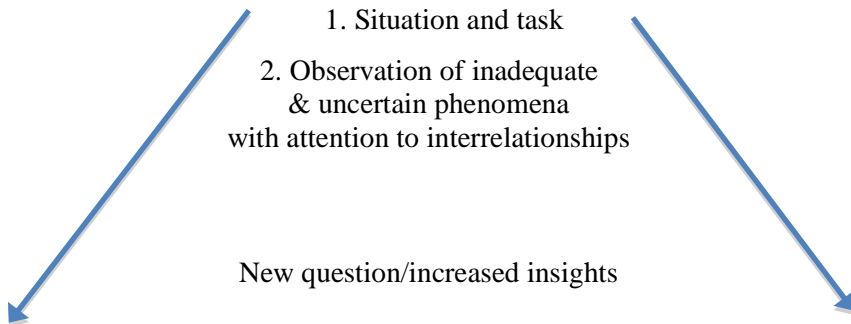*Fig. 5*: Scheme of conventional or normal experimental research process

1. Hypothesis development
2. Reduction of complexity
3. Observation of facts ascribed a relative degree of certainty

Definitive answers

1. Situation and task

2. Observation of inadequate
& uncertain phenomena
with attention to interrelationships

New question/increased insights

In accordance with the latter scheme our research surfaced at least two broad questions relative to open-ended, collective experimentation with democracy and its correlate democratic education, which appear worthwhile for both theorists and practitioners to acknowledge. While these questions obviously call for in-depth examination in other places and at other times, we shall briefly introduce them below.

Q.1: Towards a complexity-informed notion of reflexivity

Our preliminary readings pointed at the notion of reflexivity as central to many contributions looking at the educational potential of collectives grappling with 'wicked' problems from a social learning perspective (Bastrup-Birk & Wildemeersch, 2011; Wals, 2007) . As we approached the OPI from a complexity perspective, we came to wonder what room there might be for reflexivity under complexity-informed theorising. Looking at the concept of reflexivity through a complexity lens immediately raised the question if this concept might best be understood to form part of the general notion of intentionality, broached in Chapter 2, or if it needed to be

completely reconceptualised, for example, as a major springboard for self-organisation. Although our literature review revealed interesting discussions anchoring this concept to complexity, notably in the context of organisational studies (Chia, 1998; Goldstein, 2002) but also in sociology (Sandywell, 2005), we abstained from including it in our conceptual toolkit. We nonetheless intuit that it might fruitfully be explored in relation to a conception of education tilting towards complexity's enaction strand.

Q.2: Ontological and epistemological 'hybridisation'

This question haunted us throughout our entire inquiry. On the one hand, we found several writings unqualifiedly ascribing a positive role to hybridisation. For some, (Mohan, 2001) hybridity opens up for radical possibilities. We also found Callon, Lascoumes, and Barthe (2009) extolling the virtues of 'hybrid forums' in which different perspectives regarding complex and uncertain matters of concern are brought to light. Writing specifically about indigenous knowledge, Berkes (2008, p. 249) anticipated traditional systems to transform themselves into "diverse and creative hybrid systems that build on traditional ways of knowing and take advantage of windows of opportunity (e.g. entry in bio-economy) in a rapidly changing world." On the other hand, Marker (2011, p. 198) presents an argument demonstrating how Rancière's concept of 'bringing two worlds into one' can also have pernicious effects. He argues that one of the persistent challenges that modernity poses to indigenous communities is the idea of universalism (stemming from the French revolution) and threatening to eradicate unique local knowledge and languages, not to mention their underlying ontologies and cosmologies.

For us, the concept of 'hybridisation' tends to evoke the irreversible loss of distinctive features, the maintenance of which is required in order to keep open as many options as possible. However, co-existence, side by side, of different ontologies does not appear to constitute the ideal scenario either.[162] Instead, we would clearly prefer thinking in terms of *temporary* combinations or assemblages of different ontologies and epistemologies. From this perspective, no distinct worldview would be irredeemably diluted or lost. At the same time, though, no worldview would be frozen. Continuously nurtured by new insights and new experiences every single worldview, each in its own distinctive way, would take part in an evolutionary drive towards ever more sophisticated understandings. The French philosopher Souriau, as reread by Latour (2009, p. 13) seemed to us to bring a striking contribution in that respect. When evoking how a variety of (parallel) ontologies that he calls 'modes of existence' might be brought together without any of them loosing foundational features, he thus suggests the following analogy: just as rays of different colours, when brought together, produce a brighter form of light, i.e. white light, so would different modes of existence, when brought together, spark a composite, higher-order mode. Crucially, while each ray would contribute, none would lose its distinctive, foundational characteristics.[163] Yet, this fascinating formula still leaves us with the down-to-earth problem pointed out by Geertz (1983), namely, finding a

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[162] A statement by a Tulalip speaker at the training seminar at Pt. Ludlow seemed to go in such a direction. This speaker told his non-native audience "You have your way of living, and we have ours. We can still live alongside each other."

[163] We reproduce here the original quotation: "…s'il est vrai même qu'il faille, pour appréhender l'univers dans sa complexité, non seulement rendre la pensée capable de tous les rayons multicolores de l'existence, mais même d'une lumière nouvelle, d'une lumière blanche les unissant dans la clarté d'une surexistence qui surpasse tous ces modes sans en subvertir la réalité » (p. 82-83) - http://www.bruno-latour.fr -/sites/default/files/98-SOURIAU-FR.pdf.

common medium or language through which diverse ontologies can be translated so as to make communication possible between discourses reflecting different modes of existence without any of them losing their specificity.

7.5. Winding up

Recalling that, for Osberg (2005), the very essence of the universe warrants continuous opening of what other perspectives consider closure, our research project sought to look into ways and conditions that made it possible for different and, at times, contrasting ways of thinking, seeing, and saying not only to co-exist peacefully but, beyond this, to join forces to conjure up radically novel options for addressing pressing matters of public concern. In the present times of unprecedented uncertainty and unpredictability, but also of interdependence, we conjectured that a conception of democratic education, for a notable part informed by complexity, could help us compose afresh a liveable and breathable 'home' common for humans and non-humans alike (Latour, 2010). At its best, this conception might 'accompany' us into more sustainable and equitable futures as we seek to invent and experiment our way out of our current socio-ecological predicament.

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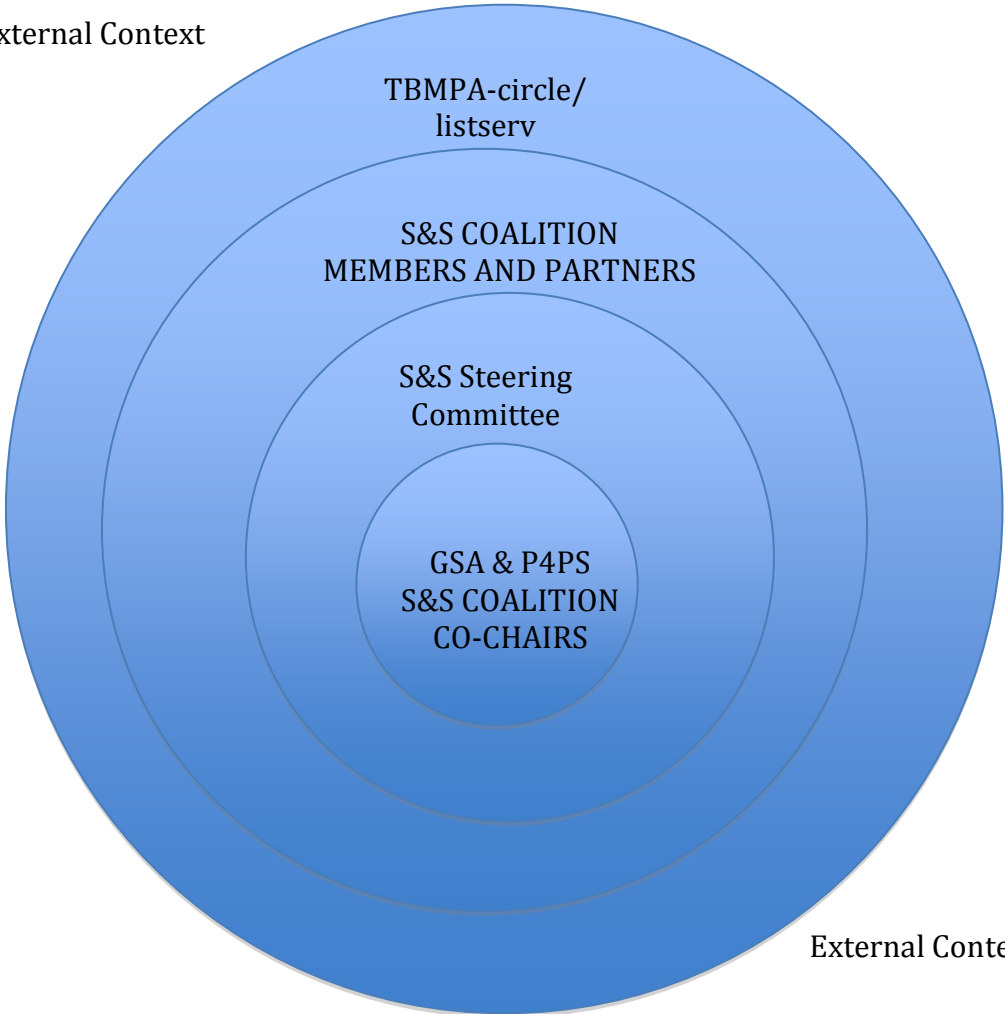Seidman, S. (2008). *Contested knowledge: Social theory today*. Oxford: Blackwell.

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The OPI nebula as a set of nested circles

External Context

TBMPA-circle/
listserv

S&S COALITION
MEMBERS AND PARTNERS

S&S Steering
Committee

GSA & P4PS
S&S COALITION
CO-CHAIRS

External Context

In addition to P4PS (WA) and the GSA) - British Columbia (BC) that co-chaired it, the circle of S&S Coalition members included the following organisations:

In British Columbia:

Canadian Parks & Wilderness Society
Galiano Conservancy Association
Islands Trust
Living Oceans Society
Mayne Island Naturalists
Oceans Blue Foundation
Pender Island Conservancy
Society Promoting Environmental Conservation
Underwater Council of BC

In Washington State:

Evergreen Islands
Friends of the San Juans
Orca Conservancy
Orca Network
Orca Recovery Campaign (Earth Island Institute)
San Juan County
SoundWatch
Surfrider Foundation (Pacific Northwest Region)
Washington Scuba Alliance

While the TBMPA listserv obviously included S&S Coalition member organisations, the number of non-members that subscribed to this list grew significantly throughout the OPI's heyday period. Already in the fall of 1999 it included about 40 organisations with about half from each side of the border. It thus came to include kayaker and diver organisations, fishermen associations, representatives of universities in the region, not to forget individual FNs and tribes as well as CS institutions such as the Coast Salish Sea Council, the Northwest Indian Fisheries Commission and BC Aboriginal Tourism. All organisations included were invited at the quarterly TBMPA meetings that the S&S Coalition convened for the purpose of discussing the OP proposal.

Key Sound & Straits Coalition members as well as First Nations and tribes with interests in the Orca Pass International Stewardship Area
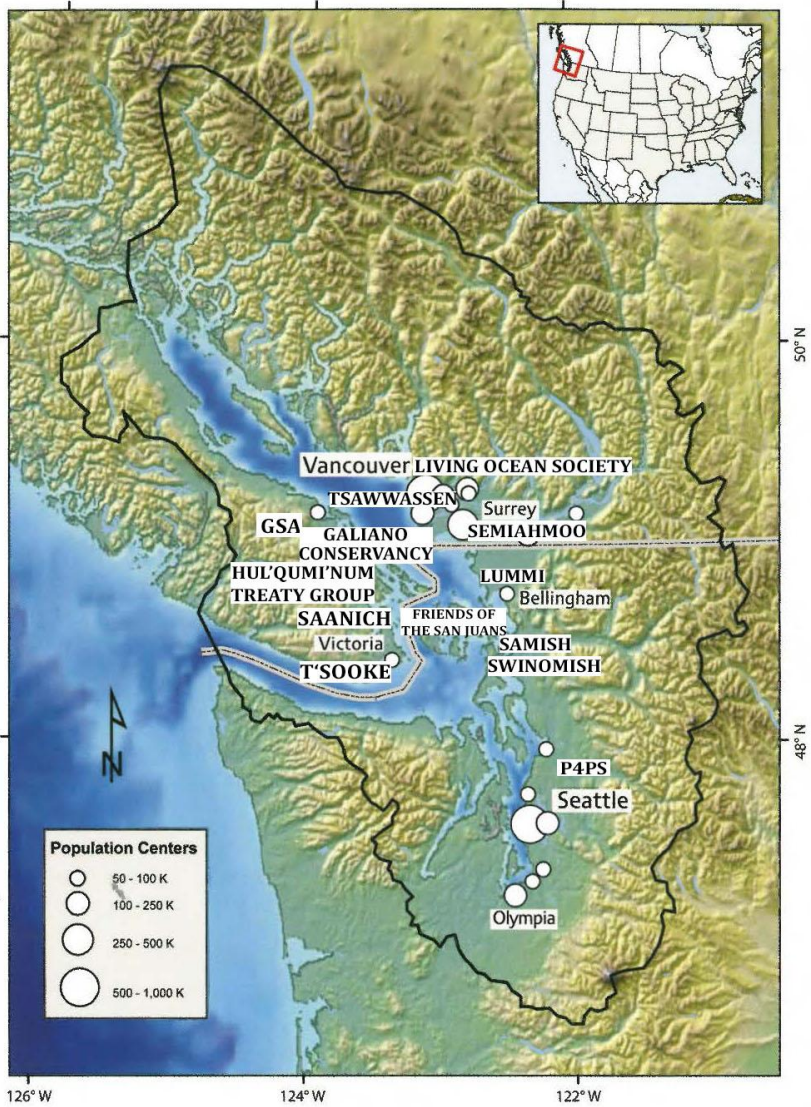
Qualitative rating of the intermediate and ultimate visions with respect to differentiation and complexification

Intermediate vision

1(a)		1(b)		2(a)		2(b)		2(c)	
Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)
(/)	(/)	(+)	(+)	(+)	(/)	(-)	(/)	(/)	(+)

Ultimate vision

1(a)		1(b)		2(a)		2(b)		2(c)	
Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)
(/)	(?)	(+)	(+)	(/)	(/)	(-)	(-)	(?)	(+)

Key:

(?) = Inconclusive
(-) = Requirements deemed insufficiently met
 (/) = Requirements deemed partly met
(+) = Requirements deemed substantially but not fully met
 + = Requirements deemed fully met (optimal scenario)

Qualitative rating of Coast Salish messages with respect to interruptive and differentiating potential

1. Interruptive potential

	1(a)	1(b)	2(a)	2(b)	2(c)
Sub-Cycle 1	(−)	+	?	+	(−)
Sub-Cycle 2	(−)	+	?	+	(−)

2. Differentiating potential

	1(a)	1(b)	2(a)	(2b)	2(c)
Sub-Cycle 1	Pointer 2: (+)	Pointer 2: +	Pointer 2: +	Pointer 2: +	Pointer 2: ?
	Pointer 3: +	Pointer 3: +	Pointer 3: +	Pointer 3: +	Pointer 3: ?
Sub-Cycle 2	Pointer 2: ?	Pointer 2: +	Pointer 2: (-)	Pointer 2: +	Pointer 2: ?
	Pointer 3: ?	Pointer 3: +	Pointer 3: (-)	Pointer 3: +	Pointer 3: ?

Key:

+ = Significant potential
(+) = Some potential
? = Question kept open
(−) = Negligible potential

Overview of qualitative ratings informing the level-jumping analysis

A. Qualitative ratings of CS messages with respect to interruptive and differentiating potential

1. Interruptive potential

	1(a)	1(b)	2(a)	2(b)	2(c)
Sub-Cycle 1	(−)	+	?	+	(−)
Sub-Cycle 2	(−)	+	?	+	(−)

2. Differentiating potential

	1(a)	1(b)	2(a)	(2(b)	2(c)
Sub-Cycle 1	Pointer 2: (+)	Pointer 2: +	Pointer 2: +	Pointer 2: +	Pointer 2: ?
	Pointer 3: +	Pointer 3: +	Pointer 3: +	Pointer 3: +	Pointer 3: ?
Sub-Cycle 2	Pointer 2: ?	Pointer 2: +	Pointer 2: (-)	Pointer 2: +	Pointer 2: ?
	Pointer 3: ?	Pointer 3: +	Pointer 3: (-)	Pointer 3: +	Pointer 3: ?

Key:

+	=	Significant potential
(+)	=	Some potential
?	=	Question kept open
(−)	=	Negligible potential

B. Qualitative ratings of the intermediate and ultimate visions with respect to differentiation and complexification

Intermediate vision

1(a)		1(b)		2(a)		2(b)		2(c)	
Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)	Std (a)	Std (b)
(/)	(/)	(+)	(+)	(+)	(/)	(-)	(/)	(/)	(+)

Ultimate vision

1(a)		1(b)		2(a)		2(b)		2(c)	
Std (a)	Std (b)	Std (a)	Std (b)						
(/)	(?)	(+)	(+)	(/)	(/)	(-)	(-)	(?)	(+)

Key:

    (?) = Inconclusive
    (-) = Requirements deemed insufficiently met
    (/) = Requirements deemed partly met
    (+) = Requirements deemed substantially but not fully met
    + = Requirements deemed fully met (optimal scenario)