

A Fresh Take on Democratic Education: Revisiting Rancière through the Notions of Emergence and Enaction

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This paper aims at contributing to new ways of thinking about democratic education. We discuss how revisiting this concept may help raise fresh questions in relation to non-formal fora grappling with intricate sustainability issues that span international borders. Starting from Rancière's ideas on democracy, we first examine a conception of democratic education derived from these ideas. Next, we turn to a complexity informed notion of education as proposed by the two strands of emergence and enaction. We discuss how, in introducing additional dimensions, these strands might fruitfully complement the Rancierian conception of education. We conclude our discussion by proposing to reposition democratic education as a process of (co)-emergence afforded by a series of critical moments which, we suggest, can call forth radically novel visions for governing the commons.

Introduction

The present paper is structured as follows: After a brief overview of writings that we found relevant for the ensuing discussion, we introduce Rancière's thinking on democracy and democratic practices. We show how this thinking informs recent theorizing on democratic education. We next compare what we shall call a Rancierian conception of education with one informed by complexity, more precisely, its two strands of emergence and enaction. We highlight how we see the two ways of thinking about education as complementary in several respects. Finally, we discuss implications of combining these approaches in relation to the notion of novelty.

Background

As the recent Occupy movements – along with transboundary environmental activism – illustrate, formal policies currently presented as democratic are increasingly contested. All too often, the logic to which national governments and their teams of experts adhere

is found inappropriate for addressing intricate and uncertain problems, the scope of which tends to span national boundaries. Change seems instead to happen at the edge as collective experiments seek novel ways of tackling such problems.

Several empirically oriented writings point in this direction. Already in 1990 Ostrom's work on governing the commons identified local communities oriented towards sustainable use of natural resources as demonstrably capable of inventing their own management regimes. She also found that voluntary regimes often proved more adequate than top-down regulation. Under the notion of associative democracy, Hirst (1994) confirmed this observation. He pointed out that peer-based, voluntary and local networks proved capable of coping with situations in which the only certainty was the need for ceaseless experimentation. In his discussion of late modern politics, Beck too foregrounded for a – that he dubbed 'sub-political' – as frontrunners for exploring the "themes of the future" (1997, p. 100). He saw such fora, often formed by grass roots groups, as spaces in which "radical changes and new departures are taking place, not completely unconsciously, but not fully consciously and focused either" (ibid., p. 102). For him, the sub-political sphere marks the birth of a self-organizing society, which must 'reinvent' everything, except that it does not know how (ibid., p. 103). Moreover, his suggestion that late modernity calls into question the very foundations and historical legitimacy of national borders (Beck, 1994, p. 178) invites looking at transboundary initiatives and their potential for conjuring up a new kind of democratic citizenship spanning one or more international borders. Finally, he expects sub-political agents – less subject to bureaucratic and political constraints – to have more latitude for responding, as circumstances require it. Osberg (2010, p. 164) echoes this when she argues that experimentation is easier to conceive in the absence of obligation to make political decisions. Heifetz (1994) makes a similar proposition when he points at fora with no formal authority as offering more room for experimenting and for asking harder questions.

We shall briefly present one particular case for the purpose of illustrating how the theoretical concepts introduced in this paper might relate to such fora. We shall therefore limit this presentation to features we deem relevant for our discussion. Launched in the spring of 1999, what soon came to be called the 'Orca Pass Initiative' (OPI) comprised a network of environmental activist and citizen groups from both sides of the Canada/United States border in the Pacific Northwest. Its purpose was to explore and promote options for halting and reverting alarming decline in the populations of certain species native to the Inland Sea, now officially called the Salish Sea, as well as steady degradation of their habitats (figure 1: map of the Salish Sea).



Figure 1: Map of the Salish Sea
(Courtesy The SeaDoC Society, <http://www.seadocsociety.org>)

We understand the OPI's trajectory to be divided into at least three distinct phases. The period between spring of 1999 and spring 2000 formed its phase of gestation and genesis. The second phase, stretching from spring 2000 to spring 2003, can be described as its heyday. This period witnessed outstanding activity as an outreach campaign was launched to harness extensive support for the idea of a "transboundary marine protected area" (MPA). This second phase culminated with the British Columbia/Washington Environmental Cooperation Council's endorsement of recommendations regarding what came to be called the "Orca Pass International Stewardship Area" (OPISA). The third phase, stretching from summer 2003 to summer 2005, was marked by gradual loss of steam and eventual dormancy.

Apart from its conspicuous non-formal and transboundary character, the OPI offered a potential platform for distinctive indigenous voices to be heard outside government-to-government negotiations. As Coast Salish representatives from either side of the border regularly attended transboundary OPI meetings, this initiative thus offered an opportunity to illuminate what might emerge from encounters between starkly contrasted worldviews in the context of collective experimentation.

Rancière's notion of democracy

Our search for conceptual tools helping us understand better dynamics that might call forth novel approaches to governing the commons led us to recent theoretical contributions revisiting the notion of democratic education. Arguably this composite

notion cannot be properly discussed without examining each term in turn. This became all the more evident when we found these contributions to approach 'democracy' and 'democratic practices' in different ways. Some associate democracy with social and civic inclusion of marginalized groups or community building – binding, bonding and bridging across differences (Wildemeersch & Vandenabeele, 2007). For others, like Mouffe (2000), healthy democratic practices imply cultivating conflicting interpretations of values in the manner of competing athletes, albeit in a climate of mutual respect for common rules.

In the discussion that follows, we draw on Rancière's conception of democracy. What we found refreshing as we read him was that, deeply normative as it is, his thinking about democracy offers two affirmations that we deem particularly relevant in relation to fora like the OPI. First, the axiom of equality, epitomized through "the government of anybody and everybody" (Rancière, 2006, p. 94), offers an anti-dote to technocratic, expert-driven governance. It posits the possibility for anyone to raise his/her voice, to engage in public affairs and contribute to redrawing the common world "without leaving it to others to make things happen" (our emphasis) (Ruby, 2009, p. 96). In the case of the OPI, it legitimizes the expectation that OPI protagonists are immanently capable of conjuring up novel principles and modalities for governing the commons of the Salish Sea without being told to do so by outsiders. The axiom of equality is grounded in a second axiom positing that each and every individual or group is equally capable of the intelligence required for discernment and taking responsibility. For Rancière, individuals or groups undergo political subjectivation – they become political subjects – when they refuse to believe that the only way things can be is how they currently are, and when they demonstrate their capacity to link 'what is' to 'what could be'.

Rancière (2010, pp. 56-57) goes to great lengths to convince us that "the consensual self-regulation of the multitude" has nothing to do with what democracy ought to stand for. Extolling inclusiveness, such consensual approach to democracy transforms the political community into an ethical community gathering "a single people in which every one is supposed to be counted" (ibid., p. 189). At the same time, it divides up the population into pre-given parts, functions or roles (2000, p. 14).

With his notion of 'dissensus', Rancière proposes a leap from this logic (Corcoran, p. 1, cited in Rancière, 2010). 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). As they step forward and point at what is arbitrary, 'wrong' or unacceptable in the existing order, they transform consensual, ethical communities into genuinely *political* communities. Dissensus hence becomes the condition opening "an interval for political subjectivation" and "a space for testing it" (Rancière, 2004, p. 304). It comes to expression through *breaks* between what certain categories of people are expected to see, think and say and what they come to see, think and say. It thereby becomes clear that, in Rancière's thinking, dissensus is inseparable from interruption. We understand the latter 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; second, as effects of such acts. Time and again, interruptive acts bring out in the open arbitrary boundaries separating what is considered visible, audible and comprehensible from what is not (Rancière, 2010, p. 38).

As he elaborates on Rancière's thinking, Biesta (2011) gives further clues regarding how 'democracy' may be understood. Neither a regime nor a state, democracy is an open-ended experiment involving ceaseless re-invention through courageous and imaginative acts. Even when assimilated to a form of 'order', citizens may at any time alter whatever order there is. For Biesta (2010, p. 15), quintessentially democratic moments are such that allow the values of liberty and equality to be expressed.

A question central to the argument of the paper pertains to how dissensus – and the confrontation of contrasted logics it implies – may contribute to novel possibilities. We found Rancière’s thinking to point in such direction. For example, he understands dissensus and interruption to imply “new modes of political construction of common objects and new possibilities of collective enunciation” (Rancière, 2009a, p. 72). Elsewhere, welcoming multiple radical discourses, Rancière (2009b) invites us to explore the multiple roads and their unforeseen crossroads through which ways of experiencing the visible and the sayable can be apprehended. We nonetheless find that the question of how friction between contrasting logics might spur invention of “new ‘radical’ imaginaries” (Swyngedouw, 2011, p. 374) deserves further attention. Since, as we see it, this question touches upon some form of democratic education, we shall proceed to examine if a conception of education tailored to democratic practices as defined by Rancière might help shed light on it.

Reconceptualizing democratic education in the light of Rancière

As they derive their theorizing about democratic education from Rancière’s thinking, Biesta, Masschelein and Simons all arrive at strikingly unconventional conceptions.

Biesta’s view of democracy as an open-ended experiment (Biesta, 2010, p. 15) leads him to contest a conception of democratic education that ties democratic citizenship to pre-existing ideas about what it means to be a good citizen (Biesta, 2010, 2011). Anchoring it primarily to non-formal settings, he proposes to understand democratic education as springing out from sheer engagement with the experiment of democracy. More precisely, democratic education would now be inseparable from acts of political subjectivation¹ transforming individuals and groups into political subjects.

This intimate link between democratic education and political subjectivation carries with it at least four implications for how we might henceforth think about the former. These implications are all the more important that they form part of the rationale for bringing together the Rancierian conception and complexity-informed ways of thinking about education.

The first implication is that, since political subjectivation presupposes interruptive acts, a revisited conception of democratic education will convey a central role to such acts. In other words, for settings to qualify as spaces for democratic education, they must display acts whereby individuals or groups step forward to question prevailing ways of being, seeing and saying (Rancière, 2010, pp. 38-39). For example, in the case of the OPI, outspoken Coast Salish questioning of prevailing ways of thinking about governance of marine commons and, more specifically, of the very concept of MPAs, would count as such acts.

The second implication is a break with democratic education as a vehicle for incorporating a certain stock of knowledge and particular values into would-be citizens. A Rancierian conception of democratic education dissociates the latter from pre-set objectives. Such emphasis on open-endedness calls attention to a question central to any theorizing about education: intentionality. To address this question, we shall return to Rancière himself for a moment. What we read here leaves us with an impression of ambiguity on his part. On the one hand, we found suspicion towards ‘spontaneist’ acts, notably in relation to revolutionary movements (Ruby, 2009, p. 13; p. 97). Moreover, his axiom about equal intelligence, positing the capacity of ‘each and everyone’ to eye what is wrong, suggests harnessing of conscious and directed reflection. On the other hand, as

¹ Biesta himself opts for the term “democratic subjectification” rather than political subjectivation. However, since both terms have roots in Rancière’s thinking and imply interruption, we consider them interchangeable.

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, 2009, p. 82). From this we infer that, as a political act, interruption cannot be instigated. Biesta confirms such lingering uneasiness with regard to the intentional character of interruptive acts when he limits any notion of intentionality in relation to engagement with the democratic experiment – and hence to democratic education – to sheer “desire for democracy” (Biesta, 2011, p. 8).

The third implication is that democratic education should be decoupled from external intervention or facilitation. By virtue of the intelligence immanent to each and every one of us, given favorable conditions, we are now assumed to be capable of bootstrapping ourselves into novel ways of thinking.

The fourth implication – closely linked to the previous one and critical for the argument central to this paper – is that democratic education can now legitimately be framed as a condition of possibility 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, stressed by the author).

Masschelein (2006) and Simons & Masschelein (2010) elaborate further on links between education and new possibilities. Reminding us about the etymology of the word education – *e-ducere*, meaning among 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’ (ibid., 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’ (ibid., p. 601) for conjuring up as-yet-unexplored possibilities. Inspired by the “Ignorant Schoolmaster” (Rancière, 1987, quoted by Simons & Masschelein, 2010, p. 601), it directs attention to protagonists experiencing their potentiality for pulling themselves out of problematic situations – and, may we add, the problematic ways of thinking that created these situations in the first place – by harnessing their imaginative capabilities. However, in contrast to political subjectivation that involves dis-identification or *disengagement* from the existing order, pedagogic subjectivation implies *engagement* with ‘a thing-in-common’ for the purpose of conjuring up new possibilities². Yet this is not tantamount to everyone subscribing to a ‘field of perception-in-common’ (ibid., p. 597). Participants do not necessarily approach a common problem in identical ways. As they each draw on their distinctive horizons, an array of heterogeneous – possibly contradictory – responses might arise. For Masschelein (2006, p. 569), it is precisely the encounter with different ways of thinking that potentially renews our gaze and helps us discover new possibilities.

The notion of pedagogic subjectivation invites us to ask two questions in the context of the OPI: first, as they attended OPI meetings, did Coast Salish tribes and First Nations 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, did they seem aware that, in so doing, they demonstrated

² This is fully in line with Rancière (2003) as 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*.

their ability to bring a distinctive contribution by opening up for new options? This would indeed illustrate how collective energies might be directed, also across an international border, towards a common cause (Davis, Sumara & Luce-Kapler, 2000), albeit on different premises and via different approaches.

To sum up, we were presented above with a conception that reframes democratic education as a companion to – or offspring of – experimentation with democracy in a Rancierian sense. We considered two notions as central to this conception, both positing considerable latitude for autonomous acts and equally pivotal for calling forth novelty, namely:

- (a) Interruption that calls into question the logic underpinning existing or prevailing ways of thinking, seeing and saying – and may we add – relating within a given collective. Following Rancière, we understand interruption to spring out from *within* individuals or groups and thus not necessarily to require intervention from outside;
- (b) Pedagogic subjectivation through which individuals or groups, as they harness their own capacities, become aware of their potentiality for bringing to the fore alternative, distinctively different ways of thinking about a particular ‘problem-in-common’.

We understand these two notions to be closely related: As interruption debunks inappropriate ways of thinking about a given problem, it clears the way for episodes of pedagogic subjectivation where protagonists ‘discover’ their ability to think afresh. 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 encourages us to consider both concepts, taken together, as offering a promising angle from which to explore the OPI *qua* educational space.

Education and novelty: The contribution of complexity

In this section, we shall show how two complexity informed perspectives³ on education might usefully be related to the Rancierian conception, particularly with respect to the question of novelty. We shall give special attention here to how these perspectives understand novelty to be brought about and how they expect it to manifest.

The two complexity strands we shall draw upon are centered respectively on the concepts of emergence and enaction⁴. While concurring in many respects, their different emphases speak against conflating them. At the same time both present a take on education that seems to sit well with the Rancierian conception.

The emergence strand reconceptualizes education as a process taking place in “the very spaces of emergence” (Osberg, 2008, p. 157). Informed by Prigogine’s dissipative structures theory, the notion of emergence is understood here to imply – at least in the

³ Alhadeff-Jones (2008) reminds us that, far from being a monolithic body of knowledge, the complexity field embraces a spectrum of widely diverse theories, each with specific central notions such as general systems, chaos and catastrophe, ecosystems and autopoiesis and each with its distinctive origin, ranging from thermodynamics, cybernetics to evolutionary biology.

⁴ As it will become clear, our presentation of and commentary on these two strands will draw primarily on Osberg for emergence and on Davis & Sumara and Fenwick for enaction. While we also encountered advocates of the emergence strand in organizational studies (Goldstein, 2000; Emmeche, Koeppe & Sternfelt, 1997) and sociology (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 pairing this notion with education.

sense of *strong* emergence⁵ (Osberg & Biesta, 2007) – a passage⁶ from one level of order to one qualitatively different from that which existed before (Osberg, 2008, 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 could not be conceived from the logic of the order that came before (*ibid.*, p. 33). Education becomes a process of exploration into “that which cannot currently be conceived as a possibility” (Osberg, 2008, 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.” As familiar, taken-for-granted assumptions, rules and representations can no longer be applied, there is no alternative but to invent new rules and responses along the way without knowing where they will lead. Spaces where such processes take place become spaces for imagining, inventing and experimenting.

The enaction perspective echoes this line of thinking. Derived from Maturana’s and Varela’s (1992) biological approach to cognition and therefore distancing itself from cognitive psychology’s decontextualized and individualistic approach (Haggis, 2009), it too recasts education as continuous invention and exploration. Calling forth new understandings, it ushers in new possibilities for interpretation and hence for action (Davis & Sumara, 2006, p. 76). The concept of ‘co-emergence’ 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 education⁷ – as “a joint participation, a choreography” rather than a “locatable process or phenomenon” (Davis, Sumara & Luce-Kapler, 2000, quoted by Fenwick, 2003). 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 particular setting in which they operate. Effects resulting from this interplay ripple through the system, turning it into one coherent unit with potential for birthing novel responses. Applied to the OPI, the enaction conception of education would thus direct attention to self-organizing dynamics that interactions between participant organizations and networks might have generated. It also encourages taking into account how such dynamics might either amplify or hamper emergence of novel responses. For example, in the context of the OPI, a conceivable ‘side-effect’ of sustained face-to-face exchanges might be a general climate of emulation propitious for exploring as-yet-unimagined options in relation to the concept of a transboundary MPA, thereby further opening the space of the possible.

As emergence and enaction lenses both direct attention to *effects* of processes playing out within spaces of (co)-emergence, understanding education as a process of (co)-emergence invites viewing novelty – and, what is more, radical novelty – as a potential effect of education. This focus on effects derives directly from complexity

⁵ While these authors (Osberg & Biesta, 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 (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.

⁶ Emmeche, Koeppe and Sternfelt (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.

⁷ We note here 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.

theory's departure from classic "a causes b" causality (Byrne, 2005, quoted by Haggis, 2009)⁸. It advocates instead conceiving causality in terms of a fabric of interdependent elements and processes that, together, either constrain or afford certain effects (Haggis, 2008). This in turn invites us to address the question of what conditions may be understood to afford radical novelty.

Two critical moments and one critical event: Interruption, pedagogic subjectivation, bifurcation and their interrelationship

When it comes to responding to the question just raised, the emergence strand in particular arguably ties 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, either interruptive acts or episodes of pedagogic subjectivation, might play in paving the way for new ways of thinking, Osberg (2008) relates radical novelty to certain critical points in the trajectory of emergent processes, dubbed bifurcation points. The graph below (figure 2) helps clarify this.

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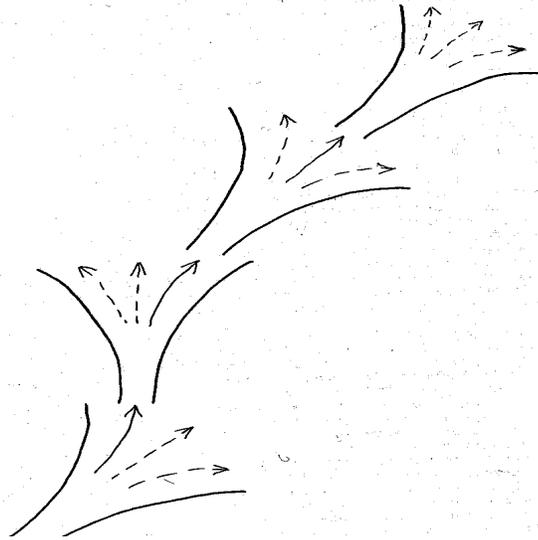


Figure 2: The process of emergence with points of bifurcation
(Drawn from Jantsch, 1981)

Again following Prigogine, the emergence strand posits that the quality of spaces of emergence changes after exposure to flux. We view 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. This interpretation finds support with Rancière as he posits aesthetic – and political – breaks to bring about "new forms of balance – or *imbalance*" (Rancière, 2009, p. 72, our *emphasis*). Moreover, as the figure above illustrates, when a system responds to

⁸ Interestingly, this is in line with Rancière's thinking. When describing aesthetic efficacy, he points at the "rupturing of any determinate link between cause and effect (Rancière, 2009, p. 63). Later, he adds, "[T]he political effect ... occurs under the suspension of any direct relationship between cause and effect" (ibid., pp. 72-73).

flux, an array of equally plausible alternative potentialities is formed⁹. 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 actualized, 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 its trajectory.

We feel tempted here to draw a parallel between pedagogic subjectivation and this ‘splitting into’ alternative potentialities prior to the ‘jump’. We recall that pedagogic subjectivation was precisely about conjuring up as-yet-unexplored alternative possibilities. Accordingly, complexity lenses invite counting interruption and pedagogic subjectivation among conditions of possibility for bifurcation to occur, the former through disturbance and the latter through differentiation.

The enaction strand seemingly puts less emphasis on particular critical moments. It acknowledges instead that how interactive spaces respond to disturbances is a function of their own dynamics. “Structural coupling” (Maturana & Varela, 1987, quoted by Fenwick, 2003) thus implies that, if the structural dynamics of one of the ‘partners’ implicated in co-emergence – that is to say, either the interacting elements or the setting in which these interactions take place – are disturbed, this ‘perturbation’ excites responses in the structural dynamics of the other.

Chance versus order and intentionality in relation to novelty

Where, as seen earlier, the Rancierian conception of education foregrounds interruptive acts as contingent (Rancière, 2006, p. 97), fundamentally undecidable (Biesta, 2010, p. 15) and falling under ‘the logic of chance’ (Simons & Masschelein, 2010, p. 597), the emergence strand too ascribes a prominent place to chance. Thus, the principles influencing a given system’s ‘choices’ are not found in its present patterns but in the very dynamics of emergence (Osberg, 2008). Inclusion of chance as an ‘operator’ in these dynamics precludes laws that would explain passage from one order to the next, elucidate what is actualized at bifurcation points and predict the trajectory subsequently followed. For Osberg, therefore, education – as a non-deterministic process of emergence, opening possibilities unthinkable under a former logic – can offer a valuable contribution to democratic practices. Inverting the relationship between democracy and education, she introduces the intriguing concept of “inventionalistic” educational democracy (Osberg, 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. This line of thinking seems to us to hint at the possibility of a reciprocal, mutually re-enforcing relationship between such practices and democratic education. Both would now be endowed with freedom to invent and playfully experiment with the paradox of “the possibility of the impossible” (ibid.). Importantly, given our empirically oriented concern, this would further legitimize our framing experimental fora as potential sites 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 theory’s emphasis on chance in turn raises at least two questions. The first relates to whether it might legitimately be suspected to err on the side of messiness rather than order. We deem it important here to distinguish between what complexity

⁹ The term ‘multi-furcation’ seems more apt at rendering the idea of one initial order splitting into an array of equally plausible, alternative possibilities rather than only two. This notwithstanding, we shall stick to the more generally adopted term of ‘bifurcation’.

implies at the conceptual level and what is considered complex¹⁰ in empirical terms. Under the latter terms complexity lenses indeed invite us to frame multi-layered, multi-dimensional and heterogeneous settings as transient entities and processes contingently bounded by porous and fluctuating boundaries (Kuhn, 2007, p. 169)¹¹. While such framing seemingly privileges messiness, this impression is arguably corrected at the conceptual level. First, as seen earlier, 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, complexity lenses view 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, 1977/1992, p. 72, quoted by Alhadeff-Jones, 2012, p. ii). Elsewhere, drawing an analogy with what he sees occurring in ecosystems, Morin foregrounds the productive role of disequilibrium – a form of disorder – and conflicts as constitutive of new forms of order, both in our ways of thinking and in the way we organize 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 relates to whether complexity’s emphasis on chance leaves much room for intentionality, a dimension already touched upon in relation to the Rancierian conception of education. Critics of complexity are claiming that the logic of emergence leaves humans with little choice other than complying 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). Granted, the emergence strand presents bifurcation as ‘a moment of freedom’ (Osberg, 2010, p. 163), that is, as we understand it, a moment where anything may happen spontaneously, regardless of human intentions. Davis & Sumara (1997, p. 122) re-enforce this impression when they present goal setting as largely escaping our control. For them, goals surface and take shape through interplay between human agents and dynamics inherent to their immediate and wider contexts, often taking them aback. We nonetheless caution against conceding too readily to these critics. We think it worthwhile to examine whether some form of intentionality might not, after all, cohere with the logic of emergence and its notion of bifurcation.

While Osberg (2010, pp. 161-162) touches upon the question of intentionality in the context of democratic politics ‘taking care of the future’, the understanding of education she advocates makes the latter coincide in practice with invention and experimentation of such politics. She starts by reminding us that a teleological and instrumental theory of action does not sit well with complexity theory. No precise, measurable goals can be set for emergent processes¹². For her, even less-focused visions may ultimately be viewed as attempts to control the future and as “denial of the future *in its radical futurity*” (ibid., 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

¹⁰ Since what is ‘complex’ is often opposed to what is simple, it tends to be 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).

¹¹ Since the term ‘system’ tends to posit existence of discrete entities in direct contradiction to complexity-oriented epistemology framing phenomena as part of a fabric of relations (Alhadeff-Jones, 2008, p. 68), some complexity thinkers tend to recommend using this term with utmost circumspection (Osberg, 2008, p. 145).

¹² We see here clear affinity with a Rancierian conception of democratic education dissociating the latter from pre-set objectives.

way” nor “abandon ourselves to the vicissitudes of fate” (ibid, p. 163). Some *ex-ante* envisioning is therefore needed to guide our steps towards the future and to detect opportunities in the present.

In the same stride, however, she proposes a different kind of visions. As the offspring of “sensitive and tentative experimenting”, after listening to “the voice of the future” (ibid.), such visions are themselves subject to the logic of emergence. Although non-focused or diffuse, they are nonetheless endowed with a normative – or affirmative – orientation. They may thus be understood to play a double role. Not only would they help bring into the world ways of doing things considered impossible from the perspective of the past. They would also bring about ways that are *better* than those currently practiced. While admitting that rules, norms or objectives of the past cannot and should not be discarded if used in an open-ended way, Osberg underlines 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 (ibid.) and bring into the world radically new ways of thinking and acting (ibid.) that are also qualitatively and normatively superior to those that came before.

Against this backdrop, despite being tinged with some ambivalence and paradox, the logic of emergence seems to leave some room for intentionality. It allows 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; secondly, through non-teleological, diffuse visions welling up as experimentation unfolds. The latter are assumed to take on “non-normative normativity” (Osberg, 2010, p. 163). We might then venture to establish a sequential linkage between the two kinds of visions: we might consider *ex-ante*, provisional visions as the impetus prompting people to ‘answer present’ to the call of democratic engagement. As for non-focused but nonetheless value-oriented visions emerging as experimental endeavours unfold, we see them as the very fuel sustaining engagement over time. Arguably, the more agents discover along the way that they can ‘make a difference’ by calling forth radically novel and better options for being, living and working together, the greater, it seems, the likelihood of their remaining engaged. We can again illustrate this reviewed notion of intentionality through the case of the OPI. Our first reading of this initiative indicates that its instigators harbored ideas as to what they would like to see happening. It also signals that an initial vision emerged after a gestation of about six months. The logic of emergence would, however, lead us to expect that new ideas and visions relative to entirely different and better ways of governing the commons of the Salish Sea would somehow bubble up as the initiative unfolded.

Directionality of processes of emergence

Another dimension seems to us to qualify further the notion of indeterminacy as posited by the emergence strand. When Osberg (2008, p. 158) invites us to visualize the process of emergence – and hence of education – as a centrifugal process “... forever moving ‘outwards’...”, as shown by figure 3, she seems to us to instill a form of directionality into this process.

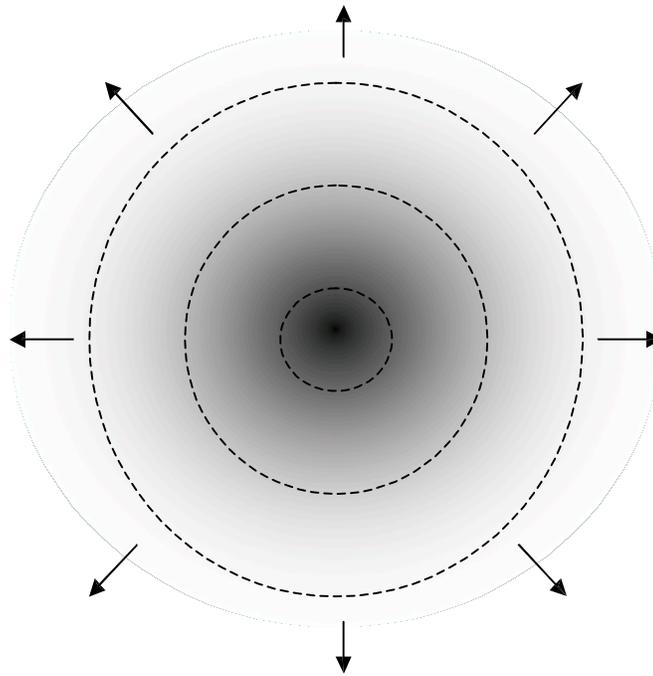


Figure 3: Outward-bound dynamics of the process of emergence
(Graph drawn from Osberg, 2008)

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 incalculable (and wider) possibilities” (Osberg, 2008, p. 149, emphasized by the author). One might say that Osberg supplements and refines here what Rancière and Biesta are pointing out. For the former, new possibilities appear as an existing order or field-of-perception is reconfigured by “putting two worlds into one and the same world” (Rancière, 2004, p. 304). The latter draws attention to “the supplementary ‘nature’ of subjectivation” (Biesta, 2010, p. 13). 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. For example, as a set of more differentiated ideas emerge from the discussions, the overall vision for the Orca Pass International Stewardship Area (OPISA) would not only include a wider and more varied range of options. An entirely different logic would also 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 – potentiality at least – be associated with *irreversibility*. In short, 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 qualifies as educational, no longer would it be enough to look for moments of interruption through acts where individuals or groups rise to their feet and, by means of specific acts, dis-identify themselves from

the existing order by revealing its inconsistencies or wrongs. Nor would it suffice, as under the umbrella of pedagogic subjectivation, for individuals or groups to become aware of their potentiality for inventing ways out of problematic situations. Now we would also need to look for shifts bringing about *higher-order*, qualitatively different ways of thinking. This in turn begs the questions of what such shifts may be understood to imply in relation to democratic education and through what effects they may be expected to manifest.

Manifestation of radical novelty

When introducing the notion of strong emergence, Osberg and Biesta (2007) refer to Morgan's (1923) evolutionary perspective. Yet they cautiously refrain from discussing further what such a perspective might imply when transposed to education. Instead, they choose to associate the radical novelty that strong emergence processes are assumed to generate with the notion of 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 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. For their part, Sumara & Davis (1997, p. 303) interpret education understood as enlarging the space of the possible as implying a move toward increased complexity. Even if all we can do is to respond to immediate contingencies, we may 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 relation to education. Looking at participatory settings as complex educational systems, Davis and Sumara (2006) thus suggest that such systems might end up with cognition or understandings more 'sophisticated' than those initially held by constituent parts. More precisely, these authors 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, 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.

This in turn provides us with a stepping-stone enabling us to refine further the relationship between interruption, pedagogic subjectivation and bifurcation. We propose to understand the first two as occurring at the micro-level of local interactions between individuals or groups within a given space of emergence. Bifurcation, for its part, becomes an event the effects of which will come to expression at the macro-level of this space viewed as one coherent unit of response. Despite this clarification, we are, however, still left with an intriguing question: what properties or patterns might signal 'more sophisticated' or 'more complex' understandings or visions resulting from processes of co-emergence that we would understand to fingerprint bifurcation?

In an effort to offer a reply – however tentative – to this question, we turn to Bateson (1979), Harries-Jones (2002), Bohm (1980/2002) and Morin (1977/2003; 1999). All suggest similar clues as to what properties might be ascribed to complex or – as we prefer to say – 'complexifying'¹³ thought. Contrasting it with fragmented, reductionist and dichotomizing thought, these authors understand the former to reconnect what the latter disjointed (Morin, 1999)¹⁴. Attentive to complementarity – even between seemingly

¹³ Through this neologism, we wish to convey the clear message that we are talking here about properties originating from 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.

¹⁴ Semetsky (2008) reminds us that already Dewey associated more complex understandings with

antagonistic and competing elements (Morin, 1977/2003, p. 80; Semetsky, 2012¹⁵) – this thought is able to capture ‘patterns that connect’ and to position problems in their context(s) (Bateson, 1979).

We found a number of authors to point at increased capacity to embrace heterogeneity by bringing heterogeneous perspectives into productive conversation as yet another distinctive feature of complexifying thought¹⁶. For Morin (1999), complex thought implies departing from monological discourses and a recognition that we are all navigating in a complex matrix of alternative representations or worldviews that might nonetheless be brought into a constructive relationship. This is echoed by Sterling (2007, p. 68), for whom acceptance of multiple realities is the trademark of relational thought. For Osberg (2010, p. 164), entirely new rules are birthed through interplay of otherness or heterogeneity. Finally, when Davis and Sumara (2006, p. 138) see diversity as critical for intelligent action in situations fraught with unknowns, it is tempting to see ability to take advantage of diversity as a feature of more sophisticated understandings.

In light of the discussion above, we propose to understand radical novelty *qua* emergent effect of educational processes, to manifest as two shifts, each with its specific directionality and qualitative characteristics:

- (a) Outward expansion enlarging and renewing the array of differentiated responses to a problem;
- (b) Leaps upward towards complexifying thought linking problems to their contexts and recognizing productive complementarities between heterogeneous representations.

We propose to understand these shifts to be afforded, among other fluxes, by interruptive acts and episodes of pedagogic subjectivation occurring at the micro-level of experimental spaces framed as potential sites of democratic education. These shifts are assumed to become visible at the macro-level of such spaces when bifurcation points or thresholds are reached or crossed.

Concluding remarks

Taken together, the different points we discussed arguably vindicate the proposition that a complexity-informed view of democratic education might fruitfully be tied to a Rancierian conception of democratic education¹⁷. Better still, we claim that the two lines of thinking effectively complement each other in several respects. We found the Rancierian conception to reframe democratic education as an offspring of relatively open-ended engagement in situations deemed arbitrary, unacceptable or unsustainable. We also found it to foreground two critical moments: interruption transforming

capacity to apprehend connections and interrelations.

¹⁵ Departing from authors like Mouffe (2000) for whom heterogeneity tends to translate into agonistic politics with its ‘us/them’ opposition and replacing dualistic opposition by interdependent polar terms, a complexifying way of thinking would thus be attentive to creative tensions and complementarities also between antagonistic or competing claims. 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).

¹⁶ One might venture the idea, albeit cautiously, that by allowing us to eye opportunities for productive, possibly symbiotic associations between heterogeneous perspectives, complexifying thought mirrors in some way dynamics at play in the biophysical sphere.

¹⁷ Far from positioning complexity theory ‘above’ this conception, we follow here Davis and Sumara (2006, p. 4), for whom complexity is an *attitude* bringing new insights to non-complexity theories and traditions while also acknowledging theirs.

individuals and groups into democratic subjects, and pedagogic subjectivation as they become aware of their potentialities to 'make a difference'. The emergence strand posits education as a process of emergence and allows us to introduce bifurcation as a critical event bringing about radically novel ways of thinking and seeing that we now understand to imply more differentiated and complexifying thought. The enaction perspective, for its part, rather than limiting attention to cognitive shifts among individual protagonists or organizations engaged in local or micro-level interactions¹⁸, helps frame what emerges as a macro-level phenomenon pertaining to collectives approached as coherent units. In other words, as we look for conspicuous shifts in ways of thinking about governing marine commons in the case of the OPI, the enaction perspective warrants our focusing on the overall vision that drove this initiative. It also appears particularly appropriate for highlighting "the elegant interconnections of the observed world" (Harris-Jones, 2002, p. 232). 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, 1996) brings it intriguingly close to a worldview still found, among others, in Native North American communities (Little Bear, 2004; Berkes, 2008, p. 275). This perspective 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. It also enables us to see democratic education as a process whereby non-humans, represented through their spokespeople (Latour, 2004), are invited to join in as equal partners helping invent new ways of taking care of the future.

We claim to have made some headway in at least two respects. At the conceptual level, while our discussion of democratic education obviously did not exhaust examination of this composite notion, we nonetheless venture to conclude that we contributed somewhat to a fresh take on it. Our conceptualizing effort brought us to understand this notion as a process of (co)-emergence, afforded among others by two kinds of critical moments and potentially calling forth radical novelty through the event of bifurcation. We furthermore assumed radical novelty to manifest in the form of two shifts: one outward-bound, expanding and renewing the array of differentiated responses to a given problem and the other oriented upwards towards more relational ways of thinking about this problem. We also found complexity to lend support to a conception dissociating somewhat education, notably when related to democratic practices, from external interventions without, however, viewing it as entirely subjected to chance-ruled contingencies. Both complexity strands thus give us license to examine how far individuals, groups and collectives are able to go in tracing their own trajectory and inventing their own history. Taken together, the Rancierian and the complexity-informed conceptions warrant framing as spaces with potential for democratic education collective experiments presenting the following characteristics: as some protagonists call into question ways of thinking, seeing and doing that they consider untenable and as they harness their own potentialities to propose new options, they contribute to calling forth radically novel visions, carried at the level of collectives, of how to improve conditions for both humans and non-humans.

At the practical level, our conceptual elaboration equips us with a heuristic framework for exploring whether, as we initially intuited, the empirical case of the OPI qualified as a space for democratic education as revisited. To earn such status, the OPI

¹⁸ Where a Rancierian conception of democratic education tends to foreground the individual political or democratic subject, as already noted, the enaction perspective is inclined to reframe would-be democratic subjects not as isolated individuals, separated from each other, but entangled in a web of mutual dependence. While not contesting the centrality of the individual level at which all other levels are conflated, it reminds us that individuals are also nested constituents of a series of imbricated, ever wider entities whose boundaries are unstable, fuzzy and above all porous.

would need to display instances of interruptive acts and/or episodes of pedagogic subjectivation during local interactions. More or less concurrently, a vision would be seen to emerge at the macro-level opening up to a wider and more differentiated array of options for governing the commons of the Salish Sea and to reflect a more relational way of thinking about this matter. More concretely, a question we would now be in the position to ask would be this: did the OPI, over time, sow the seeds of a vision that not only brought the two seemingly incompatible logics of indigenous ecological knowledge and Western science to co-exist, but indeed repositioned them as complementary, thereby allowing as-yet unexplored options to become visible? A report explicating how we propose to elucidate this question, still open at the moment of writing, will be presented at another time.

In conclusion, understood in this way, democratic education would contribute to counteracting what Latour (2004, p. 104) calls arbitrary reduction of propositions in the name of simplification and what Bohm (1992) and Morin (1999) call respectively 'fragmentation' and 'disjunction'; it would also buttress the productive potential of heterogeneity. Arguably, helping conjure up more balanced visions of our place in a ceaselessly changing cosmos, when at its best, it 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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