

Eco-Activism Contributions to Social Learning: Drawing from the Turcot Public Debate

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Abstract:

This article highlights the social learning dynamics, issues, and outcomes characterizing an urban transport controversy in which activists played an innovative role, going beyond the project's critique to present a technically detailed alternative, grounded in a collective ethical clarification process. The article then draws on a case study experience and findings to discuss how research in the field of non-formal eco-citizenship education can contribute to the reinforcement of social movements and the transformation of democratic institutions.

Résumé:

Cet article met en exergue les dynamiques d'apprentissage et les enjeux (éthiques, épistémologiques) qui ont caractérisé une controverse à propos d'un méga-projet de transport routier en milieu urbain. Dans le cadre de ce long débat, des militants et militantes ont joué un rôle innovant en dépassant la critique du projet initial pour y proposer une alternative techniquement détaillée, fondée sur des principes de justice sociale et de responsabilité environnementale convenus collectivement. À l'appui des résultats de cette étude de cas, l'auteure discute d'avenues de recherche dans le champ de la formation relative à l'écocitoyenneté, qui puissent contribuer au renforcement de mouvements sociaux comme à la transformation d'institutions démocratiques.

Keywords: activism, eco-citizenship education, environmental controversies, social learning, social transformation, urban transportation, Turcot interchange

Mots-clés : militantisme, formation relative à l'écocitoyenneté, controverses environnementales, apprentissage dans l'action sociale, transformation sociale, transport urbain, échangeur Turcot

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Eco-citizenship education is receiving an increasing amount of attention within the environmental education field of study and intervention. Although an important trend in eco-citizenship education is eco-friendly practice, a growing group of scholars and educators are instead aiming for the endogenous development of eco-political knowledge and competencies. From this perspective, citizenship

is considered as a lifelong learning process, embedded in community projects, collective actions, and activism. Through this critical and humanistic prism, eco-citizenship can be viewed as an *auto-* and *co-*determination process, informed by reflective explorations of one's inner landscape, relationships with others, and the environment.

Social movements about socio-ecological issues are known as rich learning contexts (Biddix, Somers & Polman, 2009; Brière, 2016; Orellana & Marleau, 2015; Walter, 2007). The learning processes and outcomes characterizing the interactions between activists, government representatives, project instigators, and other stakeholders of an environmental controversy are also of great public interest. These experiences showcase differentiated realities within a given debate. Overall, deliberative contexts have the potential to foster important transformative learning. In such conversations, ethical, political, and epistemological issues are raised and faced, challenging everyone's viewpoints. Debates then create unique opportunities for different interest groups to reflect upon and evolve in their understanding of a problem.

In the following, I draw upon a case study of the debate about Montreal's Turcot interchange reconstruction to demonstrate ways in which research on eco-activism and public debates from a collective learning viewpoint can contribute to social change and new, non-formal educational perspectives. After having briefly outlined the case, the objectives and structure of the study, and some of its striking results, I discuss ways in which such types of research can contribute to the enhancement of social movements and nourish collective reflection on the modernization of democratic institutions.

The Turcot Interchange Reconstruction Public Debate: Five Years of Controversy, Mobilization, and Alternative Solutions Building

The Turcot interchange—known as the largest highway infrastructure in Canada—connects two major highways a few kilometres from downtown Montreal, Quebec. It is located in the working-class districts of Saint-Henri, Côte-Saint-Paul, and Ville-Émard, where the education levels, socio-economic status, and life expectancies are lower than the city's average, raising environmental justice concerns among social activists and public health officials. Built in 1967 (Figure 1), the Turcot was ready just a few days before the beginning of Montreal's International and Universal Exposition, known as Expo 67. With such global exposure, both the new interchange and Expo 67 became symbols of the nation's modernization, know-how, and potential. Forty years later, around 2004, the interchange's once-futurist structure was showing significant signs of aging. According to experts' assessments, it needed to be entirely replaced.



Figure 1. A section of the Turcot interchange (1967). Source: *Bibliothèque et Archives nationales du Québec* (photograph: Gabor Szilasi)

In the time between Quebec's Ministry of Transportation (MTQ)'s public announcement in September 2007 about its intention to rebuild the interchange and the launching of the definitive project in April 2012, community organizations, universities, and public institutions (the MTQ, the City of Montreal, Montreal's Public Health Board and Quebec's Public Hearing Department) hosted a succession of clarification and debating opportunities surrounding the Turcot's reconstruction, all parts of what I will refer to as "the Turcot debate" in this article. In these formal and non-formal deliberative spaces, participants agreed on reconstructing the interchange, understanding the major security hazards caused by the aging of the structure; however, activists would eventually argue that part of the structure was still in good condition and could be preserved within the reconstruction project.

In fact, controversy built up about the ways in which the project could be oriented. On the one hand, security and logistical concerns were put forward by the MTQ to legitimate a conservative approach to the reconstruction; the ministry was planning to rebuild for automobile transportation only, improving the structure's fluidity and, consequently, increasing daily traffic potential. On the other hand, environmental priorities, public health issues, and social justice pre-occupations were advanced by social activists, academics and Montreal's Public Health Board to defend the necessity of the project's rebuild being innovative and to advocate reconstruction scenarios based on such values.

In the Turcot debate, advocates for an innovative rebuild and other critical participants asked questions such as: Could the project include a light rail train in the east–west axis? With this commuting initiative, could the capacity of the interchange structure be reduced? Could certain sections of the interchange be buried to reduce stress on the environment (air pollution, noise, physical barriers) and free land for the development of neighbourhoods? What would be the best way to integrate the rebuild into the existing urban environment? How could compulsory purchases and enclosing constructions be avoided? How could the rebuild ensure that Montreal’s transportation plan orientations and Quebec’s policy on greenhouse gas emissions would be respected? The Turcot debate induced a global inquiry dynamic where MTQ officials were challenged and stakeholders were inspired to mobilize the knowledge the various participants brought into the public space.

From a social learning perspective, this debate was interesting in at least three ways. First, activists were demonstrating that the planning process had been started in a reverse order. The initial civil society protest (2007-2009) actually highlighted an important pitfall in the consultation process, criticizing the MTQ for having already chosen the project’s parameters before the population even knew about the Turcot’s security problems. In fact, the MTQ had previously worked on five different reconstruction scenarios and chosen one of them. Its officials were strictly planning on informing the public of upcoming roadwork, as if they were working on a small repair project in some quiet territory. They did not consider consulting Montreal’s citizens on the principles that should guide the huge Turcot reconstruction project, which would happen in the middle of the city. Shocked by the MTQ’s way of planning, citizens, local associations, NGOs, and a few political parties formed a coalition, Mobilisation Turcot, to discuss principles the new interchange should respect. Later, the coalition demanded that key conditions be agreed upon in the public space. Without necessarily realizing it, the coalition had practiced the “omnilogue” deliberative ideal (Rawls, 1995), a model in which the citizens, and not the experts, who primarily determine a project’s foundations—its core values.

The second striking feature of the Turcot debate is the way in which it opened a diversity of deliberative spaces. Early on, community organizers invited various specialists to meet with local citizens, representatives, and social workers. In these monthly meetings, participants would ask questions to the invited experts in order to build a comprehensive understanding of the many ecological, urbanistic, sanitary, and economic issues raised in this complex debate. These events also served as preparation sessions for the upcoming public audience, to be held in 2009 by Quebec’s Public Hearing Department, where a record number of submissions were presented. In addition to these meetings and hearings, three universities in Montreal organized forums and design charrettes. The Montreal Public Health Board also hosted a workshop where international specialists presented inspiring urban highway requalification projects to local decision makers

and NGOs involved in the debate. In all of these deliberative spaces, participants could contemplate the reconstruction project and its possible outcomes and consequences from outside perspectives, thus decentring their own viewpoint and providing new inputs to challenge their initial frames of reference.

The interactions within these diversified deliberative spaces later led to creative public discussion about alternative reconstruction projects, which I consider to be the third striking feature of the Turcot debate. In 2010, the City of Montreal and a municipal opposition party, *Projet Montréal*, each suggested a global vision of what could be an innovative alternative to MTQ's reconstruction project. That same year, *Mobilisation Turcot*—along with a few Concordia University professors and students—launched, in the public space, a detailed normative and technical proposal called *Turcot 375*. This proposal was building from *Mobilisation Turcot's Statement of Principles* (Figure 2).

The government's plan is to build a new highway right alongside the existing elevated structure. While nobody denies that the Turcot Interchange is in need of repair, the proposed lower structure will have a negative impact on public health, on our environment and on the socio-economic development of the South-West. Not only does this project lack vision, it will endanger Montrealers' health and well-being:

- Residents of the South West borough will be even further exposed to the negative effects of automobile generated air pollution from a lower highway structure;
- The project will further contribute to greenhouse gases; No attempt is being made to reduce car traffic;
- Hundreds of people will be expropriated and their homes torn down: A community will be destroyed;
- A walled highway will fence in many South West communities, effectively stunting their long term growth and socio-economic development.

We therefore demand that the government return to the drawing board, to develop a plan that will have a beneficial impact on the environment and on the population's quality of life. The following objectives should be integral elements of any future plan:

- The reduction of negative health effects upon neighboring communities;
- The reduction of automobile traffic flow and increased investment into public transportation alternatives;
- The opening of enclosed communities;
- Preservation of existing affordable and low cost housing units;
- Special economic subsidies to the communities most impacted by the negative effects of the major work during the construction period.

Other cities around the world have managed to conceive and build similar grand projects that do respect these kinds of goals. Here in Quebec, it is possible to replace Turcot within a framework of sustainable development and of respect for the environment and the local population. Let's make it work!

Figure 2. *Mobilisation Turcot's Statement of Principles* (2008)

Turcot 375, which had the same budget as MTQ's project, promoted sustainable mobility along with integrated transportation and town planning. It would have reduced Turcot daily traffic by 40% (whereas MTQ's plan would increase daily traffic by 17%) and substantially diminish the size of the infrastructure. To provide local car users with new modal shift possibilities, *Turcot 375* was proposing a tramway, collective transportation on highway reserved lanes, and a rail shuttle connecting downtown Montreal to the airport. Additionally, *Turcot 375* would have reduced the interchange capacity and thus downsized it, which would have freed up economic resources for other innovative transportation solutions. Finally, Mobilisation Turcot's proposal avoided all expropriations and integrated an urban park proposal. It received support from the Montreal Environmental Regional Council, Montreal Public Health Board, and Quebec's Engineers Network, among others. However, the MTQ did not include *Turcot 375* features in its planning activities.

In 2012, activists were still pressing the government to substantially change the project. Since 2007, MTQ's budget had continually risen. Their initial budget of CA\$1.5 billion had increased to CA\$3.7 billion—a phenomenal rise that many Quebecers demanded explanation for given the absence of notable innovation. In this context, *Turcot Cure Minceur* [Slimming Cure for the Turcot], Mobilisation Turcot's final revised proposal, highlighted a number of the interchange's structures that were reportedly in good condition and which could be saved from demolition. Thus, the proposal advanced a reconstruction project sequencing that would allow for budget cuts and disturbance reduction. The tramway and rail shuttle that were part of *Turcot 375* were no longer present in the *Turcot Cure Minceur* project since activists were acknowledging MTQ's refusal on these aspects and recent steps towards a definitive plan. Nevertheless, Mobilisation Turcot still aimed to influence MTQ's officials in improving their plan. Unfortunately, Mobilisation Turcot's later efforts did not have much impact on the project. Activists eventually concluded that other stakeholders were being more effective than Mobilisation Turcot in influencing the government's decisions about how to proceed with the Turcot project ¹.

The Turcot Debate as a Learning Journey

While studying this controversy, I focused on the learning dynamics emerging from the conversations and conflicts that involved a range of individuals, groups, leaders, and stakeholders. More specifically, I investigated the ways that understanding was developing regarding the different eco-social realities coming into play. I studied the meaning citizens were giving to their commitment in the Turcot debate, the process by which they had clarified that meaning and the knowledge they had developed through that whole eco-citizenship experience. I also highlighted and analyzed the ethical, epistemological,

and political issues characterizing these learning and deliberative processes. Finally, I looked for indications of personal and eco-social transformation that were likely attributable to the Turcot debate.

Theoretical, Epistemological, and Methodological Overview

This qualitative research mobilized interpretive and critical epistemological standpoints and drew from three complementary methodological approaches: phenomenology, ethnography, and grounded theory. An interdisciplinary theoretical matrix was built for this case study, drawing on elements from sociology, political philosophy, and, primarily, education researchers' contributions to the following areas: continuing education, environmental education, place-based education, democratic education, and critical pedagogy. As a result of considering these methodological and theoretical influences in my study, I developed the "theoretical sensitivity" required to successfully run the field inquiry (Luckerhoff & Guillemette, 2012) and nourish the theorization process. The theoretical framework developed throughout the research process and considered: 1) the inner, introspective dimension of learning; 2) its collective dimension, lived through deliberative activities and public space interactions; 3) eco-citizenship as a particular form of relationship to the environment; and 4) epistemological concerns raised in the context of socio-ecological controversies. Drawing from humanistic and socio-constructivist perspectives, the first three sections of this matrix acknowledge the essential relationships sustaining personal and social development, i.e., the relations to the self, others, and the environment (Pineau, 1992; Sauvé, 2001). The fourth section of the framework intersects with the first three. It has a more critical orientation, exploring how stakeholders may consider the various types of knowledge involved in an environmental debate and analyzing the possible consequences of these epistemological perspectives in terms of democratic dynamics and learning possibilities.

Four data collection strategies were used in this study: 1) semi-structured individual interviews with key actors in the debate; 2) semi-structured group interview and observation with the Mobilisation Turcot strategic committee; 3) analysis of documents, and 4) non-participative observations of formal and non-formal deliberative experiences, as well as of protests, press conferences, and other related events. Internal validation strategies appropriate to qualitative research, mainly triangulation and data saturation, were applied throughout this process, and relational rigor criteria (Robottom & Sauvé, 2003; Savoie-Zjac, 2011) guided the research. Among these criteria were the formulation of research questions that genuinely interested the participants, the cultivation of a reflexive stance, the demonstration of a transparent attitude about the limits of the research, and the enhancement of participants' contribution to the research (e.g., quoting the participants with their names, upon previous authorization). Data analysis mobilized two main strategies: data questioning and conceptual category building (Paillé & Mucchielli, 2012). While the former strategy

was essentially used to describe the different aspects of the case I studied, the latter served the theorization process related to each of the research project's objectives.

Conservative Outcomes, Yet Great Apprenticeships

Despite the intensive, creative, and sustained commitment of activists as well as other specialists and governmental professionals who shared their visions and expectations, the brief case illustration provided above reports quite a sad story if we consider the direct outcomes of this six-year-long debate. When the definitive plan was launched by the MTQ, most citizens involved shared the impression of having “lost the battle”, as well as having lost their time and their faith in democratic institutions. Many were profoundly sorrowful. Up until the time of the Turcot debate, South-West district NGOs and community associations had many success stories about their activism. As examples, they had won investments and regulations for affordable housing and forced the government to abandon a huge casino project.

The Turcot debate had also challenged the community network spirit. On one side, people had built new, innovative and effective bridges of collaboration, but on the other, they had struggled to agree on leadership initiatives, which had left some people feeling not only distanced from the process but also hurt. Healing would take some time. Interestingly, a few activists reported that participating in this study, particularly in the group discussion session (interview), was a restorative event in the wake of their disappointment.

In this context of discouragement, approaching the debate as a social learning experience presented the participants with an empowering potential and the possibility of a reinvigoration of faith in the utility of, not to mention will for, political commitment. To approach it as such, I focussed on participants' contributions to the collective inquiry; identified positive results going beyond the spectrum of the Turcot controversy; and highlighted hints of peoples' own transformation journey throughout the deliberative process.

Thus, the study clearly showed the outstanding contribution of activists and politically active specialists to the deepening and comprehensive understanding of the problems relating to the Turcot reconstruction. Without these experiential, contextualized, ethically-grounded, and multidisciplinary inputs, many facets of the issues considered would not have surfaced. The first concerns brought into the debate—synthesized in Mobilisation Turcot's (2008) *Statement of Principles*—raised important environmental justice issues. When the original, acclaimed construction project took place in the 1960s, it increased burdens on already disadvantaged working-class neighbourhoods, where industrial shops stood alongside workers' houses, gardens, and amenities. Forty years later, community associations were much more organized and actively claiming citizens' rights for healthy environments, quality of life, and fair housing conditions. Those protesting MTQ's plans for the interchange in the early days of the

new millennium decried the government's plan to repeat the mistakes of the initial project. Activists called for wise planning, linking local realities and needs with more global concerns (such as climate change and socio-ecological consequences of petroleum dependency), and charging the government with a duty to be innovative in light of past mistakes and present international concerns.

Consequently, the contributions of the activists and politically active specialists initiated a much broader debate. Its overall question had become "What place are Montreal's citizens willing to give to car transportation in the 2010s"? Soon, activists' inquiries and alternative design proposals led to the identification of an important logistical and conceptual problem regarding transportation organization in Montreal's metropolitan region; there was neither regulation nor a responsible institution to oversee global, concerted planning. Instead, many organizations shared a range of responsibilities. Even MTQ admitted that their road transportation and collective transportation sections generally worked in silos (Dompierre, 2012). This lack of systemic thinking was challenging responsiveness to citizens' modernization desires. It was also impeding comprehensive restructuring towards an energetic transition that would foster social justice and more ecological transportation practices and systems.

Alongside the Turcot mobilization, citizens developed and consolidated impressive knowledge as outlined in Table 1. As this table demonstrates, the learning outcomes of Turcot public debate commitments are notable. In fact, many people involved in the debate became super citizens in the process; they developed systemic conceptualization abilities, critical thinking skills, autonomous and collective ethical questioning abilities, public speaking competence, creative capacities, and so on. And more interestingly, I noted transference of this knowledge into future professional or activist endeavours. Having become politically invested in the Turcot controversy, many citizens were inspired to engage in other local or regional eco-political debates. For instance, two of them even ran for municipal political parties and one was elected as a progressive city councillor.

Contributing to Social Movement Reinforcement

The results presented in Table 1 support and add to previous findings about competencies building in eco-political involvement (Biddix et al., 2009; Sauv e, 2013; Sauv e & Batellier, 2011). Theorizing on such learning experiences, systematizing them, and disseminating their important collective outcomes can certainly contribute to citizens' group empowerment. This can happen from external recognition facilitation (i.e., the essential contributions of decision makers and stakeholders can be included in external research that endorses them) as well as from activists' participation in critical studies. The reflexive exercises to which participants would typically be invited in such research offers a rare assessment opportunity. In fact, Turcot debate activists reported lacking

Factual and conceptual knowledge <i>(connaissances)</i>	Know-how <i>(savoir-faire; cognitive, strategic and practical abilities)</i>	Know-how-to-be <i>(savoir-être; knowledge relating to attitudes and values)</i>	Integrated action-knowledge <i>(savoir-agir; integration of the 3 previous forms of knowledge)</i>
<ul style="list-style-type: none"> • Comprehension of the local and global eco-social realities forming the issue • Increased understanding of political functioning • Grasping of stakeholders' organizational cultures • Understanding of social action leverages • Understanding of social inertia forces 	<ul style="list-style-type: none"> • Refined reading of power dynamics • Critical investigation/ holistic characterization of stakes and issues • Systemic analysis of megaprojects • Valorization of previous activist learnings • Strategic planning for participation in formal deliberation spaces (procedural knowledge) • Communicational and newsworthy competencies 	<ul style="list-style-type: none"> • Resourcefulness, audacity • Perseverance, self-confidence • Modesty, humility • Dialogical attitude, decentring capacity • Broad openness to learning • Resilience, adaptability to changing conditions • Citizenship "vigil" • Collective building of an axiological anchoring 	<ul style="list-style-type: none"> • Intervening in a conflictual context • Arguing in the public space • Developing and modulating political strategies • Rallying key resource persons • Livening up and moderating a mobilization • Organizing deliberative spaces • Collaborating for the common good <ul style="list-style-type: none"> - Adapting one's role - Self-questioning - Trusting mobilization partners

Table 1. Eco-citizenship knowledges developed in the Turcot controversy.
 Source: Brière (2016, p. 219), using Lucie Sauvé's categorization (2013).

time for retrospectively considering, with partners, the meaning of their commitment, the strategic choices they made, and their main realizations. What were their deep motivations to get involved? What were their first understandings of the issue? How had it evolve? What were the successes? What could have been done differently? What had been learned during the journey? Such a reflexive exercise, realized during this study's interviews, showed very interesting learning outcomes; participants observed it permitted them to acknowledge how much they had learned. During these interactions, learning cycles were thus completed. Such reflective exercises have great potential for self-esteem enhancement and empowerment.

Another way research on social learning within environmental controversies can facilitate social movement reinforcement is through considering a given action's possible influences on the apprenticeship of individual activists as well as future deliberative processes and debates more generally. Social transformations often need time. In the Turcot case, activists looking strictly at MTQ's final plan to assess the outcomes of their involvement concluded they had failed to bring about change. However, by considering the bigger picture with an eye for

the appearance of medium term learning outcomes, one can formulate quite a different interpretation of the activists' efforts.

In fact, the Turcot controversy catalyzed the first Montreal public debate on transportation issues. It started with analyzing the Turcot project, but it evolved to the point of questioning the whole metropolitan transportation network's functioning. Consequently, and as many of its actors acknowledged, the Turcot debate genuinely formed collective intelligence about metropolitan transportation issues and possibilities. Drawing from these deliberative outcomes, the 2012–2017 *Metropolitan Land Use and Development Plan* (Communauté métropolitaine de Montréal, 2012) integrated actions for the densification of suburbs and transit-oriented development, upon an extensive consultation hosted by the Montreal Metropolitan Community and involving most of the Turcot debate's stakeholders, among others. Also, in 2015, the City of Montreal launched an innovative, independent consultation process aiming to identify strategies for Montreal's contribution to international targets for the reduction of greenhouse gas emissions. In 2016, a large-scale light rail transit system project, the *Réseau express métropolitain* (REM - Metropolitan Express Network), was announced to serve Montreal's island and shores, with 24 stations and 67 kilometres of tracks. The REM construction work started in 2019 and is planned to finish by 2023. This project considers two major elements of *Turcot 375's* plans: it offers a collective, low emission transportation solution for West-Island commuters and a rail-shuttle between downtown Montreal and the airport. Finally, the provincial *Loi sur l'Autorité régionale de transport métropolitain*, (adopted May 2016) regulated an important reform for Montreal metropolitan transportation planning and coordination. It allowed for the creation of a regional metropolitan transportation authority, responsible for this territory's entire transportation network. This measure also addresses concerns raised in the context of the Turcot public debate.

Reflecting on Public Hearing Institutions from a Social Learning Perspective

Highlighting the belated positive outcomes of this extensive controversy can nourish optimism and faith in citizenship participation. Nevertheless, not all Turcot deliberative contexts appeared to possess the same learning potential. As we saw above, the main civil contributions and collective learning happened outside of the formal deliberation institution responsible for the inquiry, even though it is through the initial stages of this regulated process (i.e., mandatory information sessions) that activists and other stakeholders were informed about the project and started organizing their mobilization.

Doing a systematic literature review on social learning in the context of environmental controversy, I was surprised to find that very few studies to date (e.g., Jakobsen, 2006; Sauvé & Batellier, 2011; Sinclair & Diduck, 2011) had

investigated social learning's limiting factors. A significant amount of research has actually focussed on social learning processes as well as knowledge and competencies developed (for instance, Bauer, 2001; Pahl-Woslt, 2006; Schusler et al., 2003), but the barriers to learning were rarely considered.

In my study of the Turcot debate, I decided to begin to fill this gap by investigating the epistemological, ethical, and political issues that characterized the controversy. As might be expected, an impressive number of concerns were thus underlined. Among those relating specifically to the formal deliberative space configuration are its lack of accessibility and the strong valorization of "expert," specialized knowledge.

Many scholars (for instance, Leff, 2004; Lowan-Trudeau, 2019; Wals et al., 2013) working on socio-ecological controversies call for the recognition of different forms of knowledge—scientific, indeed, but also situated, critical, experiential, embodied, and Indigenous, among others—in public discussions of critical matters. I also appeal for a dialogue between those different and complementary ways of approaching our common environmental challenges, characterized by conceptual, ethical and praxeological complexities. In this sense, I believe we need what Virginie Albe (2009) has called knowledge "ecologization." Yet, it appears that democratic institutions such as Quebec's Public Hearing Board are not amenable to such hybridization.

The questions studied within the Quebec Public Hearing Board's setting are generally approached through a fairly narrow lens; the project's technical feasibility, along with the associated environmental and sanitary risks, remain the focus of discussions. This process favours and fosters, above all, promoters' and experts' specialized knowledge. In this context, citizens are not considered as contributing to knowledge construction, but rather as sharing opinions and worries. How could citizens' competencies and conceptualizations find more legitimacy in formal deliberation settings? This is an area where environmental education practitioners and researchers alike could definitely contribute.

Connected to the limited conception of what can make for legitimate knowledge in a deliberation process is the question of various forms of public communication finding recognition in the unfolding of environmental controversies. On this matter, the results of my case study align with analyses by Sharon Krause (2005, 2008) and Jürg Steiner (2011) of the idea that public deliberation founded exclusively on rational communication and reasoning—grounded in codified knowledge mobilization—negates humans' emotional realities as core initiators of learning and commitment.

In the Turcot case, citizens decided to inquire about MTQ's project because they were moved by strong feelings of fear, indignation, and anger. They became involved in the debate because of their strong desire for social and environmental justice. It is from these initial emotional experiences that they later gathered information and clarified their perspectives (values, collective wills), leading to their drafting of a *Statement of Principles* (Mobilization Turcot, 2008).

This process eventually led to them wanting to deeply understand the city's transportation issues and to find solutions based on the values they had clarified together. From an eco-citizenship education perspective, what has been called the "NIMBY syndrome" (Not in My Backyard) is then not a burden; it is a crucial step for collective reflection about the common good. Citizens sound the alarm for what, from a socio-ecological equity perspective, should not be accepted anywhere (Sauvé & Batellier, 2011).

In this idea of recognizing emotion at the onset of essential social learning, deliberative settings could give much greater importance to citizens' "narrative intelligence" (Hansotte, 2005). Narratives actually mobilize affective, cognitive, and conative processes (Clark, 2010). They can draw from an ontogenetic perspective, they can underline important relationships (e.g., special attachment to a neighbourhood), and they can bring important reflective components to a discussion, whereas a strictly rational analysis of facts, constraints, and possibilities cannot provide this kind of considerations.

Moreover, many citizens do not have either the time, the communication (including reading) skills, or the academic background to participate in debates as formulated by deliberation theorists or formalized in most of our democratic institutions. Rational deliberation has its virtues, but also presents important limitations. Other forms of public communication—I briefly mentioned narratives, but many should be explored, including Mike Klein's (2016) "artistic deliberation"—could certainly complement rational discussion about systemic socio-ecological equity issues and, more globally, the multitudinous realities making up essentially complex environmental controversies. Adapting formal deliberative settings by diversifying forms of communication would most likely contribute to the accessibility of these processes as well.

Conclusion

Eco-political civic actions are demanding and challenging, yet such experiences lead to essential social learning. The Turcot case study shows impressive learning outcomes in terms of personal empowerment as well as social transformations (albeit belated).

My hope is for more research to support initiatives fostering different forms of communication as well as knowledge hybridization within formal deliberative spaces like public hearing settings. This area of investigation—which interrelates epistemological, educational, and political concerns—addresses an important societal issue; it promotes exchange and discussion strategies that can contribute to social inclusiveness, creativity intake, and environmental justice, all with the aim of promoting a learning society. Now that "social acceptability" (Batellier & Maillé, 2017; Fournis & Fortin, 2017) is becoming a prominent governing value and a criterion for the approval of development projects, and given all the issues raised in the public sphere on that matter, there is an obvious need

for research on the modernization of participative processes grounded in both theory and fieldwork.

Notes

- ¹ The “black box” of decision-making is not easy to access, and since lobbying dynamics do not take place in the public sphere, they were outside the scope of this study, which focussed on social learning in formal and non-formal deliberative settings.

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