Nadine Ijaz and Paige Mawson

Cultivating a Jewish Eco-Education Framework: The Toronto Heschel School's Teaching and Learning Garden

Abstract

Over the last century, global food systems have increasingly shifted towards a scientific, input-based industrial paradigm whose adverse ecological impacts are well documented. In response, global agricultural movements, such as the agroecology movement, have sought an integration of contemporary science and indigenous agricultural knowledges. Scholars in the field of Jewish ecology similarly propose that biblical Hebrew scripture may provide a framework for thinking about, and acting upon, issues of ecological sustainability in agriculture. In educational settings too, learning about ecology is increasingly approached in an intimate and tangible way in the form of school garden programs. In this work, we highlight the case of the Toronto Heschel School, a Canadian Jewish day school for children in which a Teaching and Learning Garden fosters student learning on ecology and their Jewish identity in tandem. Reporting the thematic results of qualitative interviews with two educators and five alumni from the Heschel School, this study highlights key similarities and differences between this school's garden program and those taking place in secular school settings. Like secular school gardens, the Heschel program implements experiential, interdisciplinary learning activities within a scientific ecological knowledge *(SEK) framework. That said, the Heschel program supplements and deepens these SEK activities with* traditional ecological knowledge *(TEK) rooted in Judaic traditional teachings. The resulting educational outcomes appear at once universally applicable while specifically relevant to the Jewish identities of learners.*

Résumé

Au cours du dernier siècle, les systèmes alimentaires mondiaux ont eu tendance à évoluer dans la direction d'une approche scientifique fondée sur un paradigme industriel dont les impacts écologiques néfastes sont bien documentés. En réponse à ce problème, les mouvements agricoles mondiaux, dont le mouvement agroécologique, ont cherché à intégrer la science contemporaine et les connaissances agricoles autochtones. En particulier, certains spécialistes du domaine de l'écologie juive croient que la Bible hébraïque puisse fournir, à son tour, un cadre théorique et pratique permettant de favoriser la réflexion et l'action eu égard aux problèmes liés au développement agroécologique durable. En milieu scolaire, les éducateurs tendent à enseigner l'écologie de manière concrète et dans un cadre intime, et ce en recourant à des programmes centrés sur les jardins pédagogiques. Dans le présent article, nous examinerons le cas de l'école Heschel de Toronto, une école juive canadienne qui a recours à un jardin pédagogique dans le but d'amener les élèves à poursuivre un apprentissage axé sur l'écologie et l'identité juive. En se basant sur des entrevues qualitatives réalisées avec deux éducateurs et cinq anciens élèves de l'école Heschel, notre étude mettra en évidence les similitudes et les différences principales entre le

programme de jardin de l'école Heschel et les programmes des écoles laïques. À l'instar des jardins pédagogiques laïques, le programme de l'école Heschel propose des activités éducatives qui encouragent une forme d'apprentissage de type expérientiel et interdisciplinaire fondée sur des savoirs écologiques scientifiques *(SES). Toutefois, le programme de l'école Heschel se distingue des programmes laïques en complétant et en approfondissant cet apprentissage en recourant à des* savoirs écologiques traditionnels *(SET) ancrés dans la tradition juive. Or, il semblerait que les résultats scolaires qui en découlent soient, à la fois, universellement applicables et spécifiquement pertinents eu égard à l'identité juive des apprenants visés.*

Across the globe, and in North America in particular, industrialized agriculture is a driving force in an impending ecological crisis. A large proportion of global food is grown in large scale "agribusinesses" that are heavily reliant on fossil fuels, genetically engineered crops and accompanying chemical fertilizers, herbicides, and pesticides (Lin et al., 2012:70; Horrigan et al., 2002:445; Chiappe and Flora, 1998:374). Industrial agriculture has been strongly associated with water and soil degradation, a decline in microbial and plant biodiversity, and ultimately with harmful climate change. Climate change, as Wheaton and Kulshreshtha (2017) have pointed out, threatens to destabilize food systems' reliability across the globe. How to create ecologically and socially sustainable food systems is, therefore, an urgent issue of global concern.

"Agroecology" is increasingly proposed as a viable alternative to the industrialized agricultural paradigm that may feed large numbers of people while restoring ecosystems. Agroecology is a low-input, small-scale, highly diversified mode of food production modelled on traditional/indigenous agricultural systems aimed at "mimicking nature" in their design (Altieri, 2004:36–37). La Via Campesina "an international alliance of peasant and family farmer organizations" (Martinez-Torres, Elena and Rosset 2010:170) is agroecology's most prominent global voice, promoting modes of farming that preserve traditional knowledge and safeguard food sovereignty. As a "knowledge-intensive (rather than capital intensive)" agricultural method (Holt-Giménez and Altieri, 2013:92), agroecology represents a "paradigm shift" (Chiappe and Flora, 1998:373) in which industrial agriculture's exclusionary reliance on mechanistic *scientific ecological knowledge* (SEK) shifts to value *traditional ecological knowledge* (TEK). In this context, "traditional" knowledge refers to ways of knowing that are "time-tested and wise" (Berkes 2012:4). This work conceptualizes TEK to address 'social and spiritual' considerations, including issues of social justice, alongside tangible ecological approaches.

As Kimmerer (2012) notes, SEK and TEK are not mutually exclusive; rather, they may synergistically co-exist and inform one another. It is not only in the field of food production that TEK and SEK have been applied with the aim of helping to transform industrial agricultural systems. For instance, the international 'Slow Food'

movement seeks to proactively 'prevent the disappearance of local food cultures and traditions, counteract the rise of fast life and combat people's dwindling interest in the food they eat' (Slow Food, 2015) through a wide range of educational, agricultural, political and gastronomical activities that exemplify the ways in which TEK and SEK may intersect. In recent decades, many schools across North America and Europe have introduced on-site 'school gardens' as a means of providing young students with an ecological education; as we discuss further on, the primary pedagogical approaches in such gardens may be characterized as predominantly informed by SEK, despite their hands-on, grassroots character.

In this work, we examine the case of the Toronto Heschel School's Teaching and Learning garden, in which SEK and Jewish TEK fruitfully co-exist with the aim of educating children with the skills, knowledge, and tools to contribute to restoring sustainable ecosystems while enacting the principles of their faith. To better frame our study methods and findings, we present some theoretical principles from the field of Jewish ecology, and an overview of the pedagogical approaches evident in the school garden movement.

Jewish Ecology: Theoretical Underpinnings

Beginning in the 1960s, a small group of Jewish scholars sought to interrogate the connections between environmentalism and their religious practice. At the heart of the Jewish ecology field that emerged was a scriptural debate over Genesis 2:15, in which God charges Adam and his descendants with responsibility over the Garden of Eden (Ehrenfeld and Bentley, 2001; Davis, 2009). Although this passage is often understood to substantiate humans" dominion over the planet's resources ("you shall till the earth"), competing translations and interpretations ("you shall keep/observe the earth") destabilize this perspective, suggesting a role for humans as reciprocating *stewards* rather than productionist *masters* of the land. Contemporary agriculture's productionist ethic of dominion, Davis (2009:32) argues, is at odds with the overall ethic of Jewish scripture, in which a concurrent obligation to work the land while preserving and protecting it are expressed as "two elements of human vocation."

Applications of Jewish ecological principles may be seen in such examples as *Shmita* (a sabbatical year for the land), dietary prohibitions, and Jewish burial practices. *Shmita*, the practice of allowing the land to lie fallow every 7th season, during which those in need are permitted to eat from whatever grows, unites environmental reverence and social justice principles. Indeed this agricultural extension of the *Shabbat,* or Sabbath concept—outlined (among other places) in Exodus 23:10-11—lays the groundwork for a "redistribution" of food and land resources, while recognizing the land's need for replenishment after human use (Krantz, 2016:4).

Jewish ecologists' characterization of the "dialectical situation" of stewardship vs. mastery in human life is aligned with—and in some cases informed by—the "Radical Amazement" theology of Rabbi Abraham Joshua Heschel (e.g., Schwartz 1998:96). Heschel's theology is marked by its emphasis on a fundamental paradox embedded in human experience: as reverent *observers* of the natural world, humans must understand ourselves as separate from other creation; as responsible *stewards* of the land, we must also understand ourselves as intrinsically connected to, and part of, all creation. "Insight" into this paradox, Heschel teaches, is "always accompanied by surprise" (Davis 2009:15), as humans negotiate the mysteries of the unexplainable world at "a cosmic frontier, between terrestrial and surreal realms of existence" (Cohen, 2001:75). For many Jewish ecologists, Rabbi Heschel's theology—which demands a love for the *whole* of creation as the means of loving God (Kaplan, 2002:415–420), provides a framework in which to negotiate "reverence and use in our relationship to nature" (Swetlitz, 1998:249).

Another principle that some scholars and activists have engaged in their pursuit of a Jewish ecological movement (see Krantz 2016, Cooper 2013) is that of *Tikkun Olam*, which Rosenthal (2005:214) characterizes in its popular conception to refer to "healing, mending, repairing the world, improving society". Some scholars contest the widespread application of the *Tikkun Olam* principle as a politically progressive catch-all term, concerned that such usage misappropriates the principle's scriptural meaning (Cooper 2013). That being said, the present work retains the concept, in particular with reference to the relatedness of social and ecological justice in our concepts of Tikkun Olam as well as TEK.

Applications of Jewish Ecological Principles

Jewish funeral practices, in which bodies are wrapped in a simple white shroud and laid in wood caskets for burial within 24 hours of death, have been framed by Jewish ecologists as demonstrating "expression of the relationship of humans to the earth" (Kraemer, 2002:81). Decomposition of the dead must occur rapidly and unimpeded, embodying the principles articulated in Genesis 3:19: "dust you are and to dust you will return". Even after burial, those mourning are often required to be low to the ground, demonstrating that "life, too, is never far from the earth" (Kraemer, 2002:88).

The porcine prohibition under the laws of Kashrut have been similarly reinterpreted by Jewish ecologists as a mechanism entrenched in scripture to secure protection (Higman 2012, Meyer-Rochow, 2009) of the ecologically delicate foothills of Judea (Davis, 2009:26). Indeed, omnivorous pigs fare poorly in the Middle East's hot, dry climate, and their foraging in such environments threatens to degrade agricultural lands (and opportunities for other livestock to graze) (Harris, 1987; Kass 2001). This reinterpretation offered by scholars on the subject of pork may be drawn direct-

ly from ancient texts. The Babylonian Talmud (79b), as well as the Mishnah Bava Kamma (7:7), state that rearing small livestock, including small cattle and goats, was prohibited in the land of Israel, of permitted in neighbouring Suria [Syria]. This prohibition is *explicitly* to protect the ecological vitality of Israel's farmland—since livestock "spoil what is sown" through grazing (Silverstein, Mishnah Bava Kamma 7:7).

A range of contemporary initiatives in Israel and North America furthermore aim to embody Jewish ecological principles in their ongoing activities. The principle of *Tikkun Olam* is often articulated in association with such operations, which include farms, retreat centres, camps, and businesses that typically incorporate both social justice and environmental dimensions. Some explicitly engage with Jewish TEK in their approaches. Two environmentally focused initiatives, the Jewish Farm School and Hazon have for instance readopted and reframed the *Shmita* practice in environmentalist terms. The Adamah Fellowship, an organic farming education centre in rural Connecticut, ecologically reinterprets the *Shabbat* principle by refraining from consuming milk from their dairy goats on the day of rest. The goats are effectively milked to prevent animal suffering, but in line with Jewish practice, humans do not benefit from this labour (Hazon 2019).

We return, further on, to discuss the principles of Jewish ecology with reference to the Toronto Heschel School's Teaching and Learning garden. To better frame this discussion, we turn now to an overview of the school garden movement in industrialized countries.

School Gardens: Hands-on Scientific Ecological Knowledge

Although initiatives to include food-growing activities in school curricula are certainly not new (see, e.g., Jewell 1906), urban North America and Europe have given rise to a significant revival of school-based gardens in recent decades (Williams and Dixon, 2013:212; Ozer, 2006:848). Situated within the broader context of environmentalist movements and characterized as a response to neoliberalizing sociocultural forces (Pudup, 2008:1228; Northcott, 2015:19; Williams and Dixon, 2013:212), such gardens typically aim to foster community building, sense of place, and nature connectedness in hands-on, tangible ways (Williams and Dixon, 2013; Graham et al., 2005; Ozer, 2006).

Across the growing number of school-based gardens, students, teachers and members of the local community commonly work together (Kransy and Tidball, 2016; Ozer, 2006:847) to grow food, flowers or herbs on small plots of land, in raised planters and pots (Ozer, 2006:848). Time spent in the garden is often folded into regular curriculum, vis-à-vis such subjects as math, science and language arts, so that the garden becomes a tool in a problem-based, inquiry-focused, empowering, experi-

ential pedagogy (Filkins and Hoffman, 2017; Graham et al., 2005; Gaylie, 2011; Ozer, 2006; Williams and Dixon, 2013). Meta-analyses demonstrate the key role school gardens may play in improving academic achievement, especially in the sciences, and particularly among those who do not excel in didactic classroom settings (Williams and Dixon, 2013:224; Ohly et al., 2016:30).

Conceptually, we suggest that the majority of school gardens across North America and Europe might be characterized as exemplifying SEK in their design, which connects to contemporary scientific curricula in hands-on ways. That said, school garden-based SEK may certainly provide opportunities for students to think deeply about contemporary agricultural systems, and consider alternate paradigms (Blair, 2009). The degree to which school garden programs may concurrently enact or promote TEK, or engage with spirituality or religiosity, is understudied.

Waldorf education, (a mode of schooling based on the *anthroposophic* "spiritual science" philosophy of Rudolf Steiner, and linked to "biodynamic" agriculture, an agroecological approach), is popular both across Europe and North America. Waldorf gardening programs, we suggest, might be fruitfully characterized as concurrently integrating SEK and TEK alongside spirituality. However, we are unaware of any scholarship that explicitly analyzes Waldorf school gardening models, or any others for that matter, in this conceptual light. This is notable given that literature describing Canadian school garden approaches of the Victorian era emphasizes "the idea of encountering spirituality through nature" as a distinct consideration of the time (Gaylie, 2011:30).

The present work aims to fill the aforementioned gap through a single case study of a specific school garden in the city of Toronto, Canada. The Toronto Heschel School is an independent Jewish Day School founded in 1996. Inspired by the theology of Rabbi Abraham Joshua Heschel, the school prioritizes interdisciplinary learning across its curriculum. One mandatory component of the curriculum includes learning experiences that take place in the school's Teaching and Learning Garden. As affirmed in a Heschel School newsletter, the Teaching and Learning garden aims to provide embodied learning experiences for students that bring together religious, as well as social and ecological considerations:

> [T]he essence of Torah is to choose life (Deuteronomy 13:19). Ecological literacy provides children with competency towards understanding living systems and the lives of people who live within them. Through their environmental studies, children can become better centred on that core Jewish value. And it can all begin in a garden. (Segal, 2010:1)

In what follows, we present our study methods and findings.

Methods

This study was conducted within the context of an upper-level, interdisciplinary undergraduate course inquiring into issues of Food Justice at McMaster University. The first author, Ijaz, was the instructor for the course in 2018 and 2019 and received approval from McMaster University's Research Ethics Board in both years to conduct research within the course context. Mawson, the second author, was an undergraduate student in the 2018 course who initiated the project in partial fulfilment of her course requirements. She undertook a literature review on the subject of Jewish ecology, and conducted one semi-structured qualitative interview with Gail Baker, the Toronto Heschel School's founding (and now retired) principal (participant E1), who has preferentially requested to be identified by name (rather than anonymized) in this work. The following year, Ijaz and Mawson worked collaboratively with a team of students in the 2019 course (listed in the acknowledgments) to undertake and analyze six additional interviews (E2, with a school educator; and A1—A5, with Heschel School alumni with experience in the Garden program) for the study. All Heschel school alumni interviewed had a minimum of six years of prior attendance at the school, and the educators each had been involved in the Garden program for several years. To protect E2's identity as an educator, no additional details are provided.

Two distinct semi-structured interview guides were used across these interviews. Overall, questions pertaining to the pedagogical approach underpinning the school's garden program (with particular emphasis on the school's Jewish lens); descriptive probes to elicit tangible examples; and inquiries as to successes, challenges, and future directions. All interviewees provided informed consent for their participation. All interviews were transcribed verbatim from an audio recording, to facilitate analysis and interpretation.

Using thematic analytic methods as described by Braun and Clarke (2006), and with preliminary support from the 2019 course students, the authors undertook a process of progressive inductive coding and categorization of key themes within the interview transcripts. Each author brought a distinct set of perspectives to the analytic process. As a scholar with extensive knowledge of contemporary food systems and food-related pedagogies, the first author brought methodological expertise and interpretive rigour to this work. As a former Heschel School student and a Jewish-identified person, the second author incorporated insider (that is, "emic") experiential knowledge of the study site and its underlying values to the project (Pike, 1967:38).

Results

We present our study findings in three segments. *Part I (Genesis)* draws on the narratives of educators at the Toronto Heschel School to provide an overview of the

Teaching and Learning Garden origins and conceptual underpinnings. In *Part II (The Garden Grows)*, the voices of former Heschel school students and educators alike come together to detail the range of activities that have taken place in the garden over the last twenty years. The final segment, *Part III (Harvest)*, draws on interview excerpts to highlight study participants' accounts of how their Heschel School experiences impacted their lives more broadly.

Part I: Genesis

Situating the Toronto Heschel School's Teaching and Learning Garden in its broader global context, the school's founding principal shares the concerns around social and ecological injustice that underpinned the school's early vision:

> We live in a world full of climate change, starvation, droughts, flooding, and we need to come figure out new ways of growing food, providing food, things that help keep our planet growing and going. And there are so many people studying the food issue, and how to feed the planet. It's something we can't ignore, or we're going to destroy our planet. (E1)

It was, she explains, upon the backdrop of these global considerations, and a vision of Judaism as a principled way of life, that the school and its garden were founded:

> There were five of us that would sit around a kitchen table and talk about what kind of community did we want. Some of our big ideas [involved] creating caring, compassionate community, starting with the school. [We wanted to] bring Judaism and use it as a unifying force between people and not a divisive force. Getting away from, this is the orthodox way, this is the Reform, the Conservative, or the Reconstructionist way . . . understanding that there is more that unites us that divides us. Because we were working with young children, between the ages of 4 and 14, [the big question was]: "how do you make Judaism relevant while still grounding them in tradition?" And the garden was the most natural way for us. (E1)

With reference to Rabbi Abraham Joshua Heschel's theology, the founding principal explains that the garden unfolded as a means to tangibly engage with the principles of Judaism in the context of a troubled contemporary world:

> [Heschel believed] that it is one thing to understand your roots and to pray. But if you don't take action and do something about it, then you're not being fully Jewish and fully human. To be a good Jew, first, you have to be a good human being concerned with justice—not just how we treat each other, but how we treat God's creation and the world. (E1)

More specifically, the school's founders sought to transpose Heschel's principle of "radical amazement" onto contemporary ecological concerns:

> What we took out of [Heschel's] work was the whole idea of awe and wonder, and radical amazement . . . and how it was our responsibility from the Jewish tradition to be a part of creation [and] . . . not to destroy wantonly. Especially in the ancient times, if they were taking over a city, you couldn't just cut down the fruit trees, that was important, because that is sustenance for the earth. So how do you take those ideas, and put them into a school setting? The idea of the garden! (E1)

Another school educator who has played a central role in the Heschel school's garden program reiterates a similar ethic, rooted in the Judaic principle of *Tikkun Olam*:

> In Jewish thought there is a focus on all living things, and that extends to the environment as well. Everything was made for a reason and has a purpose. Plants and animals are absolutely living things, it is not just people. So having a respect for the living things around us, and the environment around us is absolutely a part of the Jewish thoughts and intentions. Our commitment is to *Tikkun Olam*, which is recreation of the world, or repairing damage and bringing goodness into the world. (E2)

In line with this principled mission, the founding principal describes a progressive unfolding of the garden as a core element of the Heschel School, integrated into an interdisciplinary, socially- and ecologically engaged manner across the school's curriculum and community:

> The garden was very small at the beginning, and it grew over the years. We knew that for learning to be sustainable, [teachers] had to understand what they were talking about and they had to demonstrate it through action. Our curriculum had to encompass ecology and the environment and the garden, so it had to become part of things the students were doing. It wasn't an after-school program only. Or it wasn't something that some kids could elect to be part of—it had to become integral to everything that happened at the school. (E1)

The principles and natural rhythms of plant cultivation, evident in the Heschel School garden, in turn, informed the growth of the school as a whole.

> When you plant a flower, when you plant a seed, you have to nurture it, you have to give it plenty of sunshine, you have to make sure it has the right air, the right water, you nurture it until it grows into a flower. You can't make

> it grow any faster than it needs to grow. And I think that's the same with educating children. So that was always something that guided a lot of our thinking around curriculum and how we view children and how we view learning. (E1)

It is thus clear that the Teaching and Learning Garden represents a "very much integral" part of the Toronto Heschel School's curricular structure, in which "all teachers must participate, and all the classes have to participate". The garden initiative, which has "evolved over the years" to include a range of "different programs and projects" as discussed in what follows, necessarily requires "a lot of teacher training". Study participants equally make clear that the garden program yields a multidimensional harvest with rich and diverse rewards for students, teachers and community members alike.

Part II: The Garden Grows

Now adults, several Heschel School alumni who attended the school from kindergarten through grade 8, share memories of their time in the garden. They recall planting, watering, composting and exploring—seemingly innocent activities of childhood.

> It was mostly planting, actually burying seeds and watering. . . Sometimes there would be harvesting, where we planted cherry tomatoes and planted basil leaves, we would pick some of those. (A1)

> Composting was a main part of the focus at the Heschel garden. We worked together to bring our garbage to the compost. You made sure you separated your compost well. And then as the garden really got more established it definitely became more of an activity that you could actually do. I remember a lot of working in the composting stuff probably because it was really smelly [laughter]. (A5)

> When you're very little it's exciting to spend time in the garden and to be exploring, you know, be watching and tracking all different kinds of bugs and flowers and everything that's growing. (A2)

The educators who over the years have stewarded the school's garden program recount, in turn, a deliberately crafted interdisciplinary curriculum. Garden activities, it is clear, are designed to bring together religious teachings alongside socially engaged, artistic and scientific learning at all grade levels. The school's youngest students, for instance, undertake gardening activities that over time culminate in them sharing culturally relevant food on an important Jewish holy day:

> The junior kindergarten [students]—the four-year-olds—plant potatoes. The next year when they're in senior kindergarten, they harvest those potatoes and make *latkes*[i] at Hanukkah, using the potatoes that they had grown. And to them, this is very exciting. (E2)

Older children undertake gardening activities that advance their understanding of local and global food systems:

> Within the Garden, my grade five class plants their own garden box. We grew kale two years ago and last year we grew beet and lettuce. We work on a unit, talk about the ethics of food production and food sourcing and food consumption. (E2)

Classes, in turn, engage in a broader dialogue about complex socio-political and ecological issues related to food production and consumption:

> We talk about heirloom seeds. They learn what GMOs [genetically-modified organisms] are. They engage in quite a dynamic debate about some of the positives and negatives for growing food that is genetically modified. They understand what organic would mean, what growing things locally means, why it's beneficial, and the impact on the environment. We analyze an image by a Canadian artist who places tropical fruits in an arctic landscape, and we talk about how it's weird that we can eat bananas in the middle of winter. They relate it to the garden later in the term when they select and plan the food to plant in their box. (E2)

Artistic and religious education furthermore appear seamlessly integrated across a garden-centred curriculum:

> The grade sixes, we plant wildflowers. We make paper in the class as an art activity. We infuse the paper with wildflower seeds, then we plant a wildflower garden as part of one of their prayer analysis classes. Part of their learning is to look at one of the core prayers that are recited several times a day, in which you literally stand for the prayer. They think about what they stand for, and they write that down on the paper they have made. After cutting out their paper in the shape of a food, they say their prayer altogether and they plant it. (E2)

A former student's recollections illustrate the interdisciplinarity of her Heschel school experiences, as she vividly recounts the delight that accompanied her ecological learning experiences in the garden:

> A big thing that sticks out in my memory is planting milkweed all around the outdoor space in order to attract monarch butterflies. I would eagerly run out every recess to go see whether there were butterfly eggs or any butterflies. I also distinctly remember planting wildflowers to attract honey bees and hummingbirds to support questions of ecosystem health and overall environmental questions. Conversations about supporting bee populations happened around planting wildflowers. (A2)

Another alumnus reiterates the centrality of the garden program in the school's curricular structure:

> Many of our actual courses or classes would take place in [the garden]. It wouldn't be every single class, but every now and then we would go there and learn specifically about gardening . . . and we could connect it to many other subjects. (A1)

One of the school's teachers further elaborates on the infusion of Jewish cultural history and values into the garden curriculum:

> The grade sevens plant a tree every year as part of their learning on the story of Honi' Hame'aggel. It's a [traditional Jewish] story about someone who plants a carob tree, even though carobs do not bear fruit for 70 years. He plants it as a gift for the future. (E2)

The curricular choice to have students collectively plant a tree, she makes clear, is meant to impart spiritual lessons that extend well beyond the present moment:

> It's passing the responsibility, but it is also a beautiful thought on gift-giving. You are giving a gift that you yourself cannot benefit from. . . [The students] won't be a part of the community when the tree bears fruit, so they are giving a gift to the future people of the school. (E2)

That said, Heschel school educators engage the garden platform to teach core lessons about "social justice . . . [and] environmental justice" (E2) in real time:

> We don't just talk about having environmental belief, we live it by having the garden, and planting it and having students become stewards of it, having them take care of it. (E2)

This approach includes a pedagogical focus on historical injustices in the Canadian context, in particular with regards to the Indigenous peoples on whose traditional territories the school presently exists. Echoing the Canadian government's Truth and

Reconciliation Commission, meant to redress the ongoing intergenerational legacy of the nation's horrific residential school legacy (Feir, 2018; Truth and Reconciliation Commission of Canada, n.d.), the Heschel School has in recent years initiated a "Truth and Reconciliation Garden" onsite.

This portion of the garden is used as a "vehicle" for cultural exchange and historical learning "about First Nations, not just from behind a book" (E1). There, eighth grade Heschel School students work together with Canadian Indigenous elders, teachers and youth from another local school, planting and growing "things that are native to the Indigenous people of Canada", such as tobacco. Elaborating on this initiative, the school's founding principal conceptually links Indigenous peoples' oppression with Jewish peoples' own histories:

> We do a lot of work with Indigenous communities in Toronto. [The students] learn from Indigenous elders, and Indigenous people come to Heschel and learn from Heschel. There's a lot of connecting—it's critical as Canadian citizens for our students to understand that, to understand the horrors that people right here in Canada have gone through. The Jewish people have obviously gone through our own horrors. So I see the garden evolving always to respond to the needs of our Canadian and world community. (E1)

That being said, teachers are instructed not to "push [their] ideologies on anybody else" but rather, to create a learning context in which students may unfold their own values and ethics. As the founding principal notes, "I just encourage other people to explore their own connections to environmentalism and spirituality and how they're linked."

Inevitably, one educator notes, some students resist participating in gardening experiences.

> Some students don't like getting their hands dirty, some students don't want to, [they feel] it's gross, or there is a worm and they freak out. (E2)

As a school alumna recalls, no student is forced to participate in particular gardening activities:

> There was the option for everyone who didn't want to get their hands dirty . . . to step back. But in my memory, very few took that option. But even if they did, they would have to water or to use a shovel, a little garden one for a child. (A1)

This approach, a teacher notes, is meant to foster active student engagement in the garden as a community site:

> There absolutely is resistance . . . But the more that others are engaged and the more that they are excited, the easier it is for everyone to kind of get on board. The one kid [who opts out] then gets left out. (E2)

This excitement and interest in the garden are further fostered in the garden's accessibility to students beyond didactic class time. Former students recall engaging in garden activities during their recess breaks:

> I think I played in the garden during recess too (A4).

> In recess . . . if you wanted to, [you could] work with a teacher on gardening or planting or thinking of ideas of what to plant and harvesting the garden. (A5)

A teacher further elaborates how the garden served as a way to keep students engaged in positive activities outside of class time:

> Some kids when they don't have anything to do at recess or they need a particular task, we'll weed the garden or tend to it or harvest. (A3)

In addition, Heschel School staff have long made arrangements for families and community members to be involved in the garden's activities outside of school hours. Former students remember such occasions fondly:

> There would be community events when parents would come and community stakeholders would come and we'd all kind of work in the garden together as a community. It was a nice fun thing to do. . . . My siblings and my mom and dad would come out we [would] all get dirty together. It would be an opportunity for kids to share what they've been talking about in class with their parents as they all work together. (A2)

> As I got older, there used a garden weekend where families would come and plant in the garden and work together to build up the garden. . . . I just remember loving the space and having great memories of planting, friends, and running around and having the time to honestly build those social connections that are also super important for young kids to build. (A5)

More recently, community involvement has become more formalized under the auspices of a Heschel School "garden club", as a teacher explains:

> [The] garden club has become more vibrant and more people have been joining it as families and as individuals. That has become more popular and

> has had more engagement over the last three years. Families meet and they come. Some of the teachers as well, and they take care of the Garden as part of the shared effort. (A3)

A former student characterizes the engagement of teachers and parents in the garden outside of school hours as fostering meaningful community connections:

> It was really nice to kind of have a teacher step out of that role—especially those community moments the teachers were less in the teacher role and more as a community member. Which levelled the playing field a bit and so it changed the dynamic of students and teachers into one when we were working together toward the common goal. Having the parents present, of course, also added another dimension of just community building that was very special because it became kind of a family affair. (A2)

That said, community engagement in the garden is understood as essential to the garden's upkeep, particularly over the summer months, when "Garden Guardians" step in to maintain the growing space when classes are out of session. In turn, these community members are able to enjoy the fruits of their labour:

> A group of families and some teachers sign up to become custodians of the Garden over the summer. They make sure the Garden is weeded, and that the plants are watered . . . They are able to harvest some of the plants from the garden that are ripe—so it is like a give and take. They come and take care of the garden and in return, they are rewarded for their effects with beautiful produce. (A3)

It is ultimately clear that the garden has unfolded over the last two decades to represent a core component of the Heschel School community as a whole. It has endured and transformed through a move to a new school site, staff changes, and many cohorts of students. Its underlying vision, however, remains constant, and its roots continue to deepen. The founding principal shares:

> It's grown, unbelievably so. The garden has evolved organically from a very small plot of land with lots of ideas and excitement to bringing more and more education into moving to a larger space, making a much larger garden, and evolving curriculum and understanding different ways we could teach everybody in the community. And I include parents, grandparents, teachers, neighbours, students, friends, every part of the school is part of this mission and vision. And, with this way of developing organically, metaphorically and truthfully—it's an organic garden—the garden will be there as a guidepost for all that happens. (E1)

Part III: Harvest

A Heschel School teacher, describing an activity she conducts with students, observes that each person who comes into the school's garden will invariably experience it in their own way:

> We walk through the garden and we observe what we see and what we hear. And then they share their observations and they note that people have perceived different things. Someone hears a siren, and someone hears leaves crunching, or someone hears a pine cone falling. (E2)

In the same way that Heschel School educators, students, and community members have cultivated a diverse range of foods and other plants in their garden over the years, so too do this study's participants report on the multiple ways in which the garden has positively impacted them as ecologically, socially and spiritually engaged citizens.

One alumna talks about learning about "the energy and time it takes in creating food":

> One time we made a class salad. We had to plant the lettuce, tomato, and cucumber and wait the whole season, and then finally got to harvest it. We had to wash up and it finally got us one salad! The process that went with one meal was months and months and months. As a young kid, it's hard to wait that long. You're excited about it, right? It was a really important lesson in terms of realizing that your food doesn't just appear magically on your plate. (A2)

Other alumni spoke more generally about the garden experience having fostered in them an enduring sense of ecological awareness—even if for some this awareness may have briefly fallen away:

> I still care about the environment, I care about the earth. . . And I still see environmentalism and the outdoors as an important thing to me. (A4)

> When I left the elementary school, I really migrated away from being environmentally conscious. Then as I got older and I kind of understood that it was super essential . . . the foundation that was engraved with me that has helped me make connections between living a healthy and good life with the environment and doing good for the environment. . . Making the world a better place has stayed with me . . . and continued to change how I think about how I interact with the world. Minimizing my use of cars, minimiz-

> ing my use of all these environmentally harmful plastics. (A5)

Former Heschel students consistently spoke about the ways in which their garden experience brought eco-spiritual lessons to life in ways that they continue to actively engage in their lives:

> [The garden] opened up spiritual questions a little bit more than a traditional classroom learning might have. Because it was such an embodied experience that connected you to the earth and to the processes that keep you alive that sustain life—in the form of food or just kind of a broader ecosystem. (A2)

> The garden helped me develop a connection with environmentalism, both pragmatically and spiritually and it also has made me think about the values and the message about those values that will pass on to future generations. Currently, I'm involved in Jewish education with the Jewish student organization on campus. I constantly try and bring that connection that I have felt in the experience to the students I work with and try to expose them to the spiritual environmentalist connection. (A1)

One alumnus noted that his own garden-based ecological learnings, at the time imparted in Judaic terms, had more universal applicability:

> So I feel like that the idea of ecology is something that you can translate into your whole life, it doesn't have to be just if you're a Jewish person. So for me, those lessons weren't necessarily Jewish though they were rooted in a Jewish principle. (A5)

Another emphasized the garden's key role in helping to foster her cultural sense of ancestral connection, while equally helping her to understand the interconnectedness of all things:

> [The garden was] a very tangible way to relate to your history and your heritage because look I'm kind of doing the same things that my ancestors would have been doing, I'm working with the earth. . . . [But] the biggest thing that I took away from the garden experience was, kind of, feeling not compelled to analyze the same way as other people might. Not really feeling the need to pull things apart, rather trying to stitch them together and to see where they meet and intertwine. (A2)

A teacher echoes this alumna's perspective about the links students are able to make between their diverse learnings:

> When [students] make the connections to something we have learned and apply it to the Garden, or when they apply something from the Garden rather to what they have learned in school, it's really special. (A3)

Another alumnus similarly speaks to the holism and interdisciplinarity of his garden experiences:

> Incorporating science into understanding the garden, incorporating art into the garden, sitting outside and drawing the flowers. . . . All of these things are components that contribute to understanding what it means to be good to the world and have a connection to the earth and to the world larger than technology and sitting in a classroom. (A5)

These experiences align markedly with the Heschel School founding principal's articulated vision of a transdisciplinary Jewish pedagogy in which the boundaries between religion and ecology—which students might initially as disparate ways of knowing—become dissolved:

> Interdisciplinary teaching is at the heart of the Heschel School—and it's hard. It's much easier to teach in silos. [But] that doesn't make sense, it's something we don't believe in—because life is not in silos. By grounding people in tradition, [students learn to] see things through a Jewish lens and a universal lens at the same time. (E1)

Alumni and educator experiences in the garden similarly echo the school's foundational *spiritual* principles. Both a teacher and a student allude to Heschel's principle of "radical amazement" in their stories about the garden:

> I am really inspired on the first day of school when we take students to the garden, hearing them say "Oh, that's what we planted last year! Oh, look at how well this is growing!" Or "Oh, I was here this summer!"(A3)

> You would go into [the garden] with kind of excitement and with awe and wonder and I think that unfortunately, that kind of amazement and wonder at the world is missing from adult life which is very sad. . . I still try really as best I can to hold on to that amazement and wonderment. (A2)

Alumni also consistently spoke about the ways in which their garden experiences had nurtured a sense of social and ecological responsibility, aligned with the Jewish principle of *Tikkun Olam*:

> As a kid, learning to care for the earth and for a garden teaches you values

> of responsibility. I think it was a big part of my Jewish education and my Jewish values and identity. (A4)

> I think that what came out of the Heschel garden specifically was that notion of ethical responsibility. The biggest thing it instilled in me as a young child was the energy and time it takes into creating food. That kind of ties into more spiritual questions about what it takes to sustain life, what it means to be alive, and what are my responsibilities (A2).

Another former student connected his sense of responsibility to the human connections forged in the Heschel school garden:

> At the end of the day, you don't want to destroy the garden. . . We learned how to develop all the skills that are important, to laugh with people, to let loose a little bit again outside of the academic environment. . . . My connections with people today are less about gardening explicitly, but I think that those skills are taught in a different way when you need to garden—in a better way even. (A5)

Some of the garden's most enduring lessons were less clearly linked to the school's articulated pedagogical vision, as one alumnus explains:

> I think the main way the garden has a connection that still sticks to me, is the admiration for physical labour. Usually, in an academic setting, hard work means you sit at a desk, look at some text, you study, you write notes, you memorize, you practice. That's absolutely hard work, but there is also that other aspect of hard work—where you work with your hands and try to create something with your hands. I definitely believe in a hands-on approach, and I have kept with that ever since I was first introduced to the garden. We had to get things done. You were going to get your hands dirty, be present, and put some personal effort into it. So I've brought that to my academic career and every single job that I've had. (A1)

Notably, however, this former student implicitly connects his admiration of physical labour back to the social justice values also imparted in the Heschel curriculum:

> I think it really helps to teach that the person who works in the field, with dirt, is no less valuable than the person who studies and becomes a lawyer or a doctor. Each is a master of their own craft, and each requires a certain group of skills and tremendous amount of effort. It's underestimated most of the time, I find, and unfortunately looked down upon. (A1)

Importantly, it is not only students whose lives and perspectives became shaped or transformed by their Heschel garden experiences. A teacher reports on her own increased sense of ecological engagement and responsibility as a result of her garden-related work:

> I have actually become more of an avid gardener on my own. I had never been a gardener before coming here. I have a garden space at my apartment so I now garden, which is really cool. I'm also more aware of planting seasons and seasons, and of the work and effort that it takes to actually have crops that bear fruits or vegetables. And I have become more aware also through my own teaching about local and organic and non-GMO food, and more mindful of what I am consuming and purchasing as well. (A3)

Reflecting on her own trajectory in relation to the garden, the school's founding principal also speaks humbly about what she has learned:

> I think that something that was really important and was a hard lesson for me to learn is that you have to start small and build up. Otherwise, I think you can lose track, you lose what it is you're trying to do. You know, I wanted everything to be amazing from the beginning, and on a large scale. But I learned that it's better and more sustainable if you let things evolve organically. (E1)

Discussion

This study reports on a school garden program implemented within the context of a Jewish-focused private school for children in Toronto, Canada. As indicated by educators and former students from, the Toronto Heschel School's garden program has many features in common with other school garden programs reported in the literature. As is typical in school garden programs, food-growing activities are at the heart of the Heschel Garden's activities. Students, in turn, learn to appreciate the fruits of their labours and gain insights into the work intensity of food production as they make (among other things) salads and potato latkes from their garden produce. Like many school garden programs, the Heschel Garden implements an experiential, interdisciplinary curricular structure in which garden activities are broadly integrated with classroom learning on ecological subjects. Students for instance plant milkweed to attract butterflies, or wildflowers to support bees and hummingbirds, as they learn about endangered species and environmental protection. Further reminiscent of many school garden programs described by scholars, the Heschel Garden serves as a community-building site in which educators, parents, and students come together to relate and work together on an ecological stewardship project.

On the whole, such school gardening activities broadly represent an experiential approach to building scientific ecological knowledge (SEK). As suggested in the literature, school-based SEK may successfully empower student engagement with critical questions around contemporary agricultural paradigms. Such aims, as the interviewed Heschel School educators recount, informed the Heschel Garden's founding and continue to be at the heart of its curricular structure. Former students, in turn, report on the impacts of their Garden experiences on their ecological awareness, sense of environmental and social responsibility, and appreciation of the food-growing process. What study interviewees show as distinct, however, in the Heschel Garden's design and impacts, are the dimensions informed by the School's Jewish religious underpinnings, which we suggest align more neatly—if not somewhat unconventionally—with an approach to fostering traditional ecological knowledge (TEK).

Scholars and lay actors in the field of Jewish ecology have variously discussed and implemented Judaic teachings in the context of farming and educational initiatives. Some of the key religious TEK concepts taken up in these contexts include *Shmita* (a land-based sabbatical year) and *Shabbat* (the day of rest, or concept of cyclical respite). The educators and alumni interviewed in the present study give no clear indication that these particular religious concepts have driven or deeply informed the Heschel Garden's design or activities. It is, rather, a broader concept of Jewish TEK—exemplified by the *Tikkun Olam* principle of "world repair", and a stewardship-focused (rather than dominion-based) interpretation of scripture, that is evident in the Heschel Garden program, echoing the theology of Rabbi Abraham Joshua Heschel himself. In other words, the Heschel Garden creates a space in which traditional Judaic spiritual teachings and cultural practices are *themselves reconceptualized* as ecological knowledge, and incorporated into the curriculum as seeds for student learning.

One of the interviewed educators, for instance, describes the practice of writing prayers on pieces of handmade paper embedded with wildflower seeds, which students then plant into the garden. In this activity, the act of prayer becomes explicitly connected to the earth's processes, and to the labour involved in human engagement with earth-derived resources (i.e., paper making). Another activity involves the traditional Jewish story of Honi' Hame'aggel, in which students are invited to connect their present action (of planting a tree) with its future impacts (the tree's blossoming)—which they may not themselves directly witness. Even very young children, growing potatoes in the Garden which they subsequently prepare and consume as *latkes* at Hanukkah, are provided an opportunity to make connections between their cultural and religious heritage, the land, and their own lives. In each of these instances, the Heschel Garden becomes a Jewish focused site for TEK learning in which educators work with children to engage the "dual" vocation of human beings as described in Genesis 2:15 (Davis 2009:32): at once as stewards and as masters of the earth. That being said, Heschel School educators seemed more attuned to the Judaic

elements of the garden program than did alumni.

Regardless, in the conception of Jewish TEK exemplified in the Heschel Garden, social justice is a central concept, deeply interwoven with the Garden's ecological ethic. This is particularly evident in the intercultural ecological learning that takes place in the Truth and Reconciliation Garden project of Heschel School eighth graders. This project recalls the "dialogue of wisdoms" principle that Altieri (2004:36), an agroecological scholar, characterizes as fundamental to the larger global project of transforming food systems in socially just as well as ecologically sound ways.

School educators and alumni who recount their engagements in the Heschel Garden consistently speak to these experiences' tangible impacts in their lives as Jewish-identified persons. On one hand, they remain active, environmentally- and socially engaged citizens; but importantly, they situate these commitments within the context of their Jewish ancestry and identities. In addition, the sense of awe and wonderment reported by some participants appears to clearly echo the "radical amazement" theology of Heschel himself. That said, an explicit sense of the universality of the values taught in the Garden appears evident across interviews: while the lessons took place within a Jewish-focused context, interviewees do not necessarily situate the resulting learning as uniquely Jewish in content or character.

Importantly, some of the impacts of the Garden's Jewish-focused educational dimensions appear to have features in common with those reported in non-religious school garden settings. Blair (2009:356), for instance, describes a "slack jaw wonder"—arguably similar to the "radical amazement" principle—as typifying the experiences of students in secular school gardens. What is perhaps different in the Heschel School's context is that such experiences are explicitly encouraged within the context of a set of religious values—rather than regarded as a spontaneous, if pleasant, outcome.

Ultimately, the ecological education that is seeded, cultivated and harvested in the Toronto Heschel School's Teaching and Learning Garden appears to exemplify a union of SEK and TEK learning underpinned concurrently by spiritual, ecological and ethical values. Within a Jewish-focused context, students, educators, and community members alike work together on a small scale to enact principles that critically respond to larger socio-ecological challenges. The concurrent engagement of SEK and TEK in this setting affirms Kimmerer's assertion (2012) that the boundaries between SEK and TEK need not be understood as impermeable. The school's implementation of what is, by all accounts, a successful educational Garden program further reinforces that the purported divisions between spirituality and technical, scientific knowledge may not be productive (Berkes et al. 1995).

In this light, we propose that the marriage of SEK and TEK exemplified in the Heschel School garden provides a tangible model through which science and spirituality may be concurrently taken up by ordinary people seeking to make a contribution—however small—to transform global food systems. If—as Kimmerer proposes (2012:321)—using the land as a teaching tool "softens the dichotomy we have created between SEK and TEK," then learning in the garden, informed by a distinct Jewish body of thought, may also soften what is considered TEK. After all, it is the land itself that "is the knowledge source" (Kimmerer, 2012:321). Additional research on school gardens—and other agriculturally focused initiatives—conducted within spiritually focused settings would provide important insights towards the development of a theoretical framework for dually-SEK/TEK informed education.

Acknowledgments

Many thanks to the educators and former students of the Toronto Heschel School who generously contributed their time by participating in this study. Further thanks go to C. Da Conceicao Bulhoes, K. Gohil, I. Li, N. Maizlin, and S. Thilagaratnam for their kind assistance with the study interviews.

Photo courtesy of the Heschel School

1
Latkes, or fried potato pancakes, are connected to the holiday of Hanukkah through the oil in which they are cooked. In the Hanukkah story, a single jug of oil meant only to illuminate the retaken temples' menorah for only one night instead lasted for eight nights through "a great miracle".

References

Altieri, Miguel A. 2004. "Linking Ecologists and Traditional Farmers in the Search for Sustainable Agriculture." *Frontiers in Ecology and the Environment* 2, no. 1:35–42, doi:10.2307/3868293.

Anderson, E. N. 2014. *Everyone Eats: Understanding Food and Culture.* 2nd ed. New York, NY: New York University Press.

Beek, Kurt Alan Ver. 2002. "Spirituality: a Development Taboo." *Development and Culture*: 60–77. doi:10.3362/9780855986919.005.

Berkes, Fikret, Carl Folke, and Madhav Gadgil. 1995. "Traditional Ecological Knowledge, Biodiversity, Resilience and Sustainability." *Biodiversity Conservation*, 4: 281-99. Stockholm: Beijer International Institute of Ecological Economics.

Berkes, Fikret. 2012. *Sacred Ecology.* 3rd ed. New York, NY: Routledge Taylor & Francis Group.

Berlat, Norman, and Alena J. Strauss. 2006. "Engaging Eternity: A Jewish Approach to Death, Dying, Grief, and Bereavement."*International Journal of Health Promotion and Education* 44, no. 1:14–18. doi:10.1080/14635240.2006.10708059.

Blair, Dorothy. 2009. "The Child in the Garden: An Evaluative Review of the Benefits of School Gardening." *The Journal of Environmental Education* 40, no. 2 (Winter): 15–38. doi:10.3200/joee.40.2.15-38.

Blanchard, Tsvi. 1998. "Can Judaism Make Environmental Policy? Sacred and Secular Language in Jewish Ecology Discourse." In *Judaism and Ecology: Created World and Revealed Word*, edited by Hava Tirosh-Samuelson, 423–448. Cambridge, MA: Harvard University Press.

Chiappe, Marta B., and Comelia Butler Flora. 1998. "Gendered Elements of the Alternative Agriculture Paradigm." *Rural Sociology* 63, no. 3:372–393., doi:10.1111/j.1549-0831.1998.tb00684.x.

Cohen, Jeremy. 2001. "On Classical Judaism and Environmental Crisis." In *Judaism and Environmental Ethics: A Reader*, edited by Martin D. Yaffe, 73–79. Lanham, MD: Lexington Books.

Cooper, Levi. 2013. "The Assimilation of Tikkun Olam." *Jewish Political Studies Review*. 25, no. 3/4: 10.

Daberkow, Stan G., and Katherine H. Reichelderfer. 1988. "Low-Input Agriculture: Trends, Goals, and Prospects for Input Use." *American Journal of Agricultural Economics* 70, no. 5:1159–1166. doi:10.2307/1241756.

Davis, Ellen F. 2009. *Scripture, Culture, and Agriculture: An Agrarian Reading of the Bible*. Cambridge, UK: Cambridge University Press.

Dewalt, Billie. 1994. "Using Indigenous Knowledge to Improve Agriculture and Natural Resource Management." *Human Organization* 53, no. 2:123–131. doi:10.17730/humo.53.2.ku60563817m03n73.

Ehrenfeld, David, and Phillip J. Bentley. 2001. "Judaism and the Practice of Environmental Stewardship." In *Judaism and Environmental Ethics: A Reader*, edited by Martin D. Yaffe, 125–135. Lanham, MD: Lexington Books.

Feir, Donna L. 2016. "The Intergenerational Effects of Residential Schools on Children's Educational Experiences in Ontario and Canada's Western Provinces." *International Indigenous Policy Journal* 7 no. 3. doi:10.18584/iipj.2016.7.3.5.

Fink, Dan, and Ellen Bernstein. 2000. "Shabbat and the Sabbatical Year." In *Ecology & the Jewish Spirit: Where Nature and the Sacred meet*, edited by Ellen Bernstein, 112–120. Woodstock, VT: Jewish Lights Publishing.

Gaylie, Veronica. 2011. *Roots and Research in Urban School Gardens*. New York, NY: Peter Lang Publishing.

Graham, Heather, Deborah Lane Beall, Mary Lussier, Peggy Mclaughlin, and Sheri Zidenberg-Cherr. 2005. "Use of School Gardens in Academic Instruction."

Journal of Nutrition Education and Behavior 37, no. 3: 147-51. doi:10.1016/s1499-4046 (06)60269-8.

Harris, Marvin. 1987. *The Sacred Cow and the Abominable Pig: Riddles of Food and Culture, A Touchstone Book*. New York, NY: Simon and Schuster.

Hazon, 2019. "The Jewish Lab for Sustainability." Accessed Sept. 5, 2018.

Higman, B. W. 2012. *How Food Made History*. 1st ed., Malden, MA: Wiley-Blackwell.

Hoffman, August John, ed. 2017. *Creating a Transformational Community: The Fundamentals of Stewardship Activities*. Lanham, MD: Lexington Books.

Holt-Giménez, Eric and Miguel A. Altieri. 2013. "Agroecology, Food Sovereignty, and the New Green Revolution." *Agroecology and Sustainable Food Systems* 37, no. 1:90–102. doi:10.1080/10440046.2012.716388

Horrigan, Leo, et al. 2002. "How Sustainable Agriculture Can Address the Environmental and Human Health Harms of Industrial Agriculture."*Environmental Health Perspectives* 110, no. 5:445–456. doi:10.1289/ehp.02110445.

Jewell, James Ralph. 1906. "The Place of Nature Study, School Gardens, and Agriculture in Our School System." 1906. The Pedagogical Seminary 13, no. 3 (1906): 273-92. doi:10.1080/08919402.1906.10534365.

Jewish Farm School. n.d. "Sustainable Agriculture Rooted in Jewish Traditions." Accessed Sept. 5, 2018.

Kaplan, Edward K. 2002. "Reverence and Responsibility: Abraham Joshua Heschel on Nature and Self." In Judaism and Ecology: Created World and Revealed Word, edited by Hava Tirosh-Samuelson 407–423. Cambridge, MA: Harvard University Press.

Kass, Leon R. 2001. "Sanctified Eating." In *Judaism and Environmental Ethics: A Reader*, edited by Martin D. Yaffe, 384–414. Lanham, MD: Lexington Books.

Kimmerer, Robin Wall. 2012. "Searching for Synergy: Integrating Traditional and Scientific Ecological Knowledge in Environmental Science Education." *Journal of Environmental Studies and Sciences* 2, no. 4 (Fall): 317–323. doi:10.1007/s13412-012-0091-y.

Kirschenmann, Frederick L. 2005. "Spirituality in Agriculture." *Leopold Center Conference Papers*. 6.

Kraemer, David. 2002. "Jewish Death Practices: A Commentary on the Relationship of Humans to the Natural World." In *Judaism and Ecology: Created World and Revealed Word,* edited by Hava Tirosh-Samuelson 81–92. Cambridge, MA: Harvard University Press.

Krantz, David. 2016. "Shmita Revolution: The Reclamation and Reinvention of the Sabbatical Year." *Religions* 7, no. 8 (Summer):100. doi:10.3390/rel7080100

Krasny, Marianna E., and Keith Tidball, G. 2016. "Community Gardens as Contexts for Science, Stewardship, and Civic Action Learning." In *Urban Horticulture: Ecology, Landscape, and Agriculture,* edited by Janaki Blum, 267-91. Oakville, ON: Apple Academic Press.

Levine, Ellen. 1997. "Jewish Views and Customs on Death." In *Death and Bereavement across Cultures*, edited by Colin Murray Parkes, Pittu Laungani, and Bill Young, 98–130. London, UK: Routledge, Taylor & Francis Group.

Lin, Brenda B. et. al. 2012. "Effects of Industrial Agriculture on Climate Change and the Mitigation Potential of Small-Scale Agro-Ecological Farms." in *Animal Science Reviews 2011*, edited by Davic Hemming 69–86. Wallingford, Oxfordshire: CABI International.

Mann, Thomas W. 2013. "Not by Word Alone: Food in the Hebrew Bible." *Interpretation: A Journal of Bible and Theology* 67, no. 4 (Fall):351–362. doi:10.1177/0020964313495515.

Martínez-Torres, María Elena, and Peter M. Rosset. 2010. "La Vía Campesina : The Birth and Evolution of a Transnational Social Movement. " *The Journal of Peasant Studies* 37, no. 1:149-175. doi:10.1080/03066150903498804.

Mauro, Francesco, and Preston D. Hardison. 2000. "Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives." *Ecological Applications* 10, no. 5:1263. doi:10.2307/2641281.

Meyer-Rochow, Victor. 2009. "Food Taboos: Their Origins and Purposes." *Journal of Ethnobiology and Ethnomedicine* 5, no. 18 (June 29): doi:10.1186/1746-4269-5-18.

Mt. Pleasant, Jane, and Robert F. Burt. 2010. "Estimating Productivity of Traditional Iroquoian Cropping Systems from Field Experiments and Historical Literature." *Journal of Ethnobiology* 30, no. 1:52–79. doi:10.2993/0278-0771-30.1.52.

Northcott, Michael S. 2015. *Place, Ecology and the Sacred: The Moral Geography of Sustainable Communities.* London, UK: Bloomsbury Publishing Plc.

Ohly, Heather, Sarah Gentry, Rachel Wigglesworth, Alison Bethel, Rebecca Lovell, and Ruth Garside. 2016. "A Systematic Review of the Health and Well-being Impacts of School Gardening: Synthesis of Quantitative and Qualitative Evidence." *BMC Public Health* 16, no. 1:1–36. doi:10.1186/s12889-016-2941-0.

Ozer, Emily J. 2006. "The Effects of School Gardens on Students and Schools: Conceptualization and Considerations for Maximizing Healthy Development." *Health Education & Behavior* 34, no. 6 (December 21): 846-63. doi:10.1177/1090198106289002.

Pike, Kenneth L. 1967. *Language in Relation to a Unified Theory of the Structure of Human Behavior*. 2nd ed. The Hague, NT: Mouton & Co Publishers.

Pudup, Mary Beth. 2008. "It Takes a Garden: Cultivating Citizen-subjects in Organized Garden Projects." *Geoforum* 39, no. 3: 1228-240. doi:10.1016/j.geoforum.2007.06.012.

Rosenthal, Gilbert S. "Tikkun Ha-Olam: The Metamorphosis of a Concept." *The Journal of Religion* 85, no. 2:214–40. doi:10.1086/427314.

Schorsch, Jonathan. 2018. "Cosmological Cultures as Forms of Resistance." *The Food Movement, Culture, and Religion: a Tale of Pigs, Christians, Jews, and Politics*, 35–52. Palgrave Macmillan.

Schwartz, Eilon. 1998. "Response. Mastery and Stewardship, Wonder and Connectedness: A Typology of Relation to Nature in Jewish Text and Tradition." In *Judaism and Ecology: Created World and Revealed Word,* edited by Hava Tirosh-Samuelson, 93–102. Cambridge, MA: Harvard University Press.

Segal, Elana. 2010. "Cultivating Learning in the Teaching Garden." *Think: The Lola Stein Institute Journal 8 (Fall).*

Silverstein, Shraga. n.d. "The Mishna with Obadiah Bartenura by Rabbi Shraga Silverstein. Mishnah Bava Kamma 7:7." Sefaria.org. Accessed Aug. 20, 2019.

Slow Food. 2015. "About Us." Accessed Sept. 5, 2018.

Swetlitz, Marc. 1998. "Living As If God Mattered: Heschel's View of Nature and Humanity." In *Ecology and the Jewish Spirit*, edited by Ellen Bernstein, 244-49. Woodstock, VT: Jewish Lights Publishing.

Thomas, David R. 2006. "A General Inductive Approach for Analyzing Qualitative Evaluation Data."*American Journal of Evaluation* 27, no. 2:237–246. doi:10.1177/1098214005283748.

Truth and Reconciliation Commission of Canada (TRC). n.d. "About the Commission." Accessed Sept. 5, 2018.

Wheaton, Elaine, and Suren Kulshreshtha. 2017. "Environmental Sustainability of Agriculture Stressed by Changing Extremes of Drought and Excess Moisture: A Conceptual Review." *Sustainability* 9, no. 6 (June): 970. doi:10.3390/su9060970.

Williams, Dilafruz R., and P. Scott Dixon. 2013. "Impact of Garden-Based Learning on Academic Outcomes in Schools." *Review of Educational Research* 83, no. 2: 211-35. doi:10.3102/0034654313475824.

Zhang, Chaochun, et al. 2014. "Root Foraging Elicits Niche Complementarity-Dependent Yield Advantage in the Ancient 'Three Sisters' (Maize/Bean/Squash) Polyculture." *Annals of Botany* 114, no. 8 (January): 1719–1733. doi:10.1093/aob/mcu191.