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Hegemony, Counter-Hegemony and Food Systems Literacy: Transforming the Global Industrial Food System

Nicholas Rose^{1,*}  and Izo Lourival²

¹William Angliss Institute, Melbourne, Victoria, Australia and ²Invest Victoria, Melbourne, Victoria, Australia

*Corresponding author. Email: nick.rose@angliss.edu.au

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Abstract

National and global food systems are beset by intersecting and mutually reinforcing crises of public and ecological health. The locus of these crises resides primarily in the excessive concentration of corporate power and control. Deploying a Gramscian theory of politics as a contribution to the ongoing development of a critical food-based environmental education pedagogy, this article argues that transformative change requires the mass exercise of food citizenship directed towards the realisation of a socially just and ecologically sustainable food system, as contemplated by the principles of food sovereignty. The article argues further that food citizenship in turn presupposes levels of engagement and motivation that will only come from processes of transformative learning and critical consciousness-raising through an emerging form of environmental education: critical food systems literacy.

Keywords: systems; sustainability; socio-ecological approach; social justice; environmental sustainability; environmental issues; sustainable food systems; food literacy

Global food and agricultural systems, in the form of large-scale industrialised monocultures, are major drivers of anthropogenic (i.e., human-induced) climate change, being estimated to generate in excess of 25% of total greenhouse gas emissions (Tilman & Clark, 2014). Contrary to the ‘good news narrative’ of the major global governance institutions, hunger, malnutrition and food insecurity continue to blight the lives of as many as two billion people (Hickel, 2016). Combining these impacts with other observed phenomena such as the declining viability of farmers, a growing public health burden of dietary-related disease, and severe strain on soils, waterways and ecosystem due to large-scale land-use change driven by industrial agriculture, many scholars contend that national and global food systems are in a state of accelerating crisis (Bello, 2009; Farmar-Bowers, Higgins, & Millar, 2012; Lawrence, Richards, Gray, & Hansar, 2012; McMichael, 2009; Moore, 2015).

The crisis, we argue, is both systemic and existential, in that the integrity and capacity of the agri-food system to continue feeding humanity well for decades, let alone centuries to come, is increasingly in doubt (Willett et al., 2019). The question is: What can be done about it? The food system dilemma is in effect merely one dimension of the larger human species predicament in the new millennium: How can we organise ourselves to inhabit this planet in ways that guarantee not merely our survival but indeed to do so coterminously with the continued integrity and flourishing of all the diverse species and ecosystems upon which we ultimately depend? Ecological theologian Thomas Berry captured this dilemma well in his final book, *The Great Work*: ‘The Great Work now, as we move into a new millennium, is how we can move from a period of human devastation

of the earth, to a period when we would be present to the planet in a mutually beneficial manner' (Berry, 1999, p. 3).

This notion of co-flourishing is also captured in the concept of *symbiosis*, an ecological term that refers to a feeding relationship between two organisms that can be either *parasitic*, *commensal* or *mutual* (Leung & Poulin, 2008). Berry's contention is that humanity is currently in a state of *parasitic symbiosis* with the planet (i.e., we are benefitting while the planet is being harmed), and our challenge and urgent task is to move to a state of *mutual symbiosis* (i.e., the relationship is mutually enhancing). We qualify this by saying that contemporary parasitism does not describe humanity as an undifferentiated and homogeneous whole. Rather, our premise is that the political-economic system by which most human societies are currently organised — capitalism — is by its nature parasitic and exploitative (Sayer, 2015), and the principal beneficiaries of such parasitism are very small in number, as the growing evidence on spiralling global inequality makes abundantly clear (Alvaredo, Chancel, Piketty, Saez, & Zucman, 2017; Goda, Onaran, & Stockhammer, 2016).

We contend, together with Berry and ecological economists such as Kate Raworth (2017), that we must shift from *parasitic symbiosis* to *mutual symbiosis*, from an extractive and exploitative political economy to a more equitable one that meets the needs of all people within the means of the planet. If this task is to be realised, environmental education must play a central role in raising consciousness among growing numbers of people regarding both the unsustainability of the current state of affairs as well as the existence and desirability of feasible alternatives (Davila & Dyball, 2015; Swan & Flowers, 2015). Since the food system is so foundational to all life, and since it is both a cause of many of the ills we are currently experiencing as well as the source of some of the most hopeful and inspiring practices of transformative change, and further that it is an arena of social life that connects 'personal actions with environmental consequences' (Stapleton, 2015, p. 12), we share the view that it is a very fruitful arena for the development of critical environmental education curricula and pedagogies.

This article seeks therefore to elaborate an overview of a theoretical and methodological framework for transformative environmental education in the arena of healthy, sustainable and fair food systems. The first section briefly outlines the nature of the food system crisis and the need for urgent and transformative change. The second section locates food system crises within the field of critical environmental education and, in particular, the emerging subfield of food pedagogies (Swan & Flowers, 2015). The third section introduces the theoretical and pedagogical perspectives that inform the political strategy of transformative food system politics. The fourth section examines the goal and content of the consciousness-raising work of building critical *food systems literacy*. The concluding section offers some reflections on the potential for the broader application and diffusion of this work, as well as avenues for further research and praxis.

Our particular contribution is to outline an explicit political economy of the food system accompanied by a theory of transformative change, to complement recent investigations and discussions highlighting the need for and potential of critical food pedagogies as an especially relevant, practical and powerful arena for environmental education (Crosley, 2013; Harris & Barter, 2015; Swan & Flowers, 2015). In this, we identify with and share Henry Giroux's (2010) conceptualisation of the role of critical pedagogy as being to:

[help] students develop a consciousness of freedom, recognize authoritarian tendencies, empower the imagination, connect knowledge and truth to power and learn to read both the word and the world as part of a broader struggle for agency, justice and democracy. (p. 1)

Food systems in crisis

Contemporary food systems in Australia and globally are accurately categorised as being oligopolistic: they are dominated by a handful of powerful agri-chemical, grain and meat packaging and

trading, food and beverage processing and supermarket corporations (Holt-Gimenez, 2017; Howard, 2016; IPES-Food, 2017b). In recent decades, the driving imperative of these corporate actors, following stock market and financial institution expectations, has been profit maximisation and the generation of shareholder returns (Holt-Gimenez, 2017; Stout, 2015). In this they have been very successful. Agri-food production and retailing, and allied industries are highly profitable. Two examples will suffice. Cargill, the world's largest agri-food company, saw its profits increase by 19% in 2016–2017, to \$US2.85 billion, driven by a growing global appetite for meat protein (Meyer, 2017). Monsanto, the world's largest seed and agri-chemical company, saw its profits in the same period rise by 29% to \$US1.37 billion (Plume, 2017).

There is, however, a serious and troubling contradiction at the heart of national and global food systems. While these systems generate large profits for agri-food corporations and generous dividends for their shareholders, they also produce poor human health and wellbeing outcomes, as well as highly destructive environmental impacts. By some estimates, as many as 2 billion people are malnourished and/or undernourished, while a further 750 million are obese, with more than 1 billion at risk of obesity (Hickel, 2016, 2017). The total human health costs of food systems have recently been calculated at \$US13 trillion, one-sixth of global GDP in 2017 (IPES-Food, 2017a). Agri-food systems are leading generators of greenhouse gas emissions and land-use change, and therefore are major drivers of biodiversity loss (Massy, 2017; United Nations, 2005). A recent assessment of the total value of ecosystem services found *inter alia* that such services estimated their value at \$US125 trillion, thereby contributing significantly more to human wellbeing than global GDP, and further that the loss of such services due to land-use change (not including climate change, the use of agri-chemicals or other human activities) can be estimated at \$US4.3–20.2 trillion per year (Costanza et al., 2014). It can reasonably be assumed, given the scale of the land-clearing practices that convert native forest and grasslands to vast industrialised monocultures (Ramankutty et al., 2018), that current global agri-food systems are responsible for a large proportion of the loss of these invaluable ecosystem services.

While these losses and costs are regarded as 'externalities' by agri-food corporations, the damage suffered by human populations and ecosystems is nonetheless all too real and highly consequential. We contend, first, that the current industrial food system is undermining the health and wellbeing of large and growing numbers of people and the integrity of local, regional and global ecosystems and climatic stability (Willett et al., 2019). Second, we argue that by severely diminishing public and ecological health, the industrial food system is at the same time encountering its own biophysical contradictions: it is undermining the conditions of its own reproduction (Weis, 2010). It is thus not only very damaging, it is *self-destructive*, and thus unsustainable by definition. The case for transformative change is therefore overwhelming and urgent (Willett et al., 2019). How do we get from here to there? Following the pedagogical oeuvre of Paolo Freire (1970), we begin with the premise that critical consciousness-raising among large numbers of people is an essential prerequisite to transformative change.

Food systems, environmental education and food pedagogies

We therefore contend that the role of teaching, education and learning in social change is central and cannot be elided. If, following Breunig, a primary purpose of environmental education is to 'encourage critical reflection on human/nature relations and nurture healthy relationships, both among humans and between humans and other life [forms], while working concurrently toward social and environmental justice' (Breunig, 2014, p. 160), the question must be asked: How well is this purpose being fulfilled?

Recent critical discussions in the literature suggest that the answer would be not nearly as well as might be expected, given the failure to translate the normative aims of environmental education into the desired changes in attitudes and behaviours (Crosley, 2013; Stapleton, 2015; Swan & Flowers, 2015). A number of critiques and explanations for this gap between aims and realities

are offered. A recurring one is that environmental education has traditionally paid insufficient attention to issues of power, race, class, gender and culture, choosing to emphasise individual choices and behaviours rather than collective political action (Crosley, 2013; Stapleton, 2015). One explanation for this is said to be an ongoing focus of environmental education on topics associated with ‘wilderness’, ‘nature’ and non-urban spaces (Crosley, 2013; Stapleton, 2015). This is problematic for at least two reasons. The first is that it reflects a yearning for an untouched and prehuman world, the echoes of which will provide us with little assistance in acknowledging our responsibilities for and dealing with the fraught consequences of the Anthropocene, including our own emotions of grief and hope (among others), in the coming years and decades (Head, 2017). The second is that a continuing focus on the rural implies a corresponding failure to acknowledge the 21st century reality of an increasingly urbanised world in which humans and non-humans will co-create diverse environmental futures (Crosley, 2013; Donati, Cleary, & Pike, 2009). A further factor limiting its effectiveness is that environmental education has been traditionally delivered through formal education systems, such as school-based classroom settings, through conventional pedagogical methods (e.g., lectures), and with a major focus on what are presented as value-neutral science-based curricula (Crosley, 2013; Donati et al., 2009).

For the reasons noted earlier, and explored further below, the study of, and engagement with, food and food systems provide substantive opportunities to address these critiques of environmental education, and enlarge both its sphere of concern and its methods for learner engagement and participation. As Elaine Swan and Rick Flowers put it, quoting Jennifer Sumner (2008, p. 208), ‘eating is a pedagogical act’ because there is a multitude of teaching and learning opportunities at every point in the interconnected web and flow of agents and processes that together comprise the food system and which result in food arriving on the table (Swan & Flowers, 2015, p. 147). From questions such as patterns of land ownership, the control of seeds, and the ecological impacts of large-scale industrialised and chemical-dependent monocultures to the saturation of low-income neighbourhoods with fast food restaurants, the food system ripples with political tensions and power asymmetries (Howard, 2016). Yet, as with traditional environmental education curricula, these uncomfortable matters are for the most part avoided in the conventional health-focused teaching of food in schools (Harris & Barter, 2015).

The prevailing emphasis on individual choices and associated individual behaviour change in environmental education more broadly and in food-related studies in particular has given risen to what Swan and Flowers (2015) term a proliferating ‘moral economy of food pedagogies’, comprising ‘congeries of educational, teaching and learning ideologies and practices carried out by a range of agencies, actors, institutions and media that focus variously on growing, shopping, cooking, eating and disposing of food’ (p. 147). In the context of decades of neoliberal capitalist hegemony in which market-led approaches are privileged and individual consumer sovereignty is reified in what is aptly termed the ‘fetishism of choice’ (Schwarzkopf, 2018, p. 435), both environmental education and food studies curricula run the risk of reproducing and valorising the status quo rather than challenging it, insofar as they deliver a depoliticised and individualised ‘healthism’ that urges students to ‘make better food choices’ (Swan & Flowers, 2015, p. 150). In this context, Swan and Flowers (2015) pose an important question in framing food pedagogies and indeed food movements as sites of ‘epistemological struggle’ in which certain kinds of knowledge are privileged — such as nutritional science — and others are marginalised and silenced — such as the lived realities of migrant communities in low-income urban neighbourhoods (pp. 151–152).

Place-based and critical food pedagogies seek to address many of these failings (Crosley, 2013; Harris & Barter, 2015), and it is clear that food movements can have a direct and positive role to play in this emerging arena of dialectical interactions between the classroom and the space of social activism. For example, food justice movements are deeply rooted in grounded explorations of place and provide learning experiences that largely take place outside of the classroom in settings such as community gardens (Crosley, 2013; Swan & Flowers, 2015). Walter (2013) argues that ‘social movements, including the environmental movement, can be considered as pedagogical

sites for adult learning which foster communicative dialogue, collective identity, democratic civil society and socio-environmental sustainability' (p. 523). In the Australian context (while we draw on that context for a number of examples, it is applicable to other advanced capitalist economies), and drawing on theories of transformative learning and critical consciousness, Davila and Dyball (2015) argue that urban food production systems create opportunities for informal and experiential learning that enable 'urban dwellers [to] develop a broader . . . awareness of [the multiple] social and ecological injustices' (p. 39) that flow from the dominant food system. It is this awareness and understanding, developed through meaningful action, which, the authors contend, provides the greatest opportunity for developing a critical consciousness about food systems and one's role and responsibilities within them. Davila and Dyball (2015) argue further that this makes food sovereignty, as a project for political and economic transformation of the food system, relevant and important in the Australian urban context, through the expansion of a growing ecological citizenry.

Social movements such as food justice and food sovereignty, and related concepts such as ecological and agrarian citizenship, together with place-based and experiential sites of learning, have enriched the field of environmental education through the development of critical food pedagogies. We seek to build on that critical tradition in the following sections of the article through the elaboration of a critical political economy of the food system, which in turn lays the foundation for the discussion of food systems literacy.

Hegemony and counter-hegemony: common sense and good sense

If Karl Marx is regarded by many as perhaps the most astute analyst and critic of the capitalist system in terms of revealing its hidden inner workings, driving logic and inherent contradictions, then the legacy and continued relevance of Italian revolutionary Antonio Gramsci can also be assured as providing a necessary political theory and strategic complement to Marx's economic oeuvre (Williams, 1973). Gramsci dedicated his last years to a detailed study of Italian history in order to develop an explanatory theory for the establishment and maintenance of hegemonic formations of political-economic power over time and space (Gramsci, 1971). Crucially for the purposes of critical environmental education and transformative social and political movements, his work also provided the resources and tools to elaborate and enact strategies to challenge and ultimately transform hegemonic power relations (Femia, as cited in Ives, 2004; McNally, 2009).

The impressive breadth and complexity of Gramsci's work has generated an extensive and expanding literature in multiple disciplines since its first publication in English in the 1970s (Ayers, 2008; Birchfield, 1999; Francese, 2008). Here we focus on the Gramscian concept of 'common sense' (Birchfield, 1999; Hall, 1987). Gramsci saw this as representing, in effect, the cultural DNA of a particular society: the set of norms and taken-for-granted assumptions by which most people lived their lives (Lewis, 2009). In the field of environmental education, there is a resonance here with what feminist pedagogical theorist Carmen Luke termed the 'pedagogical project of everyday life', alluding to the myriad processes of subconscious socialisation continually in motion through popular culture in its diverse forms (Luke, as cited in Swan & Flowers, 2015, p. 151). In developing his theory of hegemony, Gramsci argued that a constellation of dominant power relations was maintained by a mixture of coercion and consent, with the latter being what conferred stability and longevity to hegemonic formations (Femia, as cited in Ives, 2004). 'Consent' was underpinned by the 'common sense of the age' — what Raymond Williams described as a 'saturation of the consciousness' — and a key task of any would-be counter-hegemonic movement was to critique the prevailing common sense, to reveal its limitations and contradictions (Williams, 1973, p. 413).

Critique was a necessary but not sufficient condition for successful counter-hegemonic practice. It had to be accompanied by the creative work of developing an alternative 'good sense', a

coherent narrative that evoked a powerful vision of an emerging transformed social order that would be capable of engaging with broad masses of people because it was based in lived social realities; had wide, potentially universal appeal; and could be conceived as feasible (Ives, 2004). Gramsci's key insight was that a political-economic power formation could be sustained for only as long as the great mass of people believed in its capacity to ensure the conditions of their daily reproduction. Once that belief begins to evaporate, as it does in times of great turmoil and structural crisis, a period of hegemonic instability ensues and transformative change becomes possible (though by no means inevitable). This is where the work of counter-hegemonic social and political movements, underpinned by critical educational pedagogies, will truly be put to the test.

The corporate food regime contra food sovereignty

Applying this theoretical, political and pedagogical framework to the food system, we contend that the Australian and global food systems are dominated by a bloc of transnational agri-food corporations along with sympathetic national governments and global governance and international financial institutions (Holt-Gimenez, 2017). This bloc has achieved hegemonic status for the past several decades and constitutes a political-economic regime of capital accumulation in the agro-food sphere (Holt-Gimenez, 2017). Philip McMichael and Harriet Friedman suggest that the world food and agricultural system is accordingly now characterised by a third corporate food regime, following the settler-colonial (1870–1914) and mercantile-industrial (1945–1975) food regimes of the early and mid 20th century (Friedmann & McMichael, 1989; McMichael, 2009). We contend that the hegemony of the corporate food regime is underpinned by a set of (largely unstated) 'common sense' assumptions: that food is cheap, that food is abundant, that food is a commodity to be bought and sold and traded like any other, and that the health and integrity of national and regional agricultural and food systems is a matter that is secondary to the profitability of transnational agri-food corporations (Holt-Gimenez, 2017; Patel & Moore, 2017).

The hegemony of the corporate food regime has been contested since the mid-1990s by a would-be counter-hegemonic formation: the global movement for food sovereignty. This movement brings together an estimated 200 million small, family and peasant farmers in more than 80 countries across five continents, under the umbrella of *La Via Campesina: The Farmers' Way* (Desmarais, 2007). It also includes a growing number of urban food activists and organisations, as well as several national and local governments that have enshrined food sovereignty principles and aspirations in constitutions, national laws and municipal policies and strategies (Clark, 2016; Davila & Dyball, 2015; Walsh-Dilley, Wolford, & McCarthy, 2016). The core of those principles is, first, that food is not and should not be a commodity but rather should be a public good or, indeed, a commons (Vivero-Pol, 2017). Second, the development and management of food systems should be participatory and democratic, with governance aimed at benefitting the interests of food producers and consumers, rather than, as at present, the interests of transnational agri-food corporations (Wittman, 2010). And third, that the production of food must be undertaken in ways that are regenerative and restorative of soils, waterways and ecosystems, rather than exploitative (Massy, 2017). Corollary to this has been growing support for the adoption and diffusion of the knowledge-intensive and context-specific production methodologies of agroecology in place of the capital-intensive, input-dependent monocultures characterising the industrial food system (Altieri & Toledo, 2011; Massy, 2017).

Food sovereignty therefore has the characteristics of a counter-hegemonic political force at both national and global levels in terms of its critique and its vision for transformative change. At the same time, there are questions about its capacity to generate a vision of a transformed food system that has truly universal appeal, in the sense of being able to mobilise large numbers of people from diverse backgrounds and cultures. This limitation stems in part from its origins

as a farmer-generated movement and discourse (i.e., that the main protagonists in the formation and development of food sovereignty as a new global social movement were family and peasant farmers from diverse countries around the world, as discussed by Annette Annemarie Desmarais [2007] in her narrative history of the first two decades of *La Via Campesina*). In the context of an 'advanced' capitalist country such as Australia, where farmers constitute less than 1.5% of the total population, and farmers with sympathies towards food sovereignty constitute a much smaller group, the focus of food sovereignty and allied projects such as farmers' markets has thus far been on achieving better returns and prices for farmers, as well as addressing regulatory issues that are perceived as impediments to more ethical forms of livestock production (Sullivan, 2017). Such matters are indeed pressing in an agri-food economy that has seen farmgate returns decline dramatically over the course of the 20th century as the supermarkets have risen to a position of dominance in the Australian food retailing sector (Knox, 2015). However, insofar as they are translated in practical terms as calls for consumers to 'pay more' for food, or discourses for a greater understanding for its 'true cost' (Brambila-Macias et al., 2011), they suffer severe limitations as a transformative political strategy. One only needs to observe that an estimated 3.6 million Australians face food insecurity, with occasional or regular dependence on emergency food relief (Foodbank Australia, 2017), as well as the fact that speculation in the housing market has led to millions of Australians paying 30% of more of their disposable income on housing costs (Rowley & Leishman, 2017). As such, calls to 'pay more' for food will not, of themselves, garner mass sympathy or engender political mobilisation. What does this imply for environmental education? We noted earlier how critical assessments of the field have identified the shortcomings of normative exhortations (i.e., 'calls to action') focused on the eating choices and behaviours of individuals that fail to acknowledge structural factors of economy, culture and politics as well as race, gender and class (Stapleton, 2015; Swan & Flowers, 2015). Repeating the same individualised approach to 'make better (food and environmental) choices' will, in our view, not lead to the desired scope or scale of change.

Rather, what is required in our assessment is a more thorough-going critique of the prevailing political economy in its totality. In the first instance, this requires the building of relationships with other food movement actors (especially those representing food workers and the emergency food relief sector), as well as with other social movements tackling entrenched poverty and disadvantage. Second, it means the development of a coherent narrative and accompanying set of proposals for a transformed food system and economy in which all enjoy good and nourishing food at all times, in which all (farmers and food workers especially) are valued, respected and supported, and in which the ecosystems on which all human food systems depend are likewise respected and cared for. In other words, it means a shift to the practice of mutual symbiosis.

Critical food systems literacy

It is at this point that critical environmental education, in the form of critical food pedagogies, has a vital role to play in building a broad understanding of the contradictions and vulnerabilities of the prevailing food system and the urgent need to support the emergence of viable alternatives. Consistent with the principles of food sovereignty, we argue that the critical consciousness-raising that is inherent in emergent food systems literacy work supports the goal of a more democratic and participatory food system through the development of food citizenship (Renting, Schermer, & Rossi, 2012; O'Kane, 2016). As we show below, the literature on food literacy reveals an increasing shift in focus from the individual and their competencies vis-a-vis the making of healthy food choices as well as cooking and food growing skills, towards a recognition that what is required is 'critical food [systems] literacy' that embraces the ecological, political and economic dimensions of the food system and empowers individuals to work with others to bring about transformative change.

Following a thorough review of the literature, Vidgen and Gallegos (2014) offered the following definition of food literacy:

Food literacy is the scaffolding that empowers individuals, households, communities or nations to protect diet quality through change and strengthen dietary resilience over time. It is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet needs and determine intake. (p. 54)

The concept of food literacy had its origins in the growing concern about poor dietary intake and was closely linked to nutrition and health literacy (Azevedo Perry et al., 2017; Nutbeam, 2000, 2008; Truman, Lane, & Elliott, 2017). Food literacy programs were accordingly focused on individual skills and knowledge, based on the idea that deficiency in an individual's knowledge and skills is the main causal factor of negative and inappropriate dietary behaviours within the food system (Kimura, 2011; Palumbo, 2016). Among other consequences, this persistent individual focus contributed to the tendency of 'victim blaming', whereby people on low and fixed incomes are held responsible for their obesity rates (Cullen, Hatch, Martin, Higgins, & Sheppard, 2015; Vidgen, 2016). Such an attribution of individual responsibility diverted attention from how the food system, and the corporate actors which shape it, overwhelms consumers with a flood of unhealthy products and sophisticated marketing (Sumner, 2015). Hence, it is not surprising that studies examining the efficacy of nutritional literacy and cooking skills programs raise questions as to whether they are achieving their stated objectives of better health outcomes (Carrara & Schulz, 2018; Vidgen, 2016), when the macro trends show a major increase in obesity rates globally in the past decade, with expectations of further increases to come (Martin & Peeters, 2017; Swinburn et al., 2011). This individualist focus reinforces rather than challenges the prevailing neoliberal capitalist food system hegemony through what, as we noted earlier, Swan and Flowers (2015) term 'healthism' (p.150).

Vidgen and Gallegos (2014) identified 11 different components of food literacy, categorising these into four main groups: (a) plan and manage, (b) select, (c) prepare, and (d) eat. While the authors do not explicitly use the term 'food system literacy', they recognise that individual behaviours and environmental factors are interdependent and acknowledge that 'more research is needed to examine the relationship between food literacy and healthy eating more broadly including food security, social connectedness and ecological sustainability' (p. 58).

Cullen et al. (2015) extend this conceptualisation explicitly by defining food systems literacy as:

the ability of an individual to understand food in a way that they develop a positive relationship with it, including food skills and practices across the lifespan in order to navigate, engage, and participate within a complex food system. It's the ability to make decisions to support the achievement of personal health and a sustainable food system considering environmental, social, economic, cultural, and political components. (p. 153)

This definition promotes knowledge acquisition in three main areas: (1) how food affects personal health and wellbeing; (2) understanding the totality of the food system from production to access to waste; and (3) the broader context of the food system and how it interacts with social, economic, cultural, environmental and political factors (Cullen et al., 2015, p. 143). Drawing on the theory and practice developed over 15 years by the Community Food Security (CFS) movement in the United States, Cullen et al. (2015) emphasise that food systems literacy exists within an intersection between CFS and food skills, values, beliefs and motivations, each linked to one another in complex ways, as well as being enabled or constrained by policies, programs, and the local food and civic culture. This dynamic between food skills and the broader political, cultural and ecological context has also been framed as the relationship between 'intrinsic' and 'extrinsic' characteristics of food systems literacy (Azevedo Perry et al., 2017, p. 7), leading to what Sumner

(2013) compellingly describes as ‘the ability to read the world in terms of food, thereby recreating it and remaking ourselves’ (p. 86). This framing of food systems literacy echoes Paolo Freire’s critical pedagogy with his emphasis on *conscientisation* (critical consciousness-raising) and *praxis* (Davila & Dyball, 2015), as well as Giroux’s (2010) conceptualisation of critical pedagogy quoted above.

Critical food systems literacy as enabler of food sovereignty and food citizenship

In a landscape of corporate dominance of the food system (Parker & Scrinis, 2014; Richards, Lawrence, Loong, & Burch, 2012) and confusing marketing messages (Martin & Peeters, 2017; Willis, 2017), what difference can greater levels of food systems literacy make? We argue that they are a necessary, but not sufficient, condition for the development of a new societal dialogue around food that embraces culture, ecological stewardship, responsibility and democracy (Slater, 2017). This is the vision advocated by the food sovereignty movement, and its realisation both calls for, and depends upon, the building of a mobilised and motivated community of *food citizens* (Booth & Coveney, 2015; Lozano-Cabedo & Gomez-Benito, 2017; Renting et al., 2012; Sumner, 2015).

Food sovereignty — defined as the demand for a just and democratic food system — shifts the focus from individual food literacy in terms of food and nutrition knowledge and cooking skills to a broader vision of communities’ power over the food system and their ability to engage with the system in their own terms (Desmarais, 2007; Weiler et al., 2014). It bears a close relationship to the concept of ‘food democracy’, a participatory food system in which ‘all members have equal and effective opportunities [to shape it]’ (Hassanein, 2003, p. 83; Lang & Heasman, 2004). The development and practice of food citizenship progresses us towards food sovereignty since it entails direct and deep engagement with the food system. Such engagement can take the form of solidarity purchasing arrangements (e.g., community-supported agriculture) or involvement in various forms of urban agriculture that, among others things, enable the recovery of lost knowledge in food provisioning and a connection with food’s ecological dimensions (Renting et al., 2012). Further manifestations of food citizenship can range from participation in social movements agitating for legislative and regulatory reform to the establishment of structured dialogic spaces for food system analysis and action such as food policy coalitions and councils (Renting et al., 2012).

Lozano-Cabedo and Gomez-Benito (2017) have developed a theoretical model of food citizenship through a series of eight normative propositions that can be grouped around core ideas of universality, cosmopolitanism, justice and fairness, individual and collective responsibility to and respect for all life, and participatory governance (pp. 12–19). The authors rightly recognise that food citizenship ‘is a concept in constant redefinition as it depends on food movements’ social praxis and on individual food behaviour [and it] only takes effect through participation and the defence of the recognition of rights and duties and the possibility to exercise them’ (p. 19). Importantly, they acknowledge that:

Food citizenship seems to be difficult to exercise in an unequal context dominated by international agri-food oligopolies and big corporations. It requires a new political and economic model capable of combining sustainability of food ... with social justice and sovereignty for peoples and individuals ... (p. 17)

Critical food systems literacy is similarly in a state of constant construction, in a dialectical relationship with the strategies, advances and reflections of food movements as they seek to mobilise larger and more committed numbers of food citizens in attempts to reshape and democratise the food system. Efforts to expand food systems literacy can thus be viewed as an essential first

step in the development of the critical consciousness and sense of collective identity that is the foundation of food citizenship; and, in turn, the exercise of food citizenship brings the goal of food sovereignty closer to realisation.

Conclusion and future directions

Reliance on health promotion messaging has not stemmed the rise of diet-related illness, and there is now widespread agreement that major changes to the current obesogenic environments will be necessary (Sacks, Swinburn, & Lawrence, 2008). Such changes will undoubtedly be legislative and regulatory, including changes to the planning framework to restrict new fast food outlets, especially around schools (Janssen, Davies, Richardson, & Stevenson, 2017), as well as fiscal measures to stem the consumption of unhealthy products such as a sugar tax (Colchero, Rivera-Dommarco, Popkin, & Ng, 2017). Achieving such changes in the face of determined opposition from powerful corporate lobby groups will require a sustained effort from substantial numbers of food citizens.

Yet the public health crisis is but one expression of the food system crisis; and the food system crisis is but one expression of the broader political, economic, ecological and cultural crisis confronting humanity in the 21st century. Effective food citizenship does require a 'new political and economic model' (Lozano-Cabedo & Gomez-Benito, 2017), but that model will not be achieved without sustained and mass political mobilisation and participation. We have argued, building on the engagement of the environmental education literature with critical food pedagogies, that the foundations of this praxis are to be found in the development of critical food systems literacy, which enables food citizens both to understand the contradictions inherent in the current food system and to articulate a coherent and compelling vision of a better food system that values human and ecological health and wellbeing above corporate profit. Efforts to achieve this have been undertaken in the form of community-led 'people's food policy processes' in the past decade in Canada, the United Kingdom and Australia (Levkoe & Sheedy, 2017). In a future article we will reflect on the impacts to date of those processes, as illustrative of ongoing attempts to create and enact critical food pedagogies.

Author ORCID. Nicholas Rose 0000-0002-2640-0198

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Nick Rose is a specialist in sustainable food systems, food sovereignty and food security. He co-founded and coordinated the Australian Food Sovereignty Alliance (2010–2015), and is the Executive Director of Sustain: The Australian Food Network. He is a Partner Investigator on the Australian Research Council Discovery Project, Strengthening Food Systems at the Local Level (2019–2021). He is the editor of *Fair Food: Stories from a Movement Changing the World* (Rose, 2015) and co-editor of *Reclaiming the Urban Commons: The Past, Present and Future of Food Growing in Australian Towns and Cities* (Rose and Gaynor, 2018). He lectures in food systems, food movements and food politics at the Bachelor of Food Studies and Master of Food Systems and Gastronomy at William Angliss Institute in Melbourne.

Izo Lourival is an Investment Manager covering the renewable energy sector at Invest Victoria, Victoria Government’s investment attraction agency. Izo is also an interdisciplinary researcher completing a Master of Sustainable Practice at RMIT University in Melbourne, Australia. Izo’s main research interests are in sustainable business practices and sustainable food systems reform and policy. His current research work involves examining the development and impacts of critical food systems literacy, and documenting the establishment of a grassroots food movement and community-generated food plan in a municipality in Victoria, Australia.

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