**What is the ecological university and why is it a significant challenge for higher education policy and practice?**

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**Abstract**

*This paper explores the idea of the ecological university and the broad challenges it poses for higher education policy and practice. It begins by considering the contribution to this idea by Ron Barnett (Barnett, 2010) and then focuses on his use of Felix Guattari’s interconnected triplex of the psyche, society and nature (Guattari, 2000). This paper expands on Barnett’s discussion of Guattari’s ecosophy and identifies some additional possibilities for the ecological university. It does this by connecting Guattari’s ecosophy to the ‘ecology of mind’ proposed by Gregory Bateson (Bateson, 1972). The combined work of Barnett, Guattari, Bateson, and the Bateson advocate Chet Bowers, (e.g. Bowers, 2011a) is then used to sketch a ‘social practice’ model of ecological intelligence. While this is only a brief sketch, it does provide additional scope for understanding how the ecological university, focused on developing ecological intelligence, represents a significant challenge to higher education policy and practice, including how teaching and learning are constructed.*

Keywords**:** Ecological intelligence, neoliberalism, higher education policy.

**Introduction**

Ronald Barnett has claimed that our ideas about the university are “hopelessly impoverished” (Barnett, 2013, pp. 1). In order to help enrich our conversations, Barnett has used a critical realist approach to philosophically evaluate and imagine different conceptualisations of the university. Barnett has critically evaluated concepts such as the ‘liquid university’ and the ‘authentic university’, but the framework he finds has the most potential for considering the evolution of higher education is that of the ecological university (Barnett, 2010).

The idea of an ecological university appears, on the surface at least, to be a highly relevant concept for a world in the midst of a Global Ecological Crisis (GEC). Across a range of planetary boundaries the expanding footprint of humanity is putting the biosphere at risk (Rockström, 2009). The Earth’s flora and fauna are said to be experiencing the sixth great mass extinction and scientists are now considering whether or not to classify humanity’s impact on the planet in terms of a new geological era – the Anthropocene (Steffen, Grinevald, Crutzen, & McNeill, 2011). When also seen against the backdrop of global poverty, inequality, famine and war, the idea of an ecological university sounds like a concept worthy of attention. From an educational perspective we might even ask if it is an idea that could help save the planet?

Drawing initially on the work of Ron Barnett, this paper explores the idea of the ecological university. From Barnett’s perspective, the ecological university is an oxymoronic “feasible utopia” which “could just be realised” albeit that it is also “unlikely” to be realised (Barnett, 2010, pp. 12). Citing forces such as neoliberalism and human self-interest, Barnett notes that there are “good grounds” for believing that the ecological university can be “brought into being”, and he points to “micro examples of the imagined university” that can already be found (Barnett, 2013, pp. 27). In drawing out the idea of the ecological university, and also reflecting on the challenges it poses to educational policy and practice, this paper expands on aspects of the Guattarian philosophical framework used by Barnett. In turn, this paper links Guattari’s thinking to the work of the anthropologist Gregory Bateson, and thereby extends Barnett’s depiction of the ecological university in terms of what might be called a ‘social practices’ approach to ecological intelligence. There is not space in this paper to develop a full account of the possibilities for ecological intelligence in higher education, but in the brief sketch provided, it is possible to understand the fundamental challenge the ecological university poses to current higher education policy and practice, and to also to see a little more clearly how such an idea “could just be realised”.

**What is the Ecological University?**

Ron Barnett has been a significant voice in the relatively new field of the ecological university (Barnett, 2010). While Barnett’s ecological university has a responsibility or ‘care’ for the natural ecology, the interests of the ecological university extend to a more ‘joined up’ understanding of individuals, society and nature. He takes as a starting point for this work the interconnectedness of the psyche, society and the biosphere as set out by Félix Guattari in *The Three Ecologies* (Guattari, 2000). Barnett does not critically evaluate Guattari’s philosophy but he does use Guattari’s ecological ‘metaphor’ to explain the possible connections the university makes across its intellectual, societal, global and environmental relationships. In particular, Barnett describes how there are multiple ecologies relevant to the ecological university. Drawing on many other theorists, Barnett outlines that there are different knowledge ecologies and learning ecologies, which exist “against the ethical horizon” (Barnett, 2010, pp.142) of the ecological university. Effectively, Barnett’s multiple ecologies underscore how the ecological university is focused on support for the wellbeing or flourishing of various natural and social domains.

Barnett concludes that the ecological university is also a university for “the Other” Barnett, 2010, pp. 151). This is in contrast to the (Humboldtian) research university which Barnett calls a university ‘in-itself’, or the (neoliberal) entrepreneurial university which he describes as a university ‘for-itself’. An ecological university can therefore be expected to impact various cultural, political, environmental and social dimensions. This idea points to an enormous scope for the ecological university, from the local to the global (and beyond). The broad scope of the ecological university helps define its utopian qualities, and also that the ecological university, in a Heideggerian sense, is always in the process of becoming. Its broad scope and ongoing quests means that, for Barnett at least, the ecological university “is none other than the fullest expression of the idea of the university” (Barnett, 2010, pp. 151).

The situated qualities of the ecological university raise questions about its relationship with knowledge. Barnett partners with Nicolas Maxwell (Maxwell, 2006, Barnett & Maxwell, 2007) to help clarify this relationship. Instead of a more specialist, reductionist, (academic) and narrow conception of knowledge, Maxwell implies that knowledge is interconnected with the concept of wisdom, especially at a university, and therefore needs to be positioned, not just as an end itself, but as part of a contextual focus on “wisdom inquiry”. Maxwell has set out four criteria for wisdom inquiry:

1. Articulate and seek to improve the specification of the basic problem(s) to be solved.
2. Propose and critically assess alternative possible solutions.
3. When necessary, break up the basic problem to be solved into a number of specialized problems.
4. Inter-connect attempts to solve the basic problem and specialized problems, so that basic problem-solving may guide, and be guided by, specialized problem-solving.

Maxwell argues that although “modern science and technological research have, of course, produced many immense benefits”, they have also had a hand in population growth, the destruction of natural habitats and the current mass extinction of our biosphere (Maxwell, 2011, pp. 123). In this regard, modern science has been too fixated on ‘number 3’ – the breaking up of basic problems into more specialised problems, and far less concerned about why we are dealing with a particular issue, or understanding how such an issue relates back to the overall context in which we find ourselves.

Maxwell’s emphasis on wisdom inquiry is a potentially radical aspect of the ecological university. This is not such a radical idea however, as to prevent Maxwell pointing to instances of university research and teaching that are attempting to build a more active form of reason. He describes, for example, how new interdisciplinary academic units are demonstrating a more integrated set of values, emotional investment and overall connectedness in their pursuit of solutions to bigger problems. He also discusses specific teaching and research initiatives from the universities of Oxford and Cambridge, which are focused on global health, sustainable cities, intercultural interactions and human wellbeing.

With Maxwell’s examples in mind, Barnett has also outlined the potential of the ecological university to contribute to multiple domains. Central to Barnett’s outline is the linking of the ecological university with the concepts of sustainability and wellbeing (Barnett, 2013).

The ecological university would be a university embarked on a process of its own becoming, guided by the ideas of sustainability and wellbeing. The concept of sustainability is here oriented towards the sustainability of the university’s multiple ecologies – personal, institutional, cultural, global, physical and social. ...However, the ecological university would not be content in rooting its self-understanding in the concept of sustainability, for it would want especially to embrace the concept of wellbeing. This is a much more demanding concept than sustainability, for whereas sustainability stays within present understandings of natural states, wellbeing can always be improved and its very definitions can always be advanced. (p. 113).

There is a very sizeable and diverse literature on the concept of the sustainable university (see for example Barth, 2014; Jones, Selby, & Sterling, 2010; Martin & Samels, 2012; Sterling, Maxey, & Luna, 2013). Barnett routinely avoids this literature however, in favour of a more philosophically grounded discussion. Certainly, outside of this paper, this omission leaves a considerable amount of work that could be done in exploring how the ecological university and the sustainable university can inform each other. Similarly, there is also a considerable amount of work that could be carried out in exploring the possibilities for wellbeing at the ecological university. A little frustratingly perhaps Barnett does not define wellbeing, although it might be inferred from his characterisation of the ecological university as an institution for ‘the other’, that he is drawing on a broad or eudaimonic conception of wellbeing (Clack, 2012; Deci & Ryan, 2008; Estola, Farquhar, & Puroila, 2014; Ryan & Deci, 2001). Barnett does not use the term ‘eudaimonic university’, and this is not a popular term in the higher education literature, although the idea raises many possibilities. Among those that exist in practice is, for example, the work of the South African Melanie Walker. The focus of Walker and her colleagues has included the development of human wellbeing and capabilities, including how universities can be agents of social change (Boni & Walker, 2013; Walker & McLean, 2013).

While Barnett does not discuss the work of Walker, he does provide other examples of how an ecological university, with its (somewhat undefined) links to wellbeing and sustainability, could operate (Barnett, 2010, pp. 148-149). These ideas include:

* developing and vigorously pursuing a strategy of civic and community engagement;
* holding public lectures – and putting podcasts on-line; working with local/regional authorities and community and third sector groups in addressing social issues;
* working with groups/communities in the developing world (projects here could include cultural projects as well technological and social projects);
* offering pro bono advice;
* producing materials for public consumption (a university in Colombia produces mini-booklets containing accessible work by its scholars for public consumption at minimal prices)
* research that tackles issues of concern and that might help to alleviate suffering or deprivation (locally and globally);
* offering to accredit the socially-oriented activities of students off-campus
* promoting inter-connectedness across disciplines and forging public-oriented programmes of activity.

Barnett stresses that these examples do not amount to a “blueprint” for the ecological university. He also makes clear that because of the scope of our interconnections, including our (never-ending) potential for wellbeing, the ecological university is not limited in terms of its activities. In this sense while many of the above examples seem very feasible, especially compared to the potentially radical wisdom inquiry of Maxwell, they might also be seen as the beginning of an even more radical set of possibilities.

**Guattari, Bateson and Ecological Intelligence**

Although Barnett does not provide an exhaustive evaluation of Guattari’s philosophy, he does borrow a key Guattarian term to help describe the approach of the ecological university:

This university adopts an ‘ecosophical perspective’ (Guattari, 2000, pp. 34) a perspective that works at all of the levels of its being as a university.

Barnett misses an opportunity to more fully reveal the potential of this ‘ecosophical’ university by arguably limiting his discussion of Guattari’s thinking. A deeper understanding of Guattari’s concept of ecosophy, for example, is available in the essay ‘Remaking Social Practices’ (Guattari & Genosko, 1996). Guattari wrote this after *The Three Ecologies* and only months before his untimely death. In ‘Remaking Social Practices’ Guattari points to the circular qualities of our interconnected mental, social and natural ecologies. In particular he points out that our mental ecology (especially in the era of mass media) is linked, not just to thinking, but to action itself – our social practices. Indeed it is ‘what we do’ and the environment in which we operate, that changes our thinking, which, in a circular way, helps in turn to influence our context, environment, thoughts and actions.

Without a change in mentalities, without entry into a post-media era, there can be no enduring hold over the environment. Yet, without modifications to the social and material environment, there can be no change in mentalities. Here, we are in the presence of a circle that leads me to postulate the necessity of founding an "ecosophy" that would link environmental ecology to social ecology and mental ecology. (Guattari & Genosko, 1996, pp. 264).

Guattari’s point here is one that is highly relevant to our understanding of conscious and unconscious subjectivity. It is a model of human thought and action which considers political and social change as more than a rational change in ideas and a subsequent change in action. Guattari is suggesting a situated, humane, aesthetic, dispersed, poststructural and rhizomic quality to human subjectivity (Peters, 2013). Guattari finds that meaningful ‘environmental change’ is linked to a change in the intellectual and social systems, especially those that champion aspects such as consumerism, rapacious capitalism and narrowly economic forms of individualism.

An essential condition for succeeding in the promotion of a new planetary consciousness would thus reside in our collective capacity for the recreation of value systems that would escape the moral, psychological and social lamination of capitalist valorization, which is only centred on economic profit. The joy of living, solidarity, and compassion with regard to others, are sentiments that are about to disappear and must be protected, enlivened, and propelled in new directions. (Guattari & Genosko, 1996, pp. 266).

While not set out in meta-organising terms like wellbeing and public good, Guattari presents, near the end of ‘Remaking Social Practices’, a particular form of ecological democracy to help deliver a new planetary consciousness. This is a complex, plural vision, of a society that is focused on support for the ‘other’ (possibly human and non-human).

Ecosophic democracy would not give itself up to the facility for consensual agreement: it will invest itself in a dissensual metamodelization. With it, responsibility emerges from the self in order to pass to the other. (Guattari & Genosko, 1996, pp. 272). 1

In terms of this paper, Guattari demonstrates both an ‘ecosophical’ standpoint against the ‘valorisation’ of capitalism as well as an emphasis on the need for new social practices as part of a circular improvement of our mental ecology, social ecology and natural ecology. Significantly, and with regard to the ‘circular’ structure of Guattari’s discussion of social practice, we need to understand the links that exists here between Guattari’s work and the work of the anthropologist Gregory Bateson.

There is an ecology of bad ideas, just as there is an ecology of weeds. (Bateson, 1972, pp. 492).

Indeed Guattari begins *The Three Ecologies* with the above quote from Gregory Bateson. This sentence links the growth of weeds to the ‘weedy ideas’ that characterise the environmental destruction of what Guattari calls Integrated World Capitalism (IWC). While this is an image which broadly connects social and natural ecologies, it also points to the importance of Bateson’s ‘recursive’ epistemology in the formation of Guattari’s ideas about the interconnectedness in *The Three Ecologies*, and, eventually, to the points he raises in ‘Remaking Social Practices’.

Gregory Bateson is perhaps best known as a cyberneticist and anthropologist, but his contributions extend to understanding the causes of the Earth’s ecological crisis, including the contribution made to this crisis by patterns of instrumental or technocratic thought. In this regard, Noel Charlton (Charlton, 2008) has cited a passage from Bateson’s daughter, Mary Catherine Bateson, about her father’s concern.

Gregory was haunted in his last years by a sense of urgency, a sense that the narrow definition of human purposes, reinforced by technology, would lead to irreversible disasters, and that only a better epistemology could save us. Certainly irreversibilities lie all around us; many, like global warming, the decay of the ozone layer, and the movement of poisons through global food chains, are set on courses it is too late to change although we have yet to suffer their full effect. . . . But the habits of mind that he described can be seen in every newspaper or newscast: the search for short-term solutions that worsen the problem over time (often by mirroring it, such as violence used to oppose violence); the focus on individual persons or organisms or even species, seen in isolation; the tendency to let technological possibility or economic indicators replace reflection; the effort to maximize single variables (like profit) rather than optimizing the relationship among a complex set of variables. (pp. 6).

In this passage from Mary Catherine, we can see something of Gregory Bateson’s interest in systems, information, feedback, relationships and interactions. At the end of the anthology, *Steps Towards an Ecology of Mind*, (Bateson, 1972) and in later texts such as *Mind and Nature* (Bateson, 1979), Bateson uses this thinking to develop the idea that there is no easy or Cartesian separation of ‘what’s inside’ and ‘what’s outside’. It is in the context of such thinking that we can understand Bateson’s point that “the organism which destroys its environment destroys itself” (Bateson, 1972, pp. 491). On the surface at least, an implication of this idea is that our society has to move from understanding evolution, (and nature) as a series of atomised species fighting for survival and towards seeing life (creatura), including human life, as existing in a situated, interconnected relationship with its environment.

There is deeper insight here too, one that understands the interconnected relationship between organism and environment as being a type of mind – an ecology of mind. Bateson makes this point by stating that the organism plus environment is an evolutionary unit that is identical with this situated, ecological conception of ‘mind’.

The total self-corrective unit which processes information , or, as I say, ‘thinks’ and ‘acts’ and ‘decides’, is a system whose boundaries do not at all coincide with the boundaries either of the body or of what is popularly called the ‘self’ or ‘consciousness’; and it is important to notice that there are multiple differences between the thinking system and the ‘self’ as popularly conceived. (Bateson, 1972, pp. 319).

There’s a complexity to this conceptualisation that goes beyond straightforward feedback systems and posits the situated or interconnected qualities of thought, response and action. This complexity gives rise to the ‘recursive epistemology’ developed by Bateson (Harries-Jones, 1995). Bateson uses the image of someone chopping wood to explain the information exchange occurring between the brain, the eye, the blade and the fibres of the tree (Bateson, 1972). A more satisfying story perhaps, which highlights the dynamic and recursive interconnectedness of natural information systems, is reflected in the popular account of what happened with the return of wolves to Yellowstone National Park. Having been removed because of their perceived threat to human life and agriculture, the re-introduction of wolves led to a ‘trophic cascade’ which influenced changes in the grazing patterns of deer, the return of different plant species, dramatic changes in flora and fauna patterns and eventually to changes in the structure of the river itself (How wolves change rivers, 2014). In Batesonian terms the wolves were a ‘difference which made a difference’ and part of a complex system effect that can be understood as a form of intelligence.

Outside of this popular story, there appears to be some dispute as to the extent to which the effect of wolves took place as part of a more complex set of ecological processes (Did the Reintroduction of Wolves Truly Change Yellowstone? 2014). Either way, the non-linear and complex set of processes connected to the return of wolves (and no doubt other things) helps to show the complex ways change operates in (environmental) systems. Bateson’s thinking suggests that there is a recursive or looping structure to these dynamics that gives us an important epistemological insight to how a variety of systems, including the way people think and act, most notably in habitual and environmentally damaging ways.

I believe that this massive aggregation of threats to man and his ecological systems arises out of errors in our habits of thought at deep and partly unconscious levels. (Bateson, 1972, pp. 495)

As Chet Bowers points out (Bowers, 2011a), recursive misconceptions (habits of mind) are handed down to us in intellectual traditions - from times when we did not understand that humanity could push up against the limits of the biosphere. Drawing on Bateson’s ideas, Bowers suggests that such conceptions are reinforced over time, becoming embedded in how we talk and act. Bowers points in particular to mainstream Western ideas about progress and technology as a culturally embedded type of habitual narrative that we need to respond to with radical education.

Bowers uses the ideas of Bateson (but not Guattari) as the basis of his own emphasis on ecological intelligence. In particular Bowers points out that many of the liberal traditions that govern the thought of Western schools and universities are ‘taken-for-granted’ assumptions that form a rarely questioned ‘objectivity’ and an unconscious reinforcement of anthropocentricism, economic notions of progress, techno-optimism, rational and autonomous individualism, as well as the idea that we can indefinitely expand the economy (Bowers, 2010, 2012). Bowers suggests that much of what passes for critical thought in the West fails to engage with these recursive assumptions and therefore fails to address the roots of the ecological crisis. Indeed these ideas are a barrier to our society developing a more widely held understanding that we could call ecological intelligence.

To do justice to Bower’s work, one of the key aspects of Bower’s description of ecological intelligence is the importance placed on the ‘cultural commons’. In broad terms the cultural commons represents the wisdom, often inter-generational, that and provides humans with more sustainable and ethical ways to be. In everyday terms, the backyard garden is a Western tradition that is challenged by industrial farming, fed by artificial fertiliser and diesel transportation. In cultures outside the West, the cultural commons represents a vast encyclopaedia of social practices that support a more rewarding, sustainable and traditional existence, and arguably one more rewarding than a marginal living in everyday industrial society (see also Bowers 2011b, 2012).

**Ecological intelligence and social practice**

Bowers has been an especially constructive force linking the ideas of Gregory Bateson to contemporary education (e.g. Bowers, 2010, 2011a, 2011b). His signalling of the importance of ecological intelligence reinforces Barnett’s points about the possibilities for the ecological university. Moreover, with an over-arching concept of ecological intelligence, it also possible to see how the work of a variety of writers could be used to deepen this idea, and make it a powerful aspect of the ecological university. Somewhat dauntingly, it is worth emphasising that there is an ecology of ecological viewpoints from which to develop a fully conceptualised model of ecological intelligence. This is book length project (if not more) and there is clearly not space to carry out that work here. Nevertheless, it is still possible (and important) to use the combined points raised by Barnett, Guattari, Bateson and Bowers to sketch out the idea of ecological intelligence to help demonstrate something of the challenge a university based on these ideas could be to existing policy and practice.

Central to this model of ecological intelligence is understanding the role played by deep assumptions and (recursive) social practices. Indeed it is arguably a key challenge for the student at the ecological university to understand how so many of the ideas that structure the ‘Business As Usual’ (SANZ, 2009) operations of global capital exist as unconscious assumptions of what is normal, ‘common sense’ and something ‘everyone does’. Linked to this, is the point is real change in social practices goes beyond a critical or rational model of change and is linked to the ecosophical notion of social practices. Importantly, something of this realisation, namely that social change occurs beyond a model of ‘the rational individual’ (and needs to consider people in their social and material contexts) is evident, in the emerging literature dealing with social practices, human subjectivity, social contexts and pro-environmental change (Hargreaves, 2011). A key question therefore, for those academics considering for example the concept of an ecological curriculum or ‘ecological humanities’ (Farrelly, 2010), is how many of their students understand and apply such a ‘post-rational’ social practices understanding of environmental change?

The ecologically intelligent student therefore needs to have a deep understanding of the interconnected relationships between our conscious and unconscious thinking, our social (and economic) structures and humanity’s effect on the biosphere. Unlike mainstream economics, the ecologically intelligent student would understand that we can not indefinitely expand the economy or easily decouple our use of resources from the expanding production of goods and services (see also Daly, 2004, Dietz and O’Neill, 2013). The ecologically intelligent student would also bring doubt to commonly held beliefs about progress, the power of technology and the extent to which we exist as autonomous atoms in a marketised universe. As a counter-balance they would also critically value cultural traditions and look to find ways to support social practices that have a sustainable history, structure and impact upon the planet.

Ultimately the ecologically intelligent student would be interested in the diverse wellbeing of the planet. They would be less interested in placing monetary wealth and consumer driven enjoyment at the centre of their lives and be far more interested in developing the multi-dimensional potential of themselves and others (within planetary boundaries). To return to Barnett’s initial point about our ideas about the university being “hopelessly impoverished”, the successful student or staff member at the ecological university would be imaginative, they would not be content with the status quo and they would consistently work towards new ways of developing wellbeing and sustainability.

Finally, in this too brief section, a point that needs to be especially emphasised is the place of compassion, empathy and care in the ecologically intelligent student. In the majority Western tradition, these more affective qualities exist outside critical thinking, and therefore mainstream (Western) notions of intelligence, consciousness and subjectivity. However, in a framework that highlights how unconscious assumptions help shape Western culture, it seems fitting to point out that care itself is at least a partially unconsciously social practice towards the other. Indeed compassion is a response linked to an empathetic understanding of the systems faced by humans and non-humans and its demonstration should arguably be considered an act of situated intelligence.

**Ecological intelligence and the challenge to higher education policy and practice**

The sketch of ecological intelligence above suggests many possible challenges for educational policy and practice. In the space available however, there are two major points worth emphasising in regard to how the ecological university (with ecological intelligence) represents a significant challenge to higher education policy and practice. The first of these is the need for policy structures to adopt a far broader approach to understanding the ‘value’ of higher education. This is particularly true in countries such as New Zealand and Australia where neoliberalism is the dominant force in higher education policy. Indeed a model of the ecological university, featuring a Batesonian/Guattarian concept of ecological intelligence, represents a stark alternative to, for example, the inherently narrow and economic focus we see in such ‘zombifying’ (Harper, 2013) policy documents as New Zealand’s *Tertiary Education Strategy* (Ministry of Education, 2014) and Australia’s ‘Bradley Report’ (Bradley, Noonan, Nugent, & Scales, 2008). These are not new arguments to many in the higher education literature, but they do provide a framework for an ecological future. Instead of a primary or central focus on economic growth, employment and international competitiveness, an ecological university would measure itself against its contribution to the wellbeing of various mental, social and environmental ecologies. It would be far more concerned with the quality of its impact on the world, and less fixated on the number of publications it achieved, or the dollars gained from international students.

Linked to this challenge are the ‘evaluative’ difficulties in estimating the worth of activities that are not so easily quantified. The current quasi-scientific process of focusing on variables that can be easily measured, shows something of how technocratic practices dominate higher education and operate to narrow educative activity towards the unecological. While the evaluative possibilities for measuring diverse worth can not be explored in any depth here, it might be wryly added that such a collection of evaluation processes would be more sophisticated than a league table of ‘Positive Ecological Impact’.

The second challenge relates more directly to teaching and learning in universities. It connects to the idea that our society needs to respond to its deep assumptions and make changes in the way its social practices underpin our unhealthy mental, social and natural ecologies. Specifically, a focus on ecological intelligence asks universities to reconsider its strictly rational, scientific and conscious approach to knowledge. More than Maxwell’s quest for wisdom inquiry, an understanding of the way in which our ideas are recursively and unconsciously shaping our social practices demands that universities find new ways to teach and learn. There is a shift in focus here from universities as knowledge producers and distributors, to becoming actual communities of human flourishing or development and in support of human flourishing and development. If learning and change are to occur in a conscious and unconscious change in our social practices, in our imaginative and critical contexts, then how are universities to develop approaches that transform the way students respond to the world? In very simple terms, how do universities help students to love and care for the planet? This challenge is also about helping students develop intelligence that includes them being compassionate, empathetic, systems thinkers. This is in many ways an ultimate challenge for organisations that have historically tended to put aside issues of student (and planetary) wellbeing in favour of ensuring rigour, departmental silos of knowledge, individualised critical thought and academic excellence.

**Conclusion**

The idea of the ecological university is an emerging concept. It makes its way in a world dominated by neoliberal approaches to educational policy and practice. Most certainly Ron Barnett is correct to say that our ideas about higher education are “hopelessly impoverished”, but his concept of the ecological university does at least provide a framework for new ideas and new challenges to what has become a dangerous status quo. In exploring ideas about ecological intelligence and the ecological university, this paper shows something of the fundamental challenge such concepts offer to the status quo. They are a direct challenge to educational policy that see predominantly narrow forms of economic value in higher education and a significant challenge to education practice that is satisfied with liberal and rational knowledge silos, decontextualised from caring about the wellbeing of others. Further work is required on what counts as ecological education and ecological intelligence. This work is likely to reveal more about the scope and nature of the challenges these concepts pose to current policy and practice. Perhaps optimistically, this work will also find more and more ways in which current practices can also be modified for a better planetary future.

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**Notes**

1. Interestingly, comparisons might be drawn here between the ‘dissensual metamodelization’ that Guattari posits as the basis for an ecosophic democracy and the ‘community of dissensus’ suggested by Bill Readings at the end of his famous work The University in Ruins (Readings, 1996).

**References**

Barnett, R. (2010). *Being a university*. New York, London: Routledge.

Barnett, R. (2013). *Imagining the university*. New York, NY: Routledge.

Barnett, R., & Maxwell, N. (2007). Editorial: Wisdom in the university. *London Review of Education*, 5(2), 95-96. doi:10.1080/14748460701440335

Barth, M. (2014). *Implementing Sustainability in Higher Education*. London and New York: Taylor & Francis.

Bateson, G. (1972). *Steps to an ecology of mind: collected essays in anthropology, psychiatry, evolution, and epistemology*. San Francisco: Chandler Pub. Co.

Boni, A., & Walker, M. (2013). *Human development and capabilities: re-imagining the university of the twenty-first century*. New York, NY: Routledge.

Bowers, C. (2010). The insights of Gregory Bateson on the connections between language and the ecological crisis. *Language and Ecology, 3(2),* 1-27.

Bowers, C. (2011a). *Perspectives on the Ideas of Gregory Bateson, Ecological Intelligence, and Educational Reforms*. Eugene, OR: Eco-Justice Press LLC.

Bowers, C. (2011b). *University Reform in an Era of Global Warming*. Eugene, OR: Eco-Justice Press.

Bowers, C. (2012). Questioning the idea of the individual as an autonomous moral agent. *Journal of Moral Education, 41(3)*, 301-310. doi:10.1080/03057240.2012.691626

Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008). *Review of higher education in Australia*, final report.

Charlton, N. G. (2008). *Understanding Gregory Bateson: mind, beauty, and the sacred earth*. Albany: State University of New York Press.

Clack, B. (2012). What difference does it make? Philosophical perspectives on the nature of well-being and the role of educational practice. *Research Papers in Education*, *27(4)*, 497-512. doi:10.1080/02671522.2012.690239

Daly, H. E., Farley, Joshua C. (2004). *Ecological economics: principles and applications*. Washington: Island Press.

Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: an introduction. *Journal of Happiness Studies*, *9(1)*, 1-11. doi:10.1007/s10902-006-9018-1

Did the Reintroduction of Wolves Truly Change Yellowstone? (2014, March, 20). *WWF.* Retrieved from http://goodnature.nathab.com/video-did-the-reintroduction-of-wolves-truly-change-yellowstone/.

Dietz, R., & O'Neill, D. W. (2013). *Enough is enough: building a sustainable economy in a world of finite resources*. Abingdon, Oxon: Routledge.

Estola, E., Farquhar, S. & Puroila, A-M. (2014). Well-Being Narratives and Young Children. *Educational Philosophy and Theory*, *46(8),* 929-941. doi:10.1080/00131857.2013.785922

Farrelly, T. (2010). *Reimagining ‘environment’ in sustainable development*. (Institute of Development Studies Working Paper Series 1/2010). Palmerston North, N.Z.: Massey University. Institute of Development Studies.

Guattari, F. (2000). *The Three Ecologies*. London; New Brunswick, N.J: Athlone Press.

Guattari, F., & Genosko, G. (1996). *The Guattari Reader*. Cambridge, MA, USA; Oxford, UK: Blackwell Publishers.

Hargreaves, T. (2011). Practice-ing behaviour change: Applying social practice theory to pro-environmental behaviour change. *Journal of Consumer Culture*, *11(1)*, 79-99.

Harper, R. (2013). 'Being’ Post-death at the Zombie University. In R. W. A. Whelan, & C. Moore (Eds.), *Zombies in the Academy: Living Death in Higher Education* (pp. 27-38). Bristol: Intellect.

Harries-Jones, P. (1995). *A recursive vision: Ecological understanding and Gregory Bateson.* Toronto: University of Toronto Press.

How Wolves Change Rivers. (2014, 3 March). *The Guardian*. Retrieved from http://www.theguardian.com/science/grrlscientist/2014/mar/03/how-wolves-change-rivers.

Jones, P., Selby, D. D., & Sterling, S. R. (2010). *Sustainability education: perspectives and practice across higher education.* Washington, DC; London: Earthscan.

Martin, J., & Samels, J. E. (2012). *The sustainable university: green goals and new challenges for higher education leaders*. Baltimore: Johns Hopkins University Press.

Maxwell, N. (2006). Knowledge to Wisdom: We Need a Revolution. *Philosophia, 34(3)*, 377-378. doi:10.1007/s11406-006-9037-5

Maxwell, N. (2011). Creating a better world: Towards the university of wisdom. In R. Barnett (Ed.), *International Studies in Higher Education: Future University: Ideas and Possibilities.* Florence KY, USA: Routledge.

Ministry of Education. (2014). *Tertiary Education Strategy 2014-2019*. Wellington, N.Z.

Peters, M. A. (2013). Institutions, Semiotics, and the Politics of Subjectivity. *Geopolitics, History, and International Relations(1)*, 11-26.

Readings, B. (1996). *The university in ruins.* Cambridge, Mass: Harvard University Press.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141.

Steffen, W., Grinevald, J., Crutzen, P., & McNeill, J. (2011). The Anthropocene: conceptual and historical perspectives. *Philosophical Transactions A, 369(1938),* 842-867.

Sterling, S. R., Maxey, L., & Luna, H. (2013). *The sustainable university: progress and prospects.* London: Routledge.

Sustainable Aotearoa New Zealand. (2009). *Strong sustainability for New Zealand: Principles and scenarios.* New Zealand: Nakedize.

Walker, M., & McLean, M. (2013). *Professional education, capabilities and the public good: The role of universities in promoting human development*. New York, NY: Routledge.