Introduction

Australia is at a cross-road in sustainability education\(^1\). Behind us is an unsustainable society, in which education has been complicit. Ahead of us is ‘the Action Plan’ titled: *Living sustainably: the Australian Government’s National Action Plan for Education for Sustainability*, produced by the Department for Environment, Water, Heritage and the Arts (DEWHA). It is the most recent of a series of Australian policy and planning decisions over the last two decades and it offers a transition pathway through which education systems can reorient to sustainability. However, we may be ‘so close and yet so far’ - there are other developments which may block that reorientation. One is the new National Curriculum planned for implementation in 2011 that will determine what all schools do by accountability mechanisms in the form of standardized testing. At this stage of its construction the National Curriculum is not supportive of a sustainability focus due to its technocratic orientation and in particular, the time and resources to be consumed by literacy and numeracy. So which way shall we turn? How much do we value a sustainable future for our children?

The focus of this rhetorical paper is the sustainability education policy and curriculum context in Australia in 2009. The claim I am making is that due to ambiguity in discourse, schools have an embedded structural tension whereby they are regarded as

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\(^1\) The field that is referred to here by the name sustainability education is also commonly called Education for Sustainability, and environmental education. The latter explains its history. There have been long debates about its title over a period of two decades.
a key to sustainability transformation while simultaneously they are being prevented from changing. The dilemma for Australians is whether we will accept standardised testing and a rigid, non-progressive National Curriculum, or whether we will reorient to sustainability (DEWHA, 2009). We cannot go both ways. On this basis I call for a reorientation of the National Curriculum to sustainability. My interest in this topic has arisen as a result of school, community and university-based involvement in sustainability education over a long period of time.

The Problem – Ambiguity About Sustainability and About Education
In order to address the question of which way we should turn, I will use an over-simplified ecological philosophy framework that differentiates cultural from technocratic discourses. The purposes and rhetoric of these two discourses about sustainability lead to very different processes and outcomes. Whilst the central notion of both is the ambition of humans to sustain the sources of our sustenance, essentially the two are not commensurate (Davison, 2001). The cultural discourse features political and social justice, moral enrichment and enlivening spiritual practices; whereas the technocratic discourse features optimal, cost-effective, technological configurations. Thus the technocratic agenda reduces our social and ecological reality to that of instrumentalism, and uses the economy as the organising principle (Davison, 2001), in effect promulgating a consumerist outlook. This instrumentalist rationality underpins the construction of the ecological crises such as climate change and loss of biodiversity (Davison, 2001; Orr, 2002; Scott, 2002).

The competing discourses are manifest in education where the languages of both cultural (or progressive) and instrumentalist (or technocratic) agendas are used causing a structural tension in schools (Smyth, 2001). Below is an illustration of that tension, taken from (Wooltorton, 2004 p. 441). It uses words from Smyth (2001, 38-39) with the WA Curriculum Framework (1998).

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2 This over-simplification masks the layers of embedded context-laden complexity; nonetheless it is useful to illustrate one problem factor.
Discourse of Progressive Education (Includes 1998 WA Curriculum Framework Values)

Autonomy, collegiality, collaboration, self-management, team work, partnerships, networking, flexibility, responsiveness, devolution of control, social justice, democratic process, active citizenship, responsibility, participatory decision-making, community participation, critical reflection, responsibility for behaviour, reconciliation, ecological sustainability, cooperation, care for other people, respects people's basic rights, values diversity of cultural expression, actively includes others from different cultures, peaceful conflict resolution, negotiation of personal difference, actively anti-racism and anti-discrimination, critically reflects on consequences of environmental behaviour, works to preserve natural habitats/species.

Discourse of Managerialist Education (Technocratic Rationality, Economism, Instrumentalism)

Performance appraisal, line management, performance management, performance indicators, curriculum audits, leaner organisations, quality assurance, advanced skills assessment, outcomes measurement, total quality management, corporate managerialism, privatisation, commodification, international best practice, strategic reviews, student profiles, benchmarks, leaner organisations, commodification, economic determinism, marketisation, re-centralisation of control, national interest, international competitiveness, 'do more with less', schools operate like private enterprises, key competencies, standards and skills formation, national curricula, testing, appraisal, profiling, auditing, knowledge delivery, measures of competence.

Table 1: A Deeply Embedded Structural Tension in Schools.

This tension is often referred to by critical theorists as a paradox; education is seen as a key to change, yet it daily reinforces unsustainable values and practices (Bowers, 1997; Sterling, 2001).

Continuing with the philosophical framework, I now explain the idea of 'suburban sustainability' in relation to school sustainability programs. Whilst some argue that suburban sustainability is essentially an oxymoron, Davison’s (2006) work on the history of suburbia and its ideals sheds some light on the issue. Davison notes that the early Australian working class people were producers of food – vegetables, fruit and meat – and together with water collection, waste disposal, clothes production and cottage industries, were quite self-reliant and economically independent (Davison, 2006 p. 205). In the private sphere, suburbs have since seen a shift from production to consumption. Then, beginning postwar, the suburban dream and subsequent suburbanisation have become subjects of critique for environmental reasons as well as
the “suburbanisation of disadvantage” (Davison, 2006 p. 209). ‘Brown’[^3] and ‘green’[^4] discourses have overlapped and urban consolidation and renewal programs have been instituted with varying degrees of success (Davison, 2006 p. 209-212). Thus the idea of ‘suburban sustainability’, like schools, has a paradox at its core: ideals of self-sufficiency form our history, yet the heartlands of many movements that criticise suburbs, such as permaculture and urban landcare, are in the suburbs. Therefore, genuine dialogue is needed to develop and negotiate shared aspirations about practical ways to become more sustainable. The implication for schools is that there is an important role for dialogue in meaningfully engaging with sustainability ideas to develop knowledge, skills and practices with their direct and extended communities.

**Sustainability Transition – Ready to Begin the Transformative Learning Journey**

A study of websites shows a general agreement that increasing biodiversity, food growing and utilisation, reducing energy and water consumption, reducing waste, and reducing car transport to school are integral components of programs to improve sustainability in schools. In my experience as a teacher educator and school visitor in south-west Western Australian schools[^5], these programs are in place to some extent in most primary schools, usually through activities organised within the learning areas of science and society & environment[^6]. Playground harmony and inclusion programs are increasingly included with social sustainability, as are global education and Indigenous cultural programs. An inspection of the website for the Australian Sustainable Schools Initiative (AuSSI)[^7] in Western Australia shows that activities are encouraged around the theme of “increasing our social handprint, reducing our ecological footprint” (AuSSI WA, nd-a). This includes plans to improve participation in school decision making (particularly as this relates to questions of sustainability). As well as being officially encouraged (AuSSI WA, nd-b), participation in decision making is currently embedded in the Curriculum Framework through the core value

[^3]: Brown environmental discourses focus on managerialist concerns, particularly risk caused by pollution and other sources.

[^4]: Green environmental discourses focus on aesthetic concerns about nature and natural places.

[^5]: Whereas the arguments used here apply to all Australian states, for reasons of brevity only Western Australian examples are used.

[^6]: Society & environment is a Western Australian school learning area oriented towards active citizenship, which comprises three aspects: ecological sustainability, social justice and democratic process.

[^7]: AuSSI is an Australian government program of support for sustainability education that operates through joint funding with each state and territory.
social and civic responsibility, through overarching outcomes seven and eight, and is a goal for the learning area society & environment (Curriculum Council, 1998 p. 23, 24; inside back cover; and 261, 262). Thus in Western Australia the curriculum and AuSSI undoubtedly provide encouragement and guidance to teachers and school communities in their sustainability endeavours.

Therefore, with curriculum and joint government support, Western Australian schools are currently able to begin the sustainability transition. The programs and activities in place are commensurate with the goal of sustainability education in Australia, which is ‘living sustainably’ (DEWHA, 2009). However, a thorough understanding of the issues underpinning the quest for a sustainable future is required, as sustainability education “aims to tackle the underlying causes of unsustainable trends. The focus is on systemic change” (DEWHA, 2009 p. 8). On the surface, and given the progress to this point, it appears that schools are well placed for implementation of the new Action Plan. That being said, systemic change is a particularly complex task for schools to undertake in a context of paradox and competing discourses, where the aspirations of sustainability education and of suburban sustainability are ambiguous. It is precisely this ambiguity that suggests a rethink of the essential question: what are schools for? Is the role of the school to support the technocratic agenda that promotes economic goals above others? Or is it to support a sustainable society? Given that our Federal government stipulates the latter (DEHWA, 2009, pp. 6 & 7), that assumption underpins this paper. The goal of schooling is a sustainable society. Sustainability is no longer a separate agenda in education – it is now the agenda (Sterling, 2002). That is, sustainability needs to be the organising logic for schooling.

**Transformative Learning for Reorientation to Sustainability – The Magnitude of the Task**

Arguably, education systems in the developed world have in the recent past “sustain[ed] unsustainability” (Sterling, 2001, 14), in the sense that they have contributed towards the development of an unsustainable society. It is a fact that the most highly educated nations leave the deepest ecological footprints and have the highest per capita rates of consumption (UNESCO, 2002). For these reasons and because of ambiguity in aspiration and direction, I shall argue that sustainability education deserves a higher priority in terms of curriculum and policy. Importantly,
sustainability education is now understood as being underpinned by transformative learning for social change outcomes (DEWHA, 2009 p. 9); thus potentially it could be aligned with the sustainability transition in the suburbs. Yet at present we do not have sufficient practical knowledge of transformation. Generally, we do not know how to be transformative or how and where to begin to work in different, sustaining ways (Wooltorton, 2004 p. 2). Thus in an individual and in a collective sense, we need to develop this practical knowledge. This will take time, resources and strong commitment by policy makers and school communities.

It is significant to note that transformative learning is a paradigm of learning and change; and deep learning underpins reorientation towards sustainability. Sterling (2001, 15) describes first-order learning as adaptive learning, which leaves basic values unexamined and unchanged. Second-order learning involves critically reflective learning, where we examine assumptions and values of first-order learning. The latter is also known as metacognition, or learning about learning. Third-order learning is the deep level which enables the learner to see things differently. It entails a deep awareness of different world views and ways of working. Third-order learning is the transformation level through which a changed paradigm is possible. (Sterling, 2001 p. 15) Thus transformative learning is required at individual and whole-society levels for sustainability reorientation (Wade, 2007 pp. 109-110).

In addressing the problem of schools supporting suburban sustainability transition, an important consideration for sustainability educators is the question of whether schools change society or whether society changes schools. By connecting sustainability education with positive social change in the wider social context, educators can draw strength from it to further develop with clarity into the stages of real participation in decision making, which is essential in community transformation (Sterling, 2001 p. 23). The core ideas of the transformative paradigm are that it is participative, democratic, collaborative, constructive and purposeful, thus it needs a lived model of sustainability as a guide (DEWHA, 2009; Sterling, 2001; Wooltorton, 2004). So the answer to the question of schools supporting society or society supporting schools is that they co-arise and require mutual support.

Therefore, in order to develop lived models of sustainability it is worth considering the idea of developing schools as hubs for change in the suburbs where these are
centres for sustainability learning and engagement (Wooltorton, 2003). There is considerable evidence of the emergence of this model, as an increasing number of schools have thriving eco-centres on their grounds which focus on one or more central learning projects such as a vegetable garden, biodiversity enhancement or energy reduction that is organised and nurtured by teachers, children and parents collaboratively. The idea of schools as sustainability hubs is aligned with the concept of place-based education, which aims to connect classrooms with their communities in order to connect people with nature and culture in their place (Sobel, 2004 p. ii). It is often referred to as a pedagogy of community. The notion of connection with place is: “the realisation that love – love of nature, love of one’s neighbours and community – is a prime motivating factor in personal transformation, and the transformation of culture” (Sobel, 2004 p. ii). Not surprisingly, there have been a number of studies which show that the use of environment as an integrating context for education produces increases in student learning and achievement across the curriculum including social studies, science, language arts and maths. Importantly, they also showed improvement in self-esteem, behaviour and higher-order cognitive skills. (Sobel, 2004 pp. 25 - 32). This extended idea – of schools as sustainability hubs with place-based education – potentially forms a cultural base of sustainability practice due to the learning opportunities and dialogical spaces created.

However, the development of a cultural base of sustainability practice in school and community takes time, patience, considerable dialogue and substantial commitment by all parties. Because of the varying social and interpersonal skills, life experiences, paradigmatic and ecological knowledge and the perspectives of the people involved, conflict over processes and goals is common (Wooltorton, 2004). Whilst the resolution of these conflicts can provide the deepest learning opportunities, the point is that the acquisition of social capital for sustainability transition is complex and collaborative in nature because it builds upon multiple layers of engagement, critique, learning and change. This is a very important point, and one that is often missed by educationists who set policies which in effect relegate low priority to these experiential-practical programs. The fact is that they take a large amount of time, commitment, effort and energy by teachers and community members who are already very busy people. Thus, the requirement is for a reorientation of the way schooling is organised, in line with planning by DEWHA (2009).
Compared to state-based schooling in the 1970s with its rows of desks, authoritarian teachers, and knowledge-based tests to determine success or failure in schools, sustainability education is a very different way of ‘doing’ education. Rather, it is commensurate with an outcomes-based approach where the teacher works with the students – and parents – using a variety of methods and strategies to reach the curriculum outcomes be they knowledge, skills or values-based. Thus teachers and systems, often in partnership with local organisations, councils, businesses or government departments, have developed programs in schools enabling all parties to learn how to transition their schools towards sustainability outcomes. These sustainability education activities have been aligned with state-based curricula in all Australian states for at least ten years. It would be fair to say that a sustainability education movement has been emerging, gaining momentum along the way. Nonetheless, the movement still has a very long way to go. Most principals – even those in award winning schools – would say that their schools are only in the beginning stages of sustainability transition. To sum up, I have been arguing that in the social context of unsustainability in society, sustainability education is a different, transformative way of working with school and community. It is beginning to gain currency and needs to be strongly encouraged and supported to assist its development because of the depth of learning and change involved. The (DEWHA, 2009) National Action Plan is a fine step in the right direction. My point in this section has been that this emerging way of doing education requires much time as well as priority in terms of resourcing and organising schools. If society actually values the creation of a sustainable future, this is simply a non-negotiable point.

**Sustainability Education and the Essential Curriculum Context: Rear Vision or Future Orientation?**

Since the Tbilisi, Georgia Conference on Environmental Education in 1977 it has been recognised internationally that sustainability education is necessary for transition towards a sustainable future (UNESCO, 1977). Until that time, the environment had largely been recognised as the domain of science education because the problems were seen as problems of ecology rather than of society. The Tbilisi conference articulated the curriculum gap between science and society, and from this recognition
learning areas were joined such as that named society & environment\(^8\) in Western Australia (Curriculum Council, 1998), which combined the previously termed social studies with natural systems and systems theory. The learning area society & environment explicitly engages with sustainability in its primary outcome of active citizenship. It is identified as a practical, values-based outcome, the idea of which is to apply in practice the key concepts in geography, history, economics, political science, anthropology, ecology and systems theory through the lens of three aspects of active citizenship: ecological sustainability, social justice and democratic process (Department of Education and Training, 2005).

However, over the last fifteen years in Australia there has been an increasing backlash from the instrumentalists, based upon largely media-driven claims of reduced literacy and numeracy outcomes. Smyth (2001, 186) makes the case that in the developed world a deliberate mythology has been constructed in which teachers and schools are seen as the cause of economic failure. This mythology also prescribes a cure of stringent procedures for schooling: basic skills teaching, standardised testing, tight classroom discipline, performance indicators, longer days in school and cost effectiveness measures. There seems to be the belief that if these prescriptions were followed, then schools would once again serve the economy more effectively.

Smyth and Shacklock argue that an economic determinist agenda is based on a set of views on what schooling *ought* to be (their emphasis). They say that these views are:

> undebated, untested, have no empirical basis to them, are without foundation in terms of an established nexus with known forms of teaching, and *hold no hope for the creation of more socially just, tolerant, compassionate or egalitarian societies.* (Smyth & Shacklock, 1998 p. 135; my emphasis)

Unfortunately, both the Rudd and Howard Federal governments have accepted these views and have worked to cement them into Australian education by making all education systems accountable through national testing.

Thus the National Assessment Program: Literacy and Numeracy (NAPLAN) came into effect in 2008. In preparation, most states had instituted state based standardised literacy and numeracy testing several years prior to this. In Western Australia this was the Western Australian Literacy and Numeracy Assessment (WALNA). Conforming

\(^8\) There are similar learning areas in all other states, some with the same title.
to national policy, students in years three, five, seven and nine are now assessed using national tests in writing, reading, language conventions and numeracy. The intention with NAPLAN is to compare all Australian schools, students and systems and to monitor progress over time (MCEETYA, 2009). Two years ago in response to the WALNA testing requirements, Western Australian state primary school teachers were ordered to spend 50% of their teaching time addressing literacy and numeracy outcomes (Government of Western Australia, 2007 p. 3). The first paragraph of this report states (my emphasis):

COAG has agreed that Australia’s future prosperity will depend on the ability of all Governments to embrace reforms that address *the key areas of productivity and participation*. Strong literacy and numeracy skills developed in early childhood and the primary years of schooling are fundamental requirements for learning and are essential for work and life opportunities beyond school. Low levels of literacy and numeracy impact negatively on educational attainment and employment prospects, *and result in economic costs that are borne by the whole community*.

There is no argument with the intention to improve literacy and numeracy skills; however, the impact of spending 50% of school time on these two learning areas is seriously compromising the capacity of schools to organise and implement high quality sustainability programs. Further, it means teachers must reduce one or more of the remaining six learning areas. I am not aware of research that shows the impact of state-wide and national testing on children’s education in Australia, but criticism has been expressed through the media about the reduction of emphasis on the arts (Tomazin, 2009). Internationally research shows that national-styled testing causes harm to children’s wellbeing, is deleterious to learning and is unreliable as a measure of educational achievement (National Union of Teachers, 2009). Whilst proponents argue that national testing is a cost-effective way of ensuring accountability in education, it is clear that the full cost of these procedures will not be known until environmental and social costs become more evident.

Similarly in Australia a National Curriculum is being developed, where the Commonwealth government stipulates national standards in key areas. Consequently, the federal government has instituted firstly the National Curriculum Board and then the Australian Curriculum, Assessment and Reporting Authority (ACARA), which is responsible for the national curriculum, the national assessment program, and the national data collection and reporting program (ACARA, 2009).
As of June 2009, the National Curriculum comprises a document titled: “The Shape of the Australian Curriculum” (National Curriculum Board) and four framing papers, one each for the selected key learning areas of English, mathematics, history and science. Framing papers for the two final learning areas of Languages Other than English and geography are scheduled for release in 2010 (ACARA, 2009). The educational goals are stated as: (for young Australians to be) successful learners, confident individuals and active and informed citizens. The detail of the goal of active and informed citizens is as follows:

- act with moral and ethical integrity;
- appreciate Australia’s social, cultural, linguistic and religious diversity, and have an understanding of Australia’s system of government, history and culture;
- understand and acknowledge the value of Indigenous cultures and possess the knowledge, skills and understanding to contribute to, and benefit from, reconciliation between Indigenous and non-Indigenous Australians;
- are committed to national values of democracy, equity and justice, and participate in Australia’s civic life;
- are able to relate to and communicate across cultures, especially the cultures and countries of Asia;
- work for the common good, in particular sustaining and improving natural and social environments;
- are responsible global and local citizens. (National Curriculum Board, 2009 p. 7)

This is encouraging for the sustainability agenda.

The National Curriculum Shaping Paper makes only two other references to sustainability:

a) Young people will need a wide and adaptive set of knowledge, skills and understandings to meet the changing expectations of society and to contribute to the creation of a more productive, sustainable and just society (National Curriculum Board, 2009 p. 6).

b) A commitment to sustainable patterns of living\(^9\) which will be reflected, \textit{where appropriate}, in national curriculum documents (National Curriculum Board, 2009 p. 13; my emphasis).

Given that there are DEWHA (2009) plans to reorient education systems to sustainability there is precious little evidence in the National Curriculum documentation of how this will be implemented. The actual curriculum documents in English, mathematics and history that have been published to date are generally of

\(9\) This point on commitment to sustainable patterns of living is described as a cross curriculum perspective.
little interest to people concerned with a sustainable future. Science, in preparing people for active citizenship, is a little more promising. However since there is no learning area to hold together the connections within society and environment, there is no indication of how the outcomes of active citizenship can be achieved through the segregated approach to the disciplines. Therefore, unless the curriculum is reoriented towards sustainability in teaching, learning and assessment processes, and in its regard to the professionalism of teachers to enable them to work with their communities in sustaining ways, the Australian curriculum designed for implementation in 2011 is likely to be similar to that at the start of the previous century.

A wide range of environmental and professional organisations sent submissions to the National Curriculum Board’s consultation regarding the topic of sustainability (personal discussions held at the National Curriculum Board’s Sustainability Forum, March 2009); however, there is little evidence of take-up in the documents to date. The Australian Association for Environmental Education entered several substantial papers, with the following key points:

a) …there is insufficient reference to learning how to think, live and work in integrated and systemic ways;
b) there is insufficient focus on sustainable development and its potential as an integrating context for education;
c) there is insufficient acknowledgment of the environmental crises facing our nation;
d) these crises demand a fundamental transformation of the way Australians live, work, interact with their environment and hence are educated. (Smith, 2008)

Therefore as of July 2009 it appears that the implementation of the National Curriculum, with its associated national testing and accountability mechanisms, will not support the DEWHA Action Plan’s second strategy of reorienting education systems to sustainability, to any worthwhile extent. Unfortunately its impact will mean that sustainability education will be marginalised, while the supposed ‘real business’ of schooling is the service of a technocratic agenda that features economic aims above environmental and social considerations for society. This is definitely a rear vision – there is no future orientation in this discourse.
Resolve the Great Australian Dilemma – A Call for Sustainability Education in Schools Through the New National Curriculum

All education is sustainability education: by its absence or its inclusion, we teach values about the way we live and wish to live. If education has been a struggle between the progressives and the instrumentalists, from approximately 1995 to 2005 the pendulum swung towards the progressives, enabling outcomes-based education to thrive in primary schools and, importantly, enabling sustainability education to emerge as a viable field. Cultural discourses featuring the envisioning of improved school and community environments were encouraged, and committed teachers, children and parents developed a range of programs for change. In contrast, it appears that more recently the pendulum has returned and progress towards sustainability is once again threatened by an instrumentalist agenda of national testing combined with an outdated curriculum to improve schools and lead to a productive and prosperous future.

Thus, in Australia and elsewhere, it seems education is being reoriented towards a narrow, technicist view of education, allegedly for economic benefit. Orr asks: why is this so? His own response is as follows.

Part of the answer, I believe, is found in the progressive diminution of the idea of learning throughout the 20th century. Far removed from the tradition of the great philosophers, the discourse on education has become a technical subject requiring only efficient administration by technocrats... But this whittled-down version of education is also convenient to those whose interests are well served by a docile, but technically competent, public, otherwise unable to think critically or to act as citizens. (Orr, 2001 p. 7)

In conclusion, I call for by a reorientation of the national curriculum to sustainability. This would mean that all learning areas would be tailored to sustainability goals in terms of content, processes and outcomes. For instance, in mathematics examples would be applied to the school grounds, so that measurement and calculations would feature the playground and seasons, comparative prices and food miles\(^{10}\), to give a place to meaningful critical thinking in mathematics. Similarly, implications for

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\(^{10}\)‘Food miles’ is the term applied to the distance ingredients of food travels from source to consumer. The idea is that the further food travels, the less sustainable it is since more fuel is consumed and carbon emissions produced. Using this logic, locally produced food is more sustainable.
sustainability can be drawn from English content. Currently learning areas such as society & environment and science directly facilitate sustainability transition and the learning area Technology & Enterprise (T&E) shares that potential. Health/physical education (HPE) is also logically tailored towards sustainability in that a healthy body and a healthy environment are mutually supportive. However these areas are not included in the National Curriculum in its current form. Therefore, a reorientation of the national curriculum to sustainability would include society & environment, HPE and T&E as key learning areas and would focus all learning areas to key processes and outcomes for a sustainable future.

Learning and change for a sustainable future is the agenda: marginalising this topic is no longer an option given the environmental crises facing our local areas, our nation and the planet. Since the problems facing humanity are integrated through society, so must be the solution. People have always lived symbiotically with nature, weaving religion, stories and culture into their sense of place. In Australia, this education is 40,000 years old (Fien, 2001 p. 3). Now is the time to reinvigorate our commitment to a sustainable future through sustainability education via the National Curriculum.

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