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**Children's Hope for our Future World and the Implications for Sustainability
Education**

Submitted by

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In fulfilment of the requirements for the degree of

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Abstract

This doctoral research explores Victorian primary-aged children's hope for our future world. The aim of this study is to contribute to building children's hope within primary sustainability education. Hope for our future world is critical to engagement in actions that can realise positive environmental, social and economic outcomes. Children with hope are more likely to engage in sustainability initiatives than children with limited or no hope who may experience resignation to sustainability challenges. Not all types of hope have an equal impact on engagement in actions that can realise sustainable outcomes. Hope characterised by constructive engagement with sustainability challenges and taking action has a positive effect. On the other hand, hope characterised by wishing for positive futures without willing to take action can lead to disengagement. To date, little research has explored primary-aged children's hope for our future world, and no known research has explored Victorian primary-aged children's hope for our future world. No known research has explored the range of ways that primary-aged children conceive hope and the factors that lead them to develop more powerful types of hope considering the impact on sustainability engagement.

This study employs phenomenographic methodology to address the gap in the research. Phenomenographic analysis reveals that Victorian primary-aged children conceive hope in five qualitatively distinct ways. These are hierarchically ordered according to their impact on sustainability engagement. The factors shaping each of the five different hope conceptions are explicated. Social interactions were found to have the most positive influence on hope, particularly home and school experiences where children are supported to collaboratively set, strategise, and enact pathways toward

sustainability goals. Sharing stories of sustainability achievements was also found to have a positive impact. Barriers to hope that emerged included concerns about future technological advancements and increases in human population growth. Some children perceive technological advancements as detrimental to the future world, fearing they will lead to increased resource consumption, pollution, and habitat destruction. Similarly, some children perceive that increasing human population growth will lead to resource depletion, strained infrastructure, and ecological imbalance. A perceived lack of collective effort toward achieving positive futures was also found to diminish hope.

Based on children's descriptions of the factors that build or diminish hope, this thesis puts forth proposals for sustainability education policy and practice. These include integrating teaching and learning of hope into the Australian Sustainability Cross-Curriculum Priority (SCCP), and a framework of eight teaching practices for teachers wishing to build hope in the context of sustainability education.

Keywords: Hope, Future World, Sustainability Engagement, Sustainability Education

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Chapter One: Introducing the Study

This research investigates the different ways that primary aged children (8-12years) conceive hope for our future world and what influences their hope. My previous studies led me to perceive that children seem to be losing hope for the future, and I felt concerned that their loss of hope may lead to disengagement in the world around them. I was also interested in exploring why some children appear to have more hope than others and what factors influence their hope.

This research is motivated by my decade of experience as a primary school teacher in Australian schools, with a particular interest in sustainability education. During this time, I have noticed that sustainability education is often marginalised and inadequately taught. For instance, learning experiences often focus on transmitting knowledge about environmental issues such as climate change and biodiversity loss in a catastrophising way (Blumstein & Saylan, 2007; Liefländer et al., 2013). When we adopt such teaching approaches children can feel overwhelmed, helpless, and powerless, and this can negatively impact their hope for futures and their motivation to engage in pro-sustainability behaviours (Hicks, 1996; Kelsey, 2020).

As a primary school teacher, I run lunch-time sustainability clubs. In line with other researchers (Ojala, 2012a; Wilks & Harris, 2016), during these sessions I have noticed that children who have hope for our future world are more motivated than other children to problem solve, demonstrate resilience and leadership, and exert effort in response to sustainability challenges. For instance, when I have discussed the United Nations Sustainable Development Goals [SDGs] (United Nations, 2015) with children, hopeful children are more able to come up with a variety of actionable ways to work towards achieving them. This

personal experience aligns with the view that children with higher levels of hope are better equipped to forge a way forward and generate pathways towards positive future outcomes than children without hope (Courville & Piper, 2004).

For some time now, children have been experiencing unprecedented sustainability challenges such as floods, fires, war, and social displacement (Rogers, 2020). Such challenges directly impact children's growth, development, and wellbeing (Bellamy, 2003). Given projections that severe weather events and climate-induced conflicts will likely continue to escalate (Le Page et al., 2015), and that hope for our future world can increase resilience in the face of accelerating disasters (Macy & Johnstone, 2012), building children's hope is one way to realise more positive outcomes (Bishop & Willis, 2014). It is predicted that without hope, children may disengage from efforts for sustainability and become passive and apathetic about futures (Straume, 2020).

Little is known about how children conceive hope for our future world. Existing literature signifies the importance of hope (Grain, 2022; Kelsey & Armstrong, 2012; Ojala, 2017), but there is a need for greater understanding of the ways in which children conceive hope, and how they come to have hope. This research gap provided the impetus for this study. This study was driven by a gap in the existing research. Below, I expand further on the need for this study by outlining the research background, aims, and significance, before providing a chapter-by-chapter summary of the thesis.

1.1 Background to the Study

Human-induced global sustainability changes have disrupted the stability and functioning of ecosystems worldwide (Bendik-Keymer, 2018; Gibson et al., 2015). As a result, we are facing challenges that threaten people's lives and well-being, including climate

change, the rise of novel viruses, ocean acidification, biodiversity loss, food shortages, resource conflicts, and climate-induced displacement (Muir et al., 2020; Zywert & Quilley, 2020). These challenges carry social and economic consequences, such as illness, economic instability, poverty, and war (Farrant et al., 2012).

Children are particularly vulnerable to environmental changes and their associated social and economic consequences (Sly & Vilcins, 2021). For example, from 2019 to 2022, unprecedented climate-induced bushfires and floods in Australia caused many children to miss school and experience financial insecurity (Breslin, 2022). Children are also expected to bear the greatest burden of environmental mismanagement into the future (Assadourian & Mastny, 2017). This is because they will be the ones having to manage the impacts of current ineffective climate change management on homes, infrastructure, water, and human health, which is predicted to lead to 200 million environmental refugees by the year 2050 (Garcia-Reyes, 2021).

Many children worldwide have recognised the urgency of taking action for more sustainable futures (Whyte, 2017). For instance, 18 million children from 233 countries participated in school strikes between 2018 and 2022, urging political leaders to take immediate action on climate change (Fridays for Future, 2023). However, their efforts have often been met with little support from governments, with many dismissing or ridiculing their environmental activism (Bergmann & Ossewaarde, 2020; Bowman & Germaine, 2022). For example, UK Prime Minister Theresa May criticised the children who took part in the school strikes, claiming they wasted valuable learning and teaching time (Watts, 2019). Similarly, the opposition leader of the New Zealand government stated that the children's "little protest won't help the world one bit" (Bracewell-Worrall, 2019).

Similar things have happened in Australia. In November 2018, 11-year-old Australian primary student, Callum Bridgefoot, helped organise a school climate strike in response to the increasing and intensifying bushfires that he was experiencing in his hometown of Castlemaine, Victoria (The Guardian, 2019). Callum hoped that the strike would capture then Prime Minister Scott Morrison's attention and motivate him to develop and implement policies addressing climate change (The Guardian, 2019). However, Scott Morrison implored children to stay in school rather than protest, stating that matters relating to climate change should be dealt with in parliament (Australian Associated Press, 2018). Another Australian minister commented that the only thing that striking would teach children is how to collect government benefits (Johnson & Perinotto, 2019).

The Australian education system has also failed to support children to build capacity to act for more sustainable futures by pursuing economic over environmental objectives for education (Verlie & Flynn, 2022). This failure is evident in the system's focus on numeracy and literacy education to prepare children for the job market (New South Wales Government, 2022), while neglecting sustainability education that could equip them to navigate an unpredictable and complex future (Rooney & Blaise, 2022). For instance, the New South Wales Government emphasises that "literacy and numeracy skills are core priorities...They are a foundation for workforce participation, productivity, and the broader economy" (New South Wales Government, 2020). Furthermore, the Australian Professional Standards for Teachers (Australian Institute for Teaching and Learning [AITSL], 2022) mandate teacher engagement, knowledge, and practice in literacy and numeracy education but not in sustainability education. While literacy and numeracy are essential competencies, the Australian schooling system overlooks the importance of preparing children for the challenges and uncertainties that future generations are expected to face.

The marginalisation of sustainability education in Australian schools has led to the absence of regular and effective sustainability education in many classrooms (Prabawa-Sear & Dow, 2018). When schools do offer sustainability education, children report that it focuses on the science of challenges but does not engage them in discussions or debates that empower them to take action (White et al., 2022). Children involved in climate strikes highlight the shortcomings of Australian sustainability education, stating they feel compelled to strike because their education fails to empower them to act on important sustainability issues (Verlie & Flynn, 2022; White et al., 2022). They also note that, unlike school-based sustainability education, participating in strikes exposes them to a range of solutions for sustainability challenges and motivates them to take action (White et al., 2022).

Research supports children's claims that sustainability education in Australian schools often focuses on conveying knowledge and facts about the science of sustainability challenges (Jinnah et al., 2016). This approach stems from the belief that unsustainable behaviours result from a lack of knowledge about the causes of sustainability challenges (Coyle & National Environmental Education and Training Foundation, 2005). However, research shows that delivering facts about sustainability challenges does not necessarily create informed individuals who can use that knowledge to drive change (Blumstein & Saylan, 2007; Liefländer et al., 2013; When sustainability education focuses on transmitting knowledge about sustainability challenges, children can feel overwhelmed and disengage from efforts to address them (Hicks, 1996). To achieve more sustainable futures, education must actively engage children in taking sustainability actions (Atwoli et al., 2022; Rousell & Cutter-Mackenzie-Knowles, 2020) and hope is one such factor that can motivate sustainability engagement (Klockner, 2013; Ojala, 2012a).

1.2 Hope and Sustainability Engagement

Hope is a precursor to sustainability engagement. For instance, children who have hope for our future world are more likely to engage constructively with sustainability threats and act to realise more positive outcomes for environments than children who lack hope (Bentley et al., 2004; Fielding & Hornsey, 2016; Hicks, 2001, 2006; Kasperson & Kasperson, 2001; Lueck, 2007). Such children are more likely to engage in sustainability advocacy and action on climate change and achieve sustainability goals (Lueck, 2007; Macy & Johnstone, 2012; Ojala, 2012a; 2013a; 2017). They are also more motivated to problem solve, demonstrate resilience and leadership, and exert effort in response to sustainability challenges (Hicks, 2014). On the other hand, children who lack hope can experience feelings such as eco-anxiety and climate doomism (Kelsey, 2020; Sangervo et al., 2022). Such feelings can lead children to become apathetic about futures and less inclined to engage in behaviours that can ameliorate sustainability challenges (Gibson et al., 2015; Kasperson & Kasperson, 2001; Lueck, 2007).

Hope is broadly defined as the ability to envision positive outcomes for the future (Lopez & Snyder, 2011; Swinton & Payne, 2009). The hope literature reveals two main types of hope: non-agentic hope and agentic hope (Gallagher & Lopez, 2018). Non-agentic hope involves expecting positive outcomes without willing to take actions. For example, wishing for a positive outcome from a situation without taking action to influence the outcome (Gallagher & Lopez, 2018). Non-agentic hope, also known as ‘false hope’, is often linked to disengagement from sustainability challenges (Marlon et al., 2019). Non-agentic hope is synonymous with uncritical hope, which is an “expectation that positive future outcomes will eventuate” (Scheier & Carver, 1985, p. 1) regardless of one’s personal control over the

outcome (Kaufman, 2011). Conversely, agentic hope involves acting in ways that influence outcomes (Gallagher & Lopez, 2018). It is a source of motivation, agency, and competency (Snyder, 1994). Young environmental activist Greta Thunberg, who was instrumental in inspiring global school strikes for climate, conceptualises hope as an agentic process: “Hope is not passive. Hope is not blah, blah, blah. Hope is telling the truth. Hope is taking action” (Carrington, 2021). In this way, hope is a verb, not a feeling (Orr, n.d.).

In this study I focus on agentic hope after Snyder (1994, 2000, 2002) and McGeer (2004; 2008). Agentic hope acknowledges one’s personal role in achieving positive outcomes (Gallagher & Lopez, 2018). Snyder (2002) and McGeer (2004) argue that hope involving agency is necessary for overcoming global problems. Other authors have drawn on Snyder’s work to establish links between agentic hope and engagement with sustainability related challenges including climate change (Bukchin & Kerret, 2020; Finnegan, 2022; Li & Monroe, 2018). As a teacher engaged in sustainability education, my working assumption, therefore, is that hope involving agency is of greatest significance to the development of a sustainability education capable of engaging children to act to realise positive futures. Snyder’s Hope theory is fully explained in Chapter 3.

1.3 Research Aim, Questions and Significance

One way to engage children to act to realise positive sustainability outcomes is to embed hope into the teaching and learning of sustainability education (Grund & Brock, 2019; Kelsey, 2020; Kerrett, 2020; Li & Monroe, 2018; Ojala, 2017; Stevenson et al., 2016). Hope is important to sustainability engagement. However, to date there is limited empirically based understanding about how primary-aged children (aged 8-12years) conceive hope for our future world, what influences their hope, variations in their hope and

how to build it in the context of sustainability education. In light of this, this research sought to answer the following research questions:

1. How do children conceive hope for our future world?
2. What factors influence how children conceive hope for our future world ?
3. What are variations in children's hope for our future world?
4. What are the implications of the findings for sustainability education?

Countries around the world are grappling with how to educate children with the necessary competencies to engage in planning and acting to mitigate sustainability challenges (Scoffham & Rawlinson, 2023). Engaging children to mitigate sustainability challenges is a core aim of sustainability education (Bürgener & Barth, 2018, United Nations Educational Scientific Cultural Organisation [UNESCO], 2019). However, the current type of sustainability education that focuses on knowledge transmission about sustainability challenges can negatively impact children's sustainability engagement (Hicks, 1996). This is because transmitting knowledge about sustainability challenges can lead children to experience climate grief, eco-anxiety, and climate 'doomism' (Verlie & Flynn, 2022). Nihilistic feelings about futures can impact children's psychological wellbeing and immobilise them from conceiving pathways and taking action to tackle environmental challenges (Kelsey, 2020; Pihkala, 2020). In this way, the current sustainability education being delivered in schools may be obstructing sustainability engagement (Dunlop et al., 2022; Hickman et al., 2021).

Understanding the diverse ways that children conceive hope for our future world and the factors that influence their hope may inform the development of a type of sustainability

education that can facilitate the building of competencies to engage children in actions to realise positive futures. Hope, specifically agentic hope (Snyder, 2000), has been shown to motivate engagement in behaviours leading to the attainment of positive sustainability outcomes (Finnegan, 2022; Li & Monroe, 2018, Stevenson et al., 2016). Hope for the future can support children to cope with sustainability challenges and orient them to take actions for futures that are reflective of their goal of a more socially equitable and sustainable society (Ojala & Bengsston, 2019). However, my professional and research experience with the Australian primary sustainability education curriculum, is that hope is largely missing in sustainability education. Hence, the objective of this research is to consider the implications of the findings of this research for building hope in the context of sustainability education.

This study offers a new direction for hope scholarship by drawing on Snyder's cognitive theory of hope (1994; 2000; 2002) and McGeer's theory of hope as a social construct (2004; 2008). To date there is no known research that has explicitly drawn on these two theories to explore children's hope for our future world. Previous research has largely investigated whether children's outlooks towards the future are positive or negative (Barraza, 2009; Ozsoy & Ahi, 2014). Such studies do not provide reliable insight into the impacts of children's outlooks on their motivation to engage in sustainability related behaviours. This is because positive outlooks towards the future based on wishing for positive outcomes or denying the seriousness of sustainability challenges, without taking of action to realise them can inhibit sustainability engagement (Kelsey, 2020; Marlon et al., 2019; Ojala, 2012a; Ojala, 2017).

This research's focus on understanding how primary-aged children conceive hope for our future world is significant for several reasons. While previous studies have primarily

concentrated on secondary-aged children (Ojala, 2012; Li & Monroe, 2018; Stevenson et al., 2016), this research addresses a critical gap in knowledge. Primary-aged children are at a crucial developmental stage where their attitudes, values, and behaviours towards sustainability are being formed (Davis, 2010). By focusing on this age group, this study explores a critical period in children's development that has been largely overlooked in sustainability education research. Moreover, hope is particularly malleable during the primary years of development (Snyder, 2000), making this an opportune time to investigate and potentially influence children's conceptions of hope. Understanding how primary school children conceive hope can contribute to the development of primary sustainability education capable of building children's hope and sustainability engagement, ultimately supporting them in realising positive futures.

1.4 Overview of Chapters

Following this Introduction, Chapter 2 presents a synthesis of existing literature on hope and situates hope in sustainability engagement and education. In this chapter I review what hope is and its value to individual and social flourishing. I then explore the importance of the right type of hope to sustainability engagement and present the case for integrating teaching and learning of hope into sustainability education.

In Chapter 3 I describe the theoretical framework that guides this study. Namely, a combination of Snyder's (1994; 2000; 2002) cognitive hope theory and McGeer's (2004; 2008) social constructionist hope theory. I describe both theories including their key concepts, assumptions, strengths, and limitations. I then explain my rationale for combining the two frameworks as a lens to explore children's conceptions of hope for our future world.

In Chapter 4 I describe phenomenography, the interpretivist methodology that I utilised to conduct this study. A core aim of this chapter is to explain my reasons for choosing phenomenography - to explore variation in how children conceive hope for our future world and the influences on their conceptions; to provide rich descriptions of children's conceptions from their own perspectives; and, for phenomenography's demonstrated value in informing the teaching and learning of educational phenomena (Åkerlind, 2008; Åkerlind et al., 2014; Rovio-Johansson, 1999; Rovio-Johansson & Lumsden, 2012).

I present Chapter 5 in two parts. In the first part I provide an overview of background factors that may have influenced the findings of this study and a description of the research contexts of metropolitan Melbourne and regional Victoria. In the second part, I explicate my research methods. To begin, I provide information about how I selected and recruited participants and how I designed my data collection instruments. Then I provide information about a pilot study that I implemented prior to my main study. Following that, I describe how I collected and analysed data in my main study. I conclude the chapter with a discussion of how my study meets ethical research standards and how my study's outcomes can be deemed to be trustworthy.

Chapter 6 answers the first two research questions: How do children conceive hope for our future world? And, what are the factors that influence children's conceptions of hope for our future world? In this chapter, I describe the five qualitatively different ways that the Victorian primary-aged children included in this study conceived hope for our future world. Further, I delve into the varying influences on what led children in each category to conceive hope in their particular way.

In Chapter 7 I answer the third research question: What are variations in children's conceptions of hope for our future world? To answer this question, I present the phenomenographic outcome space of children's conceptions of hope for our future world. The outcome space is a summary table that explores the critical differences and relationships between the five categories of hope. It is presented as a spectrum of hope conceptions from least to most powerful considering their impact on sustainability engagement.

Chapter 8 focuses on a discussion around three key themes that emerged from the findings. Children conceive hope for our future world in a spectrum of ways; there are numerous barriers that inhibit children's hope for our future world; and hope for our future world develops through social interaction. The first key theme introduces new understandings about how primary-aged children conceive hope for our future world. The second and third themes advance existing knowledge regarding the factors that inhibit hope, and how hope is developed and maintained through social interaction.

Chapter 9 answers the primary motivating question of this thesis: What are the implications of the research findings for primary sustainability education? I do this by applying the research findings to sustainability education policy and practice to guide teachers wishing to build hope into their teaching and learning practices. The implication for policy involves a proposal for integrating building of hope within the Australian Sustainability Cross-curriculum Priority. The implication for practice involves a framework comprising eight proposed practices that teachers can use to build children's hope in sustainability education.

Chapter 10 concludes this thesis. In this chapter I provide an overview of the research and the key findings. I reflect on the research limitations and contributions to the field of

sustainability education. To close the thesis, I provide recommendations for future research and a final statement.

Chapter Two: Reviewing and Situating Hope in Sustainability Education

The purpose of this chapter is to provide background to the research pertaining to this thesis. In doing so, I demonstrate where this research fits into the existing body of knowledge. I present the chapter in two parts. In the first part, I introduce the concept of hope by providing an overview of its meaning and value. Then I discuss shared understandings of hope and concepts of non-agentic and agentic hope. Ensuing, I describe various theories of hope, including cognitive, emotion, and socially constructed theories, and empirical research that applies such theories.

In the second part of the chapter, I review literature on hope as it pertains to sustainability engagement and education. I begin by discussing types of hope that are identified as important to sustainability engagement, research that supports such theories, and the consequences of lack of hope. Then, I consider the conceptualisation and enactment of hope in sustainability education.

Part One: What is Hope?

Hope is a concept that has intrigued scholars across multiple disciplines for hundreds of years (Blouser et al., 2022; Gallagher & Lopez, 2018). There are different ways of understanding what hope is and the extent to which hope is a positive or negative influence. Below I present some of these ways.

2.1 The Meaning and Value of Hope

While there is a general scholarly consensus that hope concerns having a positive orientation to the future (Alarcon, et al., 2013; Bloeser, 2017; Gallagher & Lopez, 2018; Pleeging, et.al., 2019), there are diverse opinions about the extent to which hope leads to

human flourishing. Some perceive hope as a vital strength that is essential to positive individual and societal outcomes (Lueck, 2007; Ojala, 2007; Snyder, 1994), even describing it as “a verb with its sleeves rolled up’, indicating action (Orr, n.d., p. 324). Others perceive hope as akin to a wish that signals passivity and resignation from life’s urgent tasks; an illusion that captivates people’s thoughts but fails to deliver positive outcomes (Courville & Piper, 2004). Others still believe that hope impacts our lives in positive and negative ways, depending on the rationality of what is hoped for and whether one acts to achieve their hopes (Snow, 2022).

Influential novelists, Dostoyevsky (1880), Dickinson (1861), and Thoreau (1854) all reflect favourable views of hope in their respective works. Dostoevsky for example, explored the view of hope as an essential part of human life in *Brother’s Karamazov* when he wrote “To live without hope is to cease to live” (Dostoevsky, 1880, p. 256). Similarly, Dickinson echoes this view in her poem *Hope is the thing with Feathers* (1861): “Hope is the thing with feathers that perches in the soul and sings the tunes without the words and never stops at all. And sweetest in the gale is heard and sore must be the storm” (Dickinson, 1861, p.27). The sentiment expressed in Dickinson’s poem echoes Dostoevsky’s in how it expresses the view of hope as a formidable force that provides people with the impetus and strength to forge a way forward. The poem also suggests that hope has the power to defeat life’s challenges, even in the most adverse of circumstances.

In contrast to Dostoevsky (1880) and Dickinson (1861), absurdist philosopher and author Albert Camus (1942,) presented a different perspective on hope. In his novel "The Outsider", Camus portrays hope as an obstacle to living a meaningful life. He explores this view through his protagonist Meursault, who realises shortly before his execution that his

past preoccupations with illusory hopes have prevented him from experiencing happiness in the present. This realisation leads Meursault to feel liberated and free to embrace happiness in his final moments. Through this narrative, Camus suggests that by becoming fixated on illusory hopes, individuals overlook the present moment and miss out on genuine happiness. Bloeser (2017) suggests that Plato held a similar view on hope, considering it an illusion that impedes present happiness. According to Bloeser's interpretation, Plato believed that the gods controlled humanity's fate, thus rendering hope futile. This perspective aligns with the idea that preoccupation with future outcomes can detract from experiencing contentment in the present moment.

Henry David Thoreau (1854), a philosopher, poet, and environmental activist, had a more nuanced view of hope, going beyond the view of hope as simply positive or negative. Thoreau viewed hope as involving desires for the future and planning and acting to realise such desires. Thoreau compares hope to 'castles in the air,' stating: "If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them" (Thoreau, 1854, p. 323). This metaphor implies that hope involves both cognition and agency. The perspective on hope as encompassing cognition and agency is shared by scholars across multiple fields, including psychologist Charles Snyder (1994, 2000, 2002), philosopher Victoria McGeer (2004, 2008) and physicist Angela Wilkinson (Flowers & Wilkinson, 2018). Such perspectives are elaborated upon in subsequent sections.

Hope is a complex and multifaceted construct that can be viewed and discussed from various perspectives and disciplines. Scholars have studied and interpreted hope in different ways across a wide range of fields including Greek and Norse mythology, theology, anthropology, and health (Bovens, 1999; Gravlee, 2020; Milona, 2019). In the following

section, I synthesise various views of hope to provide a shared, common understanding before I funnel down to two main hope types, non-agentic hope, and agentic hope. Breaking hope down into these two broad sub-categories provides a useful framework for understanding how hope can impact human flourishing. For instance, hope can have positive and negative influences on human flourishing depending on the type of hope.

2.2 Shared Understandings of Hope

In the existing hope literature, there is a shared scholarly consensus that hope comprises two key elements: longing for a specific future outcome, and belief that this desired outcome is possible (Bloeser, 2017; Day, 1969; Gallagher & Lopez, 2018). This perspective is often referred to as the "standard" (Meirav, 2009), "orthodox" (Mittleman & Martin, 2014), or "bare-bones" (Gallagher & Lopez, 2018) understanding of hope. As Downie (1963) articulates, "First, something must be desired by the hoper...and second, the object of hope must fall within a range of physical possibility which includes the improbable but excludes the certain and the merely logically possible" (p. 248). However, while this shared perspective provides two necessary conditions for hope, it fails to capture the complex nature of what hope truly is (Gallagher & Lopez, 2018). This basic definition overlooks important elaborations, nuances, and discussions such as whether hope is non-agentic or agentic, whether hope primarily involves cognition or emotion and how hope is influenced by social contexts. Therefore, while the common understanding of hope provides an important starting point, it is essential to recognise its multidimensional nature to fully appreciate its significance to sustainability engagement and its potential contribution to sustainability education. In the following section I delve deeper into these concepts, exploring the complexities and nuances of hope beyond its basic definition.

2.2.1 Non-Agentive Hope

Non-agentive hope involves wishing for something while relying on external powers to make it a reality. People with non-agentive hope passively await their hopes to be fulfilled without taking constructive steps towards realising them (Gallagher & Lopez, 2018). In the hope literature, this type of hope is often referred to as: wishful, blind, false, fake, magical, and unrealistic hope (Gallagher & Lopez, 2018). Non-agentive hope is generally perceived as having a negative influence on personal and social development (Bloeser & Stahl, 2017). Its potential negative consequences include loss of material and psychological assets when hopes do not materialize (McGeer, 2004); loss of friendships and esteem when confronted with an unyielding universe, potentially leading to despair and depression (Kwong, 2019), and passivity, which Bloch considers humanity's greatest malefactor (van den Heuvel, 2020). In the psychology academic community, non-agentive hope is identified as optimism which is a related but distinct concept (Gallagher & Lopez, 2018).

2.2.2 Agentive Hope

On the other hand, agentive hope involves actively pursuing and striving to achieve one's hopes. According to various scholars, including Lueck (2007), Ojala, (2012); Gallagher and Lopez, (2018); Kleist & Jansen, (2016); Schwartz and Post, (2002) and Stevenson & Peterson, (2016), agentive hope has a positive influence on both individual and societal flourishing. This is because agentive hope motivates people to engage in behaviours that lead to positive outcomes (Gallagher & Lopez, 2018; Lueck, 2007; Ojala, 2013; Kleist & Jansen, 2016; Schwartz & Post, 2002; Stevenson & Peterson, 2016). People with agentive hope enact multiple strategies to attain their desires, even when some of those strategies fail. Therefore, such people demonstrate resiliency to persist with their hopes even in the face of

adversity (Fielding & Hornsey, 2016; McGeer, 2004, Ojala, 2012a; Richardson et al., 1999; Webb, 2013; Snyder 1997). Bloch (van den Heuvel, 2020) describes agentic hope as humanity's greatest benefactor. This is because agentic hope provides people with the impetus to objectively shape the world around them in positive ways.

2.3 Theories of Hope

Several hope theories feature in the hope literature, including cognitive, emotion and social construction theories. Below I discuss cognitive theories and the empirical research that has utilised them. Then I present emotion theories and research, followed by social construction theories and research.

2.3.1 Cognitive Theories of Hope

Many hope theories discuss the concept of cognition. According to these theories, hope involves assessing the future and estimating the likelihood of achieving positive outcomes. Some notable theorists who have explored this aspect of hope include Drahos, (2004); Kadlac, (2015); Luthans & Youssef, (2007) and Snyder, (1994; 2002). In this context, hope is perceived as a mental act that involves anticipating and imagining a future situation. Furthermore, the cognitive component of hope is evident in its problem-solving focus. For instance, cognitive theories of hope suggest that hope involves absorbing information about the world and actively applying it to achieve desires (Ojala, 2012b).

Psychologist Ezra Stotland (Gallagher & Lopez, 2018) provided one of the first cognitive theories on hope in 1969. He theorised hope as a positive expectation of meeting a goal and presented the view that hope involves estimating the likelihood of one's hopes being realised. Stotland's theory sets out a hope to hopelessness continuum to theorise how

different levels of expectations regarding goal attainment can impact an individual's actions, motivation, performance and persistence in goal pursuit. According to Stotland's theory, hopeful people are "more active and energetic in achieving their goals when they perceive that the likelihood of attaining their goals is higher than zero" (Gallagher & Lopez, 2018, p. 7). Stotland's cognitive theory of hope emphasises the role of mental processes in shaping an individual's expectations and subsequent behaviours, providing a framework for understanding how varying degrees of hope can influence a person's psychological state and goal-oriented actions.

Psychologist Charles Snyder's cognitive view of hope is the most widely accepted across the scholarly literature as the most comprehensive hope model (Gallagher & Lopez, 2018). Snyder's theory (1994; 2000; 2002) goes beyond Stotland's, defining hope as a positive outlook towards the future based on pathways and agency related thoughts. From this view, hope is viewed as a motivating factor for behaviours that lead to goal attainment and as a necessary precondition for action. The theoretical framework of this study is heavily influenced by Snyder's hope theory (See Chapter 3). For an in-depth explication of Snyder's theory, including a discussion on the strengths, assumptions, limitations of the theory, as well as its application to this study see Chapter 3.

Over the past three decades, Snyder's theory has gained significant traction in research across various disciplines. Colla et al. (2022) conducted a comprehensive review of research drawing from hope theory, examining multiple databases including Ovid (PsycInfo), Web of Science, PubMed, EbscoHost (ERIC and ERC), and Scopus. Their findings revealed consistent annual growth in the number of peer-reviewed publications utilising hope theory. Moreover, Colla et al., (2022) found that researchers from a broader range of disciplines are

applying hope theory to their fields of study. Originally, hope theory was used in positive psychology research, but its application has expanded to other fields such as education, sport, and medicine (Colla et al., 2022). Notably, hope theory has recently found application in sustainability-related research, particularly in studies focusing on climate change mitigation behaviours (Geiger, 2019; Li & Monroe, 2019). This emerging trend highlights the theory's potential to contribute to understanding and promoting sustainability engagement in primary aged children.

Research conducted on adults has consistently demonstrated that hope is directly associated with positive outcomes across various aspects of life (Bernardo et al., 2018; Chang & Banks, 2007; Chan et al., 2024; Griggs & Crawford, 2017; Denovan & Macaskill, 2013; Morrey, et al., 1998; Sung, et al., 2013). People with high levels of hope engage in more preventative behaviours such as physical exercise to improve their overall health outcomes compared to those with low hope (Snyder et al., 1997). Athletes with high hope incorporate a wider range of training into their athletic programs and perform significantly better in their respective events than athletes with low hope (Curry et al., 1997). Hope motivates people to invest in their future through pursuing education, establishing businesses, maintaining healthy lifestyles, accepting professional treatment for diseases, and collaborating with others to solve societal problems (Herth, 2000; Graham & Pozuelo, 2018; Gallagher & Lopez, 2018; Snyder, 2000). Relevant to sustainability engagement, people with high hope engage in more climate change mitigation behaviours (Burger, et al., 2021) and are more likely to adopt 'green' eco-friendly technologies (Bukchin & Kerret, 2020).

Research on children similarly indicates that hope positively correlates with favourable outcomes across a range of domains. Children with high hope demonstrate improved

problem-solving skills, creativity and academic performance compared to those with low hope (Chang, 1998; Curry et al., 1997; Lopez & Snyder, 2011). Hopeful children are more likely to adhere to professional health advice such as asthma plans and accordingly have better health outcomes (Berg et.al., 2007). Children with high hope and Sickle Cell Disease report increased happiness and wellbeing (Lewis & Kliewer, 1999). Fewer symptoms of post-traumatic stress disorder (PTSD) have been identified in children exposed to rocket attacks (Kasler et al., 2008), and children with higher levels of hope report greater life satisfaction and resilience to stressors when living in poverty (Chan et al., 2014). Hope also has a strong and positive correlation with mental and social wellbeing among high-school aged children (Bernardo et al., 2018; Chang & Banks, 2007; Crawford & Griggs, 2017; Denovan & Macaskill, 2013; Bundick & Wandeler, 2011).

2.3.2 Emotion Theories of Hope

An alternative perspective to theories of hope that primarily involve cognition, are emotion theories of hope. Emotion theories of hope attest that hope is not a purely, or even a mostly, cognitive rational and logical process, but rather a mostly emotional process (Gallagher & Lopez, 2018). For instance, Scioli et al., (2011) argue that hope is primarily a feeling one gets when estimating the likelihood of a positive outcome. Proponents of the emotion view of hope claim that the way hope is expressed indicates that the emotional aspect of hope is more important than the cognitive aspect (Leung et al., 2009). According to Lazarus, (1999) and Scioli et al., (2011), hope cannot primarily be a cognitive function because people hope for things that cannot be known and that challenge the limits of possibility.

Research applying emotion theories of hope has revealed both positive and negative effects on individual and societal flourishing. This dual nature is particularly evident in studies related to climate change. For instance, Chadwick (2015) found positive effects of hope on anxiety relating to future challenges of climate change, while Hornsey, et al (2016) and Marlon et al (2019) found hope can promote climate complacency by reducing perceived risks of climate change. Gallagher & Lopez (2018) suggest that theories that view hope as primarily being an emotion demonstrate mixed results on human flourishing because they do not emphasise the importance of strategising and acting to realise goals. The potential for emotion-based hope to both alleviate climate anxiety and inadvertently promote inaction on addressing climate change underscores the need for a more comprehensive theoretical framing of hope that incorporates cognitive components into this study.

2.3.3 Socially Constructed Theories of Hope

Socially constructed theories of hope offer a distinct perspective from cognitive and emotion-based approaches by emphasising the role of social interactions and contexts in shaping our hopes. These theories highlight how our social environment, particularly our peers, influences not only what we hope for but also our persistence in pursuing those hopes. From this viewpoint, social contexts are crucial in the evolution of our hopes, serving multiple functions: they motivate us to expand our aspirations, hold us accountable for working towards our goals, provide emotional support during challenges, and assist in identifying pathways to realise our hopes (Braithwaite, 2004; McGeer, 2004;2008). A key concept within socially constructed hope theories is that of shared hope. This involves groups collaboratively establishing mutual objectives, developing strategies, and

implementing plans to achieve collective aspirations. The process of shared hoping is characterised by mutual support among group members, which helps in overcoming obstacles and managing disappointments. Proponents of this perspective argue that shared hope acts as a powerful driver for meaningful social change by focusing the collective energy and resources of a group towards a common goal (Drahos, 2004; Courville & Piper, 2004). This collaborative approach is believed to yield more significant outcomes compared to individual efforts alone, as it leverages the diverse skills, perspectives, and resources of the entire group.

Empirical research on socially constructed hope supports the theory that social contexts influence hope. For instance, political systems dictate the pre-requisites for hope, such as a supportive societal structure that allows individuals to live a happy life and achieve personal and societal progress (Stevenson & Peterson, 2016). This is evident in how children who do not trust governments to act on climate change are less likely to have hope that climate change can be mitigated (Hickman, et al., 2021). Additionally, family and friends directly influence hope. For instance, Benzein and Berg (2005) found that the hope of palliative care patients is inspired by their families. In addition, Parker et al., (2015) discovered that the levels of hope experienced by a child's particular peer group predict the child's hope and Morley et al., (2013) found that child soldiers who receive support from their family, peers, and communities during their reintegration into society have more hope for their futures than child soldiers without support. Education contexts also play a crucial role in developing hope. Finnegan et al., (2022) discovered that teachers who empathise with students' negative emotions about climate change while maintaining a positive and solution-oriented outlook, positively influence children's hope for futures.

Part Two: Hope, Sustainability Engagement, and Sustainability Education

Given current and impending sustainability challenges (Wallace-Wells, 2017), hope has recently gained importance in sustainability engagement and education (Kelsey, 2020). Hope's ability to inspire actions that lead to positive outcomes (Kelsey & Armstrong, 2012; Ojala, 2007; Snyder, 2000) makes this development unsurprising, as hope has been shown to directly motivate behaviours that result in favourable outcomes across various contexts. In the following sections, I explore the connection between hope and sustainability engagement in theory and research, the importance of hope in the context of sustainability education, and how hope is conceptualised and applied in sustainability education policy and practice.

2.4 Hope and Sustainability Engagement Theory

Hope involving cognition and social dimensions is theorised to be most important for engaging people to bring about positive sustainability outcomes. Active (Macy & Johnstone, 2012) and realistic (Wilkinson & Flowers, 2018) hope are two types of hope that incorporate cognitive and social dimensions. I discuss the concepts of active and realistic hope below.

2.4.1 Active Hope

Active hope is theorised to be a crucial prerequisite for sustainability engagement. Macy and Johnstone (2012) posit that people with active hope are committed to "bringing about what [they] hope for" (p. 3) by setting realistic sustainability goals, identifying the steps needed to achieve them, and taking action. Active hope is also considered to be contagious, "power that we can catch from others" (Macy & Johnstone, 2012, p. 120). Active hope is significantly important in the context of sustainability, because addressing complex sustainability challenges requires collective effort. The more people who practice active

hope, the greater the potential for positive change, because if practicing active hope at an individual level can inspire others to do the same, the potential for widespread positive impact increases.

2.4.2 Realistic Hope

Realistic hope is theorised to be a type of hope that is grounded in reality, based on a clear understanding of the sustainability challenges facing the planet. Realistic hope involves setting achievable goals and taking practical steps towards achieving them. Wilkinson and Flowers (2018) posit that people with realistic hope set and enact sustainability goals that reflect the collective interests of society. They suggest that they do this by examining the widest set of consequences of sustainability challenges on communities, and collaboratively planning and acting to achieve equitable sustainability goals. Wilkinson & Flowers (2018) people with realistic hope have great potential to transform environments by redressing societal power imbalances and inequities to support collective human flourishing (Macy & Johnstone, 2012).

2.5 Hope and Sustainability Engagement Research

Empirical research supports the theory that hope involving cognition and social dimensions positively correlates with increased sustainability engagement. Hope reflecting such dimensions can motivate children to engage in pro-sustainable behaviours and advocate for positive change. For instance, Ojala and Bengtsson, (2019) found that secondary-aged children who have hope characterised by an ability to realistically acknowledge sustainability challenges while collectively strategising to mitigate them are more likely to engage in climate change mitigation behaviours including reducing energy consumption and advocating for policy change. Similarly, Li and Monroe (2018) found that

secondary-aged children who have hope characterised by positive outlooks to the future and strong perceived capacities to strategise routes to alleviate sustainability challenges are more likely to engage in pro-sustainable behaviours such as supporting pro-sustainable policies. Bukchin and Kerret (2020) found that hope involving collective critical thinking and collective problem-solving leads secondary-aged children to engage more meaningfully in sustainability education activities. A study by Stevenson et al., (2014), found that hope is fostered through social interactions and experiences of community involvement in efforts to realise sustainable outcomes leads to increased engagement in recycling efforts. Another study by Bohm and Pfister (2015) found that children who have hope involving critical thinking are more likely to discuss sustainability issues with their parents and encourage them to take action to realise positive outcomes.

Hope without cognitive dimensions is often associated with weaker sustainability engagement (Hasan-Aslih et al., 2019). When hope is based on wishing for positive outcomes without recognising one's role in brainstorming solutions and taking action, it can have a negative effect. For instance, Ojala (2012a) found that high-school-aged children who rely on external factors, such as technological advancements or other people, to solve climate issues exhibit low levels of sustainability engagement. Similarly, Bain et al. (2016) found that hope based on the belief that external solutions will address sustainability challenges without personal involvement can lead to "moral licensing," whereby individuals feel justified in engaging in environmentally harmful behaviours because they expect future technologies or policies to solve these problems.

Research on high-school and university aged youths shows that hope for futures and sustainability engagement can be iterative and mutually reinforcing (Ojala 2007; Stevenson,

et al., 2014; Vandaele et al., 2022). For instance, children who have constructive hope for futures express a confidence in their capacities to strategise and enact pathways to realise positive outcomes for environments leading them to engage in greater sustainability actions such as recycling than their peers (Stevenson et al., 2014). In addition, when children engage in actions that benefit the environment, their hopes for a better future are reinforced, thereby creating a positive feedback loop (Persson, et al., 2011; Vandaele et al., 2022). In this way, hope provides the impetus to engage in efforts to ameliorate sustainability challenges, and sustainability engagement provides a sense of hope that the future can be shaped in desirable ways.

2.6 The Importance of Building Hope for our Future World

Given the link between hope and sustainability engagement, it is unfortunate many children demonstrate bleak outlooks towards the future world. For instance, a survey conducted in Australia involving 600 children aged 10-14 years, found 25% of children believe the world will come to an end before they reach adulthood (Tucci et al., 2007). Similarly, a global survey in 2021 including 10,000 participants, aged 16-25 years revealed that 56% of the respondents expressed the belief that humanity is doomed (Hickman et al., 2021). The same study found that 55% of respondents predict that what they value most will be destroyed during their lifetimes. A small body of research conducted with younger children demonstrates that children as young as five expect the Earth will get too hot in the future (Davis, 2010). Moreover, some younger children expect an apocalyptic future world without animals or trees (Eckersley, 2012; Flear, 2002).

Lack of hope for our future world can have a negative impact on wellbeing and mental health. Studies by Eckersley (1999), Flear, (2002); Hickman et al., (2021) and Strife, (2012)

demonstrate that some children feel sad, scared, anxious, angry and powerless when imagining the future. Such feelings about the future can manifest in negative ways including depression, trouble sleeping, panic, lack of motivation and difficulty concentrating. Such manifestations can affect children's overall wellbeing and ability to learn, make friends and enjoy life (Gallagher & Lopez, 2018; Léger-Goodes et al., 2022). Furthermore, a significant proportion of young people report that their fears about the consequences of climate change impact them daily, leading them to have trouble maintaining concentration on tasks and feelings of general unhappiness (Hickman et al., 2021). The significance of children's bleak outlooks towards the future is reflected in reports by British based National Health Service (NHS) child and adolescent psychologists, who state that a large proportion of their work (i.e., 60% of cases) is now devoted to helping children manage ecological distress (Royal College of Psychiatrists, 2020). Such studies highlight the urgent need to build hope for our future world not only for sustainability engagement but also to support wellbeing and mental health.

2.7 Hope and Sustainability Education Theory

There is a growing consensus that building hope for our future world within the context of sustainability education can contribute to counteracting children's negative perceptions of the future and engage them to address sustainability challenges (Halpin, 2001; Hicks, 2014; Kelsey, 2020; Li & Monroe, 2018). Halpin (2001) suggests that by teaching children that liveable futures are achievable, educators can prevent feelings of despondency and inspire children to engage in actions that can lead to positive outcomes. Cherry (2016) supports this view, arguing that teaching children to recognise their potential to make a positive impact can help them to engage more constructively with sustainability challenges.

Li and Monroe (2018) emphasise that hope is a prerequisite for engaging with complex sustainability issues, making it essential for teachers to build hope in their students. Similarly, Ojala (2012a; 2017) observes that embedding hope in sustainability education can inspire children to protect the environment, strengthen their resilience, and enhance their emotional well-being in the face of these challenges. Kelsey (2020) concurs, stating that hope is a vital element of effective sustainability education as it motivates children to work towards positive futures.

Several scholars propose suggestions on how to incorporate the building of hope in the context of sustainability education. Hicks (2014) recommends engaging children in activities that encourage them to envision, plan and carry out actions towards positive futures. Kelsey (2020) advises providing children with a ‘groundswell’ of positive stories of environmental restoration and recovery to counteract the prevalent narrative of environmental decline. Several scholars such as Hicks (2014) and Ojala (2012a) endorse developing children’s trust in the collective efforts of others towards achieving positive sustainability outcomes. These scholars assert that without a perception of such collective action, children may feel their individual efforts to address sustainability problems would be futile.

Despite sustainability education’s potential to build children’s hope for our future world, there is concern that the dominant way that sustainability education is currently delivered in schools may be having a negative impact on hope. Kelsey (2020) argues that sustainability education operates within a grand narrative of environmental ‘gloom and doom’, focusing on stories of environmental loss and excluding stories of environmental recovery and restoration, leading children to lose hope. Hicks (2014) asserts that teachers

can sometimes unwittingly evoke anxiety, despair and hopelessness for futures when teaching about environmental challenges, threats, and degradation. Stevenson and Peterson (2016) posit that the default mode of delivering climate education via a knowledge transmission model can trigger profound feelings of hopelessness in children. They warn that developing children's knowledge about climate challenges can overwhelm them and stymie their motivation to act to ameliorate climate challenges. Bonnett (2004) contends that sustainability education tends to focus on sustainability challenges such as environmental degradation, species extinction, and the depletion of natural resources rather than solutions to challenges, leading to a negative impact on hope. Jickling and Wals (2008) point out that the emphasis on environmental degradation in sustainability education can lead to apathy among learners, which is counterproductive to the premise of sustainability education to motivate sustainability engagement.

2.8 Hope and Sustainability Education Research

Research supports the view that sustainability education can foster children's hope for our future world. For example, Ojala (2015) found that incorporating future-oriented dimensions in secondary school sustainability lessons can promote a stronger sense of constructive hope among students. In a separate study, Ojala (2017) highlighted the importance of developing secondary-aged children's trust in others to address sustainability challenges, as this trust is crucial for building and maintaining hope and engagement. Specifically, Ojala discovered that when children see others taking action on sustainability issues, they feel more hopeful about the potential impact of their own efforts.

Classroom culture in secondary schools can also be a source of hope in the face of climate change (Li & Monroe, 2018; Ojala, 2012a, 2015). This hope can be nurtured through

various approaches, such as teachers using positive reappraisal—acknowledging children’s concerns about climate change while framing the situation in a more optimistic light (Ojala, 2012a)—or by providing opportunities for students to express their feelings about climate change without judgement (Ojala, 2015; Ojala & Bengtsson, 2019).

Research also supports the theory that the current sustainability education being delivered in schools may sometimes contribute to children’s lack of hope for futures. For instance, Verlie and Flynn (2022) found that children who participated in school strikes for climate cited their perceptions of ineffective sustainability education as one of the reasons for their engagement in the strikes. Children explained that their sustainability education is making them feel powerless to effect positive sustainability outcomes, while on the other hand, engaging in strikes makes them feel inspired and motivated to take sustainability action. Furthermore, Dunlop and Rushton (2022) found that children want ‘less eco-anxiety’ (p. 8) from their sustainability education and that sustainability education teachers are concerned they are embedding anxiety about the future through their sustainability programs. Dunlop and Rushton (2022) suggest that teachers need more policy and training support to assist them to build hope in their students.

2.9 Hope and Sustainability Education Practice

The extent to which teachers build hope in their students through their sustainability education practices can vary significantly. This is highlighted in the above sections on hope and sustainability education theory and research where sustainability education is identified as having the potential to influence hope in both positive and negative ways. The capacity of a teacher to deliver sustainability education in a way that builds hope is influenced by various factors. These include the quality of sustainability education programs adopted by

the school where the teacher is working, the level of support for sustainability education provided by the school, including opportunities for teacher professional development (Dunlop & Rushton, 2022), and the teachers' awareness of the significance of building children's hope for futures (Dunlop & Rushton, 2022). Teacher's report that they want to build hope through their practices, but they require support to do this (Dunlop & Rushton, 2022). Having worked as a teacher in various Australian schools for more than ten years, I have firsthand experience of a lack of support for building hope in the context of my practice leading to negative impacts on children's hope.

2.10 Hope and Sustainability Education Policy

Australian sustainability education policy presents a barrier to the widespread adoption of practices that build hope. This is evident in the Sustainability Cross Curriculum Priority (SCCP); Table 2.1 (below) which does not explicitly mention "hope," but instead implies it through the priority's 'Futures Key Concept' which relates to "building capacities for thinking and acting in ways necessary to create a more sustainable future" and "empowering young people to design actions that lead to a more equitable and sustainable future" (Australian National Curriculum's Sustainability Cross-curriculum Priority [SCCP], 2022).

Table 2.1

The Australian National Curriculum's Sustainability Cross-curriculum Priority (SCCP)

<i>Key Concepts</i>	<i>Organising Ideas</i>
<i>First Key Concept: Systems</i>	OI.1 The biosphere is a dynamic system providing conditions that sustain life on Earth.

This first key concept explores the interdependent and dynamic nature of systems that support all life on Earth and our collective wellbeing.	OI.2 All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival. OI.3 Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems.
<i>Second Key Concept: World Views</i> This second concept enables a diversity of world views on ecosystems, values and social justice to be discussed and recognised when determining individual and community actions for sustainability.	OI.4 World views that recognise the dependence of living things on healthy ecosystems, and value diversity and social justice, are essential for achieving sustainability. OI.5 World views are formed by experiences at personal, local, national and global levels, and are linked to individual and
<i>Third Key Concept: Futures</i> The third concept is aimed at building capacities for thinking and acting in ways that are necessary to create a more sustainable future. The concept seeks to promote reflective thinking processes in young people and empower them to design action that will lead to a more equitable and sustainable future.	OI.6 The sustainability of ecological, social and economic systems is achieved through informed individual and community action that values local and global equity and fairness across generations into the future. OI.7 Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments. OI.8 Designing action for sustainability requires an evaluation of past practices, the assessment of scientific and technological developments, and balanced judgements based on projected future economic, social and environmental impacts. OI.9 Sustainable futures result from actions designed to preserve and/or restore the quality and uniqueness of environments.

The SCCP (Table 2.1) is developed around three key concepts: systems, world views and futures. Each of the key concepts comprise a set of organising ideas that provide a scaffold for developing content knowledge, understanding and skills. The absence of explicit

reference to hope in the SCCP creates challenges for sustainability education practice, as ambiguity in policy language can lead to ineffective translation and implementation (Matland, 1995). Accordingly, explicitly including hope in the SCCP would better support teachers in embedding it within their sustainability education practices.

2.11 Conclusion

This chapter has charted a course through the multifaceted landscape of hope, its relevance to sustainability engagement, and its role in sustainability education. The first part of the chapter explored hope's diverse conceptualisations, from non-agentic to agentic forms, before traversing through cognitive, emotional, and socially constructed theories of hope. This progression revealed that hope, when imbued with cognitive and social dimensions, serves as a powerful catalyst for engagement in actions that can lead to the attainment of positive outcomes. The second part of the chapter affirms the importance of building children's hope for our future world in the face of eco-anxiety and resignation to degraded futures to promote sustainability engagement. The second part of the chapter also highlighted the potential of sustainability education to build hope and pointed to shortcomings of current sustainability education.

Chapter Three: Assuming a Theoretical Framework

This PhD thesis, which explores children's hope for our future world and the implications for sustainability education, draws on Snyder's (e.g., 1994, 2000, 2002) cognitive theory of hope and McGeer's (2004, 2008) socially constructed theory of hope. As explored in Chapter 2, Snyder defines hope as a positive orientation toward the future, based on two key components: pathways thinking and agency thinking, while in contrast, McGeer focuses on how hope is developed through social interactions.

There are several reasons why I elected to utilise a combination of Snyder's cognitive view of hope and McGeer's socially constructed view of hope to realise the aims of this study. First, to provide a more comprehensive understanding of how children conceive hope by drawing on multiple perspectives on what hope is. Second, to gain deep insight into how the cognitive dimensions of children's individual hope, that is their abilities to generate and enact pathways to positive futures are influenced by their broader socio-cultural contexts. And finally, to more thoroughly highlight opportunities and challenges associated with building children's hope in the context of sustainability education.

I present this chapter in three subsections. In the first section I explicate Snyder's hope theory, and in the second section I explicate McGeer's hope theory. In each of these first two sections I provide an overview of the corresponding theory and describe its strengths, assumptions, and limitations. In the third section, I describe my rationale for combining the two theories to provide the theoretical framework for this study. Then I present a visual overview of my theoretical framework. The visual overview provides a clear representation of the key hope concepts that inform my study and how they relate to each other.

3.1 Snyder's Hope Theory

Snyder's (1994, 2000; 2002) hope theory emphasises the importance of hope in shaping individuals' attitudes towards achieving desirable outcomes. Snyder posits that hope arises when individuals set challenging goals for themselves which serve as a focal point for their energy and attention. Snyder suggests that this positive motivational orientation to the future is characterised by positive feelings about the future and persistence to attain goals despite challenges or setbacks to realising them. This is achieved through pathways thinking (identifying multiple strategies to reach goals) and agency thinking (belief in ability and initiative to reach goals).

3.1.1 Key Concepts

Key concepts associated with Snyder's hope theory include pathways thinking, agency thinking, the role of emotions in hope, hope measurement and hope development and intervention. I explore these concepts below.

Pathways Thinking

Pathways thinking is the perceived ability to generate routes or develop strategies to meet future goals (Snyder, 1994). In this way, pathway thoughts can be seen as the dots that connect the present to the realisation of our goals (Snyder, et al., 1997). According to Snyder (2002), human beings conceptualise time in terms of past, present, and future. Accordingly, human beings are in a constant state of planning strategies in the present to meet their future goals (Snyder, 2002). For instance, if one sets a goal of growing tomatoes, they will immediately start strategising pathways to grow them. Snyder theorises that people with high hope generate more pathways to their goals than people with low hope. He also

suggests that they are more likely to try multiple pathways at once and that they have strong capacities to change pathways if there is a barrier to goal attainment. Resulting, Snyder (2002) ascertains that people with high hope are more resilient to setbacks to goal achievement than people with low hope.

Agency Thinking

Agency is the motivational part of hope theory. It is the perceived ability to use pathways to reach goals (Snyder, 1994). Agency thinking involves the belief that one can initiate and sustain movement along pathways. People with high agency engage in self-talk, telling themselves, “I can do this, and I will do this” (Snyder, et al., 2007, p.327). Agency thoughts are critical in goal pursuit when there are obstacles to goal achievement. This is because they supply the motivation to try alternate pathways (Snyder, 1994).

Pathways and Agency Thinking Together

An important part of Snyder’s hope theory is that hopeful thinking requires both pathways and agency thinking. It is theorised that these two tools in the context of goal pursuit are related yet distinct (Snyder, 1989). For instance, there is a reciprocal and additive relationship between pathways and agency thinking (Snyder, 2002). In other words, pathways thinking enhances agency thinking and vice-versa.

Hope and Emotions

Snyder (1994) suggests that hope drives emotions and wellbeing. Snyder (2002) theorises that success in achieving goals results in increased wellbeing and failure to achieve one’s goals results in decreased wellbeing. Further, Snyder (2000) posits that unsuccessful goal pursuit is usually the product of insufficient pathways or agency thoughts, or unrealistic

goal setting. Snyder (2002) also suggests that while people with high and low hope both experience negative emotions from failed goal pursuits, people with high hope are more likely to frame failed goal pursuits as obstacles to be overcome or reimagine more realistic goals. People with low hope on the other hand, are more likely to abandon their goals and develop apathy (Gallagher & Lopez, 2018). In this way, high hope is associated with superior coping skills, resilience, and wellbeing in the face of obstacles to goal achievement as opposed to low hope (Snyder, 2002).

Hope Measurement

Snyder developed adult and child hope measurement scales from his hope theory (Snyder et al., 1997). These scales comprise pathways and agency statements such as: When I have a problem, I can come up with lots of ways to solve it. And, even when others want to quit, I can come up with ways to solve a problem (Snyder, 1997, p.419). These adult and child hope quantitative measurement scales have received extensive validation across a breadth of hope research areas including academic and athletic performance and global life satisfaction (Babyak et al., 1993; Cheavens et al., 2000; Snyder et al., 1997). They have also been adapted to qualitative research in health focussed studies where respondents answer or give short responses to questions designed to elicit perceived pathways and agency to goals (Olsman et al., 2014).

Hope Development and Intervention

Snyder (2002) suggests that hope begins to develop from birth. For example, a newborn quickly learns that crying prompts their mother's response. In this way, infants are already setting goals (seeking their mother) and initiating pathways to achieve them (crying). By 11 to 21 months, children start to verbalise their agency thoughts. Consider the 18-

month-old who insists, "I'll do it," when an adult tries to feed them. As children grow, their goals become more selective and complex. For instance, a five-year-old might choose a specific toy from several options because they have identified a set of goals to accomplish with it (Snyder, 2000).

According to Snyder (1994, 2000), parents, caregivers, and teachers play a critical role in fostering children's hope. Like adults, children face barriers in their pursuit of goals. When these barriers are not overcome or the goal remains unchanged, negative emotions arise, and well-being is negatively affected (Snyder, 2002). Unsuccessful goal pursuit is considered a leading cause of childhood anxiety, depression, and disengagement from life (Snyder, 1994). However, Snyder (1994) argues that parents, caregivers, and teachers should not shield children from these barriers. Instead, they should frame obstacles as learning experiences, helping children adjust their goals or scaffold their pathways and agency thinking to achieve success. Hope intervention programs in schools based on this approach have shown that all children's hope, goal attainment, and well-being can improve. Snyder (2000) asserts that building hope during schooling can support children in becoming high-hope thinkers, helping them "cope with and resolve the problems of today and tomorrow" (p. 25).

3.1.2 Assumptions

Snyder's hope theory is based on several key assumptions about the nature of hope and its role in motivating engagement in behaviours that lead to positive outcomes. I describe these assumptions below.

1. Goals are central to hope. Snyder's hope theory is based on the premise that human behaviour is goal driven. This means that goals are the mental targets that

drive human direction and motivation. Snyder assumes that a lack of goals leads to depression and apathy. Goals are assumed to be essential to a positive orientation to the future that is characterised by increased energy and persistence.

2. Pathways thinking promotes agency thinking. Snyder assumes that identifying multiple routes to one's goals (pathways thinking) leads to increased belief in one's abilities and initiative to act to realise goals (agency thinking).
3. Hope can be learned. Snyder posits that hope is not innate but rather is learned through experience, practice, and feedback from others.
4. Hope is malleable. Snyder contends that hope can be developed by making an intentional effort to set goals and strategise and enact pathways to realise them.
5. Positive emotions facilitate hope. Snyder argues that feelings such as self-confidence promote a hopeful outlook.

3.1.3 Strengths

There are several strengths of using Snyder's Hope Theory as a theoretical framework to investigate children's hope for our future world. First, Snyder's hope theory is the most widely utilised and extensively validated theoretical framework to studies related to hope (Gallagher & Lopez, 2018). Snyder's hope theory has been successfully applied to contribute understanding about the relationship between people's levels of hope and their capacities to effect positive outcomes, and to inform the design of hope-intervention programs in diverse settings including clinical psychology and educational contexts (Cheavens et al., 2006; Davidson et al., 2012; Marques et al., 2011; Snyder et al., 2007 & Weis & Speridakos, 2011). Furthermore, Snyder's hope theory has been used to measure hope regarding climate change and willingness to adopt climate change mitigation behaviours, as well as hope

interventions that have led to increased climate change engagement (Chapter 2). Second, Snyder's hope theory is applicable across different age groups (Snyder, 2002). As mentioned in Chapter 2, Snyder's hope theory has been widely utilised in research on adults and children. Given this research involves children, utilising Snyder's theoretical framework offers a compatible choice. Last, using Snyder's theoretical framework to explore the concepts of pathways and agency thinking in the context of children's conceptions of hope for our future world, will provide clear insight into children's perceptions of their own abilities to contribute towards realising positive futures. This information can be used to suggest sustainability education activities that build on children's current levels of hope.

3.1.4 Limitations

Snyder's (2002) hope theory overlooks social dimensions of hope. This presents a significant limitation to using it to frame this study. First, by focussing on the cognitive processes of goal setting and pathways thinking, it fails to fully capture the complex socio-cultural factors that shape individual hopes. This is a problem because social structures and cultural norms play a significant role in shaping how individuals perceive their capacities to realise positive sustainability outcomes (Diffey et al., 2022; Ojala & Bengtsson, 2019). For instance, children's perceptions of a dearth of government policy support for environmental protection can lead them to lose hope in the capacity of their individual efforts to realise positive outcomes (Diffey et al., 2022; Ojala & Bengtsson, 2019). Moreover, Snyder's hope theory emphasises individual goal setting, pathways thinking and agency (Snyder, 1997; Gallagher & Lopez, 2018). However, sustainability challenges often involve complex systemic problems that require shared goals of sustainability protection, combined with collaborative planning, and collective action to mitigate them. McGeer (2004) argues that Snyder's focus

on individualised goals and pathways makes it inappropriate to apply to a societal issue such as climate change, which involves the coordination and collaboration of, and reliance on, multiple stakeholders for successful mitigation. Therefore, I incorporate McGeer's (2004) theory of hope as socially constructed into Snyder's theoretical framework to frame this study.

3.2 McGeer's Hope Theory

McGeer's (2004, 2008) theory of hope emphasises a social constructionist perspective. According to McGeer our social contexts and interactions with others significantly shape how we envision future possibilities and influence our attitudes toward achieving our hopes. McGeer argues that hope is not solely an individual cognitive or emotional experience but is also shaped by the broader social environment. McGeer introduces the concept of 'shared hoping,' a collective effort in which a group establishes common goals and collaborates to achieve them. This form of hope is powerful as it involves collective strategising, mutual support during challenges, and joint efforts to overcome obstacles, ultimately enhancing the overall levels of hope for all individuals involved.

3.2.1 Key Concepts

Two key concepts in McGeer's (2004, 2008) theory of hope are that hope is socially constructed and that trust in others is essential for building it. According to McGeer, hope is not merely an individual emotional state but is shaped by cultural contexts, social interactions, and shared narratives. Furthermore, trust in others plays a vital role in shaping hopeful thinking by creating conditions that allow individuals to envision positive future possibilities. Trusting relationships provide emotional support, opportunities for

collaboration, and access to external resources, all of which contribute to maintaining a positive outlook, motivation, and resilience when facing challenges in the pursuit of hopes.

Hope is Socially Constructed

McGeer (2004) contends that hope is socially constructed through culture and social interactions. She suggests that our hopes reflect the values and norms of our cultural context. For instance, if our social and cultural groups are hopeful about achieving positive sustainability outcomes and actively work toward achieving them, we are more likely to adopt those same hopes, values, and behaviours, as we feel validated in pursuing them. Additionally, McGeer posits that social interactions shape our hopes by providing feedback on what is realistic or achievable. The support or criticism we receive from others can influence our decision to continue pursuing our hopes or to abandon them.

Trust is Critical to Hope

A core concept of McGeer's (2004, 2008) theory is that trust in others sustains hope (2008, p. 270). Trusting others to support one's hopes provides the motivation to act toward realising them. This concept is evident in the behaviour of children who do not trust that governments will protect their hopes for positive futures through environmental policies; as a result, they are less likely to take action to achieve positive sustainability outcomes (Diffey et al., 2022). Additionally, McGeer (2004) argues that individuals must have some level of trust in others' ability to contribute to positive sustainability outcomes if they are to stay focused on achieving those outcomes in the face of setbacks.

3.2.2 Assumptions

Like Snyder's theory of hope, McGeer's (2004) is also based on several assumptions, which include:

1. Hope is a social practice that requires trust in others. According to McGeer (2004), hope cannot be understood solely as an individual emotion or cognitive process. Rather, it is deeply embedded in the wider social context.
2. Hope has cognitive and emotion dimensions. McGeer (2004) proposes that hope involves planning and acting to realise our hopes (cognitive dimension) and how we feel about our hopes (emotional dimension) which is heavily influenced by our social interactions.
3. Shared hopes are important for collective sustainability action. McGeer (2004) argues that when people share common hopes for the environment or society, they are more likely to work together towards achieving those goals.

3.2.3 Strengths

Using McGeer's (2004) theory of hope as a theoretical framework to guide an exploration of how children conceive hope for our future world and the influences on those ways has several benefits. First, it can provide insight into how children's hopes for our future world are shaped by social interactions. Second, analysing how the group of children included in my research sample conceive hope collectively, will enable me to identify where consensus exists regarding what positive futures look like and what pathways and actions need to be taken to achieve them. This can provide a basis for suggesting shared goals for future environments to be explored in the context of sustainability education. Third,

incorporating cognitive and emotion dimensions of hope in my study will provide me with insight into what children believe about our future world and how they feel about it.

3.2.4 Limitations

There are several limitations to using McGeer's (2004; 2008) theory of hope to develop a theoretical framework to this study. First, there is lack of specificity in McGeer's work regarding what hope is. McGeer does not provide a clear definition or operationalisation of hope, and this lack of clarity makes it difficult to use her theory as a sole lens to study how children conceive hope for our future world. Second, the role of cognitive factors that are important to hope such as pathways thinking is not clearly outlined. Third, I could not locate empirical studies that have used McGeer's (2004; 2008) theory of hope to conduct research with children. Therefore, adopting McGeer's (2004; 2008) hope framework as a sole lens to realise the aims of this study is not appropriate.

3.3 Combining Snyder and McGeer's Theories

I combine Snyder (2002) and McGeer's (2004) theoretical frameworks to this study to overcome the limitations inherent in both. Primarily, the theoretical framework of this study draws from Snyder's comprehensive theory and thereby aligns with all of Snyder's key concepts and assumptions. Secondly, the theoretical framework of this study incorporates McGeer's (2004) key concepts and assumptions. The rationale is to incorporate the strengths of the two frameworks to provide richer insight into the phenomenon under investigation while protecting against their individual limitations.

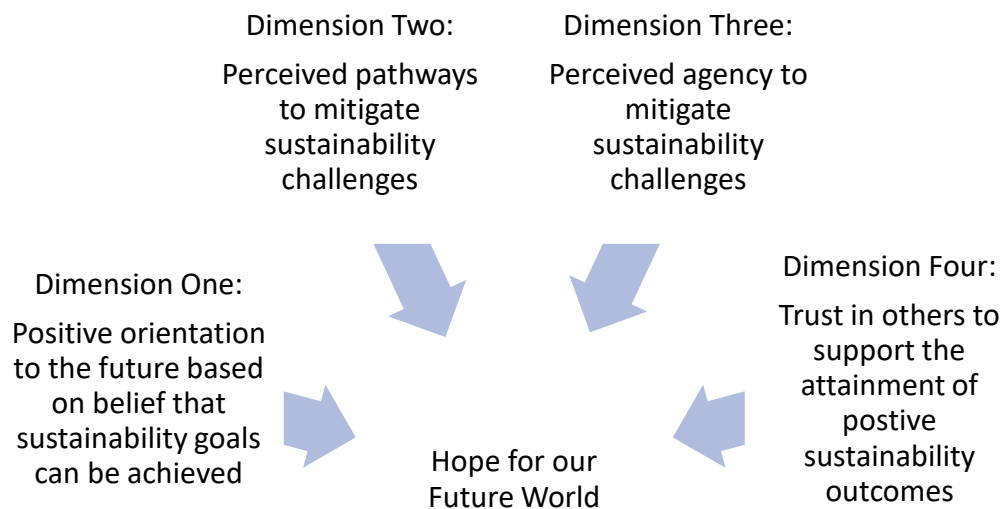
3.3.1 A Visual Representation of the Theoretical Framework to this Study

A visual representation of the theoretical framework to this study combining Snyder's (1997; 2002, etc) and McGeer's (2004; 2008) hope theories is provided below (Figure 3.1). This framework emphasises the importance of both individual factors and social contexts in shaping children's conceptions of hope for our future world. Four main hope dimensions provide the theoretical lens to this study. The first three dimensions derive from Snyder's hope theory: positive orientation to the future based on the belief that sustainability goals can met: perceived pathways to mitigate sustainability challenges; and perceived agency to mitigate sustainability challenges. The fourth and last dimension derives from McGeer's (2004) hope theory: trust in others to support the attainment of positive futures.

Figure 3.1 (p.61, overleaf) outlines the theoretical framework guiding this study, showing how four different hope dimensions contribute to hope for our future world. Together, these four dimensions help create a positive motivational state characterised by increased energy and persistence toward achieving positive futures (Snyder, 1994, 2000, 2002), while also accounting for the broader socio-cultural contexts in which these processes occur (McGeer, 2004, 2008).

Figure 3.1

Theoretical Framework Guiding this Study



The framework presents four key dimensions of hope for our future world. The first dimension involves the belief that positive sustainability outcomes are possible. The second dimension requires individuals to identify strategies for achieving these outcomes. The third dimension emphasises the belief that individuals have the ability or initiative to execute the strategies identified through pathways thinking. Finally, the fourth dimension highlights the importance of trust in others to provide support in the pursuit of sustainability goals.

These four dimensions guide the design of this study, shaping both data collection and analysis. For example, the research questions are crafted to elicit children's capacities to engage with these four hope dimensions. Additionally, children's conceptions of hope for our future world are categorised into higher or lower hope categories based on their alignment with these dimensions.

Chapter Four: Phenomenographic Methodology

This chapter outlines the phenomenographic methodology I employ to contribute understanding about how primary-aged children conceive hope for our future world, influences on their hope and variations in their hope. I begin the chapter with an overview of the interpretivist paradigm in which phenomenography is situated. I then provide a brief overview of what phenomenography is and a background to phenomenography. Following this, I explicate my rationale for selecting phenomenography to address the four research questions:

1. How do children conceive hope for our future world?
2. What factors influence how children conceive hope for our future world?
3. What are variations in children's hope for our future world?
4. What are the implications for sustainability education?

I then describe phenomenography's ontological and epistemological foundations and its focus on 'ways of conceiving.' I provide detail about the phenomenographic approach to data collection and analysis and the expected outcomes of phenomenographic research. To conclude the chapter, I outline criteria for evaluating phenomenographic inquiry.

4.1 The Interpretivist Paradigm

This phenomenographic study is positioned within the interpretivist paradigm, a research tradition that is primarily concerned with understanding human experiences, beliefs, conceptions, and perceptions. Interpretivist studies regard reality as being subjective and socially constructed (Mackenzie & Knipe, 2006). Thus, the goal of interpretive research is to provide understanding about how individuals interpret the world differently based on

their cultural and temporal contexts (Scott & Usher, 1996). The interpretive tradition comprises a number of different approaches for social science research, including phenomenography, phenomenology, and ethnography (Mackenzie & Knipe, 2006). Interpretivist approaches are guided by the fundamental interpretivist goal of understanding human experiences, beliefs, conceptions, and perceptions. However, each of the approaches have their own intricacies and divergences (Lincoln & Guba, 2000). For example, phenomenographers focus on describing variation in how a group of people conceive a specific phenomenon (Marton & Booth, 1997), phenomenologists focus on exploring individual's subjective experiences (Hammersley & Atkinson, 2007) and ethnographers focus on eliciting the collective culture, behaviour, attitudes, and beliefs of a community (Dewan, 2018).

Interpretivism developed in the mid-nineteenth century in response to arguments concerning the need for unique and suitable methods of investigation for social science research (Martineau, 1969). Prior to this, social science research relied on positivist, quantitative approaches that were traditionally used in natural sciences (Miller, 2004). One fundamental difference between interpretivist and positivist research is that of relationships. In positivist research, a strict separation is maintained between the researcher and the research participants (Klein & Myers, 1999). Conversely, interpretive research is characterised by a participatory process where researcher-participant interaction plays a vital role (Walsham, 1993). Accordingly, interpretivist research methods involve personal interactions between researchers and participants such as semi-structured interviews. This approach acknowledges the importance of participatory relationships in gaining insight into participants' 'hearts and minds' to understand their different motivations for acting, thinking, and behaving in particular ways (Pickard, 2017). By interpreting meaning within

context through participation, interpretive research provides a richer understanding of the subjective nature of human experience compared to traditional positivistic methods (Pickard, 2017).

This research investigation aligns with an interpretivist approach, as the primary goal is to gain a rich understanding of the subjective ways children conceive hope for our future world with a view to making proposals to build hope within sustainability education. Within my investigation I aim to reveal whether children believe sustainability problems can be mitigated, the types of sustainability problems they feel more or less hopeful about, and the pathways they conceive to mitigate sustainability problems. Additionally, I aim to investigate children's perceived agency in realising positive sustainability outcomes and whether they trust others to contribute towards realising positive sustainability outcomes. Adopting an interpretivist approach will provide rich insight into such phenomena by emphasising participation with my research participants. This will provide me with the scope of detail and understanding necessary to propose meaningful suggestions for integrating building of hope within sustainability education.

4.2 What is Phenomenography?

Phenomenography is a qualitative research approach rooted in interpretivism (Marton & Booth, 1997). It aims to explore and describe the qualitatively different ways people conceive phenomena from the perspective of research participants (Marton & Pang, 2008). The primary goal of phenomenographic research is to identify, categorise, and analyse the relationships between these varying conceptions. While broadly applicable, phenomenography is predominantly used in educational research to uncover learners' diverse conceptions of key concepts and inform teaching strategies based on these findings.

4.3 Phenomenography: Background

Phenomenography emerged from an empirical basis and was primarily developed by a group of education researchers led by Ference Marton in Sweden in the late 1970s. Their primary objective was "to understand academic learning better" (Marton, 2000, p. 103) by investigating variations in students' learning outcomes and what makes some students more effective learners. Rather than focusing on the quantity of content learned, the researchers studied the quality of students' learning experiences (Marton & Booth, 1997). In initial studies, students read academic texts and were quizzed on their understanding. The researchers discovered a limited number of qualitatively different meanings students derived from texts, reflecting a range of learning approaches from surface-level (e.g., memorisation) to deep-level (e.g., application of knowledge to real-world contexts) (Entwistle, 1997; Micari et al., 2007). They concluded that variation in how students experienced reading and understanding texts explained variations in learning outcomes, with more powerful ways of experiencing reading, leading to better educational outcomes (Marton & Booth, 1997). The researchers described implications for curriculum design and implementation such as recommendations for teachers to implement the experiences that emerged as leading to better outcomes.

Since its beginnings, phenomenography's historical foundation in the discipline of education has endured, and its on-going development as a research approach has primarily occurred in that space (Limberg, 2000). Phenomenography has primarily been utilised to study children's conceptions of Mathematics, Science, English, Chemistry, and Geography related phenomena (Åkerlind, 2008; Åkerlind et al., 2014; Rovio-Johansson, 1999; Rovio-Johansson & Lumsden, 2012). Knowledge gained through these studies has enabled the

design and implementation of effective, inclusive, and student-centred content for teaching various concepts (Åkerlind, 2008).

4.4 Why I Selected Phenomenography

Phenomenography was selected for this study to provide understanding about the different ways that children conceive hope for our future world and the influences on those ways, as well as variation and relationships between different ways of conceiving hope. The aim is to provide proposals for sustainability education to build hope to promote sustainability engagement. Several factors informed phenomenography's selection for this study. First, phenomenography is the only methodology to focus on variation in conceptions (Marton, 1981). Second, phenomenography provides descriptions of conceptions from the perspectives of research participants, a unique feature pertaining to phenomenography (Orgill, 2012). Third, phenomenographic research has demonstrated value in informing teaching and learning (Åkerlind, 2008; Åkerlind et al., 2014; Rovio-Johansson, 1999; Rovio-Johansson & Lumsden, 2012). Furthermore, there are calls to provide more emphasis on children's views and perspectives in sustainability education. I explicate such reasons in the subsequent sections.

Focus on Variation

Phenomenography's focus on exploring variation in conceptions of learning-related phenomena is critical to this research. The central tenet of phenomenography is that individuals collectively conceive phenomena in several qualitatively different but interrelated ways (Åkerlind, 2012; Marton & Booth, 1997). Providing understanding about the qualitatively different ways that children conceive hope for our future world will reveal a spectrum of ways that children can conceive hope. Given that different types of hope impact

sustainability engagement differently (see Chapter 2), revealing variation will provide scope for proposing targeted sustainability education to progress children towards more constructive hope types.

Describing Conceptions from the Research Participants Perspectives

Phenomenography reveals variation in the ways phenomena can be conceived through representing research participants' descriptions of their conceptions from their own perspectives (Åkerlind, 2012). This is referred to as a second-order approach to research (Marton, 1981). The second-order approach is a distinguishing feature and strength of phenomenography (Marton, 1981). A second-order approach to research contrasts with a first-order approach which seeks to "describe various aspects of the world" in a generic way based on researchers' observations of people's conceptions (Marton, 1981, p. 171). In comparing the two approaches, Marton (1981) characterises the second-order approach as being "from the inside" and the first-order approach as being "from the outside" (p. 177). Similarly, Åkerlind (2012) compares the two approaches in the following way:

From a second-order perspective, human experience [conception] and variation in experience [conception] is the core of the investigation; from a first-order perspective, human experience [conception] is but the medium for collecting data, and variation in human experience [conception] (within the same experimental conditions) is white noise, to be filtered by statistical tests of significance to better determine the reality underlying the noise (p. 6).

In the context of this study, using a second order approach will enable me to understand how children conceive hope for our future world from their own perspectives. Conversely, using a first-order approach would have provided a narrower understanding of

how children conceive hope for our future world, because the findings would have been based on my observations and perceptions of children's conceptions.

Demonstrated Value to Informing Teaching and Learning

Revealing variation in conceptions provides a powerful foundation from which to develop teaching and learning experiences. This is because focussing on variation belies an interest in and change in capabilities for conceiving learning-related phenomena (Marton, 1981). Marton and Booth (1997) explain that 'these capabilities can, as a rule be hierarchically ordered (p.111). This means that some capabilities can be seen as more advanced, more complex, or more powerful than other capabilities. Phenomenographers refer to the differences between ways of conceiving as the educationally critical differences; regarding the changes between them as being what needs to be taught (Marton & Booth, 1997).

Using phenomenography to map variation in the ways children conceive hope for our future world will reveal a progression of capabilities for conceiving hope. This is because some conceptions of hope correlate more positively with sustainability engagement and the realisation of positive sustainability outcomes than others (Kelsey & Armstrong, 2012; Lueck, 2007; McGeer, 2004; Ojala, 2012b). This approach will provide me with opportunities to suggest targeted teaching and learning activities to progress all children towards more powerful ways of conceiving hope; thereby catering to all children's hope capabilities. This is significant, because as mentioned, other methodologies, like phenomenology or ethnography, would have only provided the general way that the participant group conceived hope (phenomenology) or how a small sample of individuals conceived hope (ethnography). This would have inherently excluded some children from the teaching and

learning suggestions that emanated through this research; thereby intrinsically narrowing the scope for future learning of hope.

Emphasising Children's Views and Perspectives in Sustainability Education

The selection of phenomenography as the methodology for this study is further validated by its potential to address a critical gap in current sustainability education research and practice. Currently, most education research and practice explore what students know, believe, and need to be taught from the perspectives of researchers (Lo, 2017; Loughland et al., 2002). It has been assumed that children can come to understand curriculum content in the same way as teachers if the content is delivered well. However, this has often not been the case (Lo, 2012). As discussed in Chapter 2, despite the aims of sustainability education curriculum to guide children to develop “the knowledge, skills, values and world views necessary to act in ways that contribute to more sustainable patterns of living” (Australian Curriculum, Assessment and Reporting Authority [ACARA], (2021) many children lack hope for our future world and are resigned to increasing patterns of ecological and social degradation (Strife, 2012). Lack of hope can lead to ‘environmental action paralysis’ preventing children from engaging with sustainability challenges (Kelsey & Armstrong, 2012). Understanding how children conceive hope for our future world, and what influences those conceptions from their own perspectives, has potential to shape sustainability education in ways that foster greater engagement and more positive sustainability outcomes. This is because suggestions for building hope within sustainability education will be aligned with children's views, better addressing their needs and levels of hope.

Phenomenography's unique ability to reveal variations in conceptions and its second-order perspective align closely with calls for a reorientation of sustainability education

towards incorporating children's view and perspectives. This alignment is exemplified by Bernstein's (1970, p. 344) assertion that "If the culture of the teacher is to become part of the consciousness of the child, then the culture of the child must first be in the consciousness of the teacher." More recent scholars have echoed this sentiment, emphasising the importance of involving children in constructing sustainability education to foster innovative problem-solving skills (Blake et al., 2013) and understanding the experiences and conceptions of present-day learners, to develop effective curriculum theories (Payne, 1998).

Previous phenomenographic studies highlight the potential for phenomenographic investigation to provide rich insights into children's views and perspectives on sustainability related phenomena and contribute to enhancing sustainability education. The most closely related phenomenographic studies to this research include investigations into children's conceptions of environment (Loughland et al., 2002) and children's understandings of hazardous household items and waste (Malandrakis, 2008). Loughland et al.'s (2002) study found that many children conceive the environment as an object detached from themselves, rather than as a relational entity that they are connected to. Based on these insights, Loughland et al. recommend that sustainability education programs focus on shifting children's awareness from limited, objectified views of the environment towards more relational perspectives to promote sustainability engagement. Malandrakis' (2008) study found that many children have good understanding of the science of hazardous materials and the impacts of waste on the environment but lack perceived agency in contributing to waste reduction. Most children in their study viewed waste management as someone else's responsibility. Malandrakis' study calls for sustainability education that supports children to take an active role in ameliorating sustainability challenges.

Previous phenomenographic studies investigating children's understandings and conceptions of sustainability related phenomena contribute new understandings about children's subjective conceptions of personal responsibility for taking sustainability action. They highlight misconceptions and fragmented conceptions of sustainability related phenomena, providing direction for sustainability education (Loughland et al., 2002; Malandrakis, 2008). Such studies validate the potential for this research to contribute new understanding of how children conceive hope for our future world and propose ways to build hope in the context of sustainability education to promote sustainability engagement.

4.5 Ontological and Epistemological Underpinnings

All research approaches incorporate ontological and epistemological assumptions when developing knowledge about a phenomenon (Grix, 2002). Svensson (1997) describes phenomenography as an empirical research tradition with its own ontological and epistemological assumptions, inspired by various research traditions but not fully aligning with any single one. Svensson (1997) attains that assumptions made in phenomenography are connected to ideas about the nature of its focus of study, the nature of conceptions. Accordingly, the assumptions embraced by phenomenography regarding ontology and epistemology relate to the nature of conception.

Ontological assumptions relate to the nature of being, that is questions regarding the nature of reality and the nature of human beings in the world (Denzin & Lincoln, 2005). Phenomenography is underpinned by a non-dualist ontology, whereby the person and the world are viewed and studied in relation to each other (Bowden, 2005). From this perspective, reality is neither objective or subjective, that is, not constituted by the person or the world, but rather by the relation between people and the world (Bruce, 1997a).

Accordingly, the phenomenographic knowledge interest is on people's conceptions of phenomena in the world (Marton & Booth, 1997). Marton (2000) describes the non-dualist ontological stance in the following way:

There are not two worlds: a real, objective world, on the one hand, and a subjective world of mental representations, on the other. There is only one world, a really existing world, which is experienced and understood in different ways by human beings. It is simultaneously objective and subjective (p.105).

In this way, the non-dualistic stance assumes that there is an inseparable relationship between people and aspects of their world and that understanding aspects of the world is dependent upon understanding the multiple and finite ways in which it is conceived (Svensson, 1997).

Phenomenography's non-dualist ontological perspective orients research utilising this approach towards answering 'What are variations in people's conceptions of the same phenomenon?' (Bowden, 2005). This focus contrasts with the dominant phenomenological and ethnographic approaches which are the default approaches to conducting social science research (Lo, 2017). For instance, phenomenology takes the perspective that individuals create realities based on internal mental models that represent aspects of the world (reality is subjective); (Haylock & Thangata, 2007) and thus focuses on answering, 'What are the lived experiences of a particular phenomenon?' Meanwhile, ethnography views reality as shaped and formed by the world (reality is objective); (Marton & Booth, 1997) and thus is concerned with answering 'How do experiences of a particular phenomenon influence a group of people?'

Epistemological assumptions relate to the nature of knowledge, that is, the theory and knowledge of truth. In phenomenography, as noted by Svensson (1997), because the research object has the character of knowledge (in the sense that knowledge is constructed through conception), its ontological assumptions also become epistemological in a broad sense. Marton (1997) describes phenomenography's epistemological position as relativist. This view holds that knowledge is created internally through thinking and conception but is also dependent upon the world external to the individual. Thus, while it is the phenomenographic view that "knowledge is constituted through the internal relation between the 'knower' (person) and the 'known'" (Denzin & Lincoln, 2005, p. 183), because there is only one world, it is also the phenomenographic view that only a finite number of interpretations of it can exist (subjective); (Svensson, 1997). For example, there are a limited number of ways in which people could describe how they conceive the likelihood of it raining tomorrow (Marton & Booth, 1997).

Consequently, in phenomenography, knowledge is understood to be representative of the total of ways that individuals conceive the world (Marton & Neuman, 1989). The significance of the relativist perspective is that phenomenographic research assumes that the fundamental characteristics of a phenomenon can be revealed through abstracting and condensing multiple descriptions of conceptions of the same phenomenon into a set of categories that are representative of all conceptions (Svensson, 1997). Considering the likelihood of it raining tomorrow example, a category of probable may be representative of conceiving the likelihood of it raining as feasible, credible, and plausible.

4.6 The Knowledge Interest of Phenomenography: Conceptions

The knowledge interest of phenomenographic research is revealing variation in human conception, experience, and understanding through providing lived descriptions of this variation (Sjöström & Dahlgren, 2002). In the development of phenomenography as a research approach, many terms have been used synonymously in the literature to represent the phenomenographic knowledge interest. These include ways of experiencing, ways of seeing, conceptions, perceptions, understandings, and views (Åkerlind, 2005a; Marton & Booth, 1997; Bowden & Green, 2005; Bruce, 2000; Loughland et al., 2002; Prosser, 2000; Ramritu & Barnard, 2001). The term conception is used in this study because it is the term most suited to the phenomenon under investigation, that is children's conceptions of hope for our future world.

A conception is described as "a way of seeing, understanding, or assigning meaning to phenomena (Johansson et al., 1985). It is "the basic meaning structure of individuals' conceptions of a particular aspect of their reality" (Sandberg, 1994, p. 52). The character of a way of conceiving something denotes something that can be implicitly or silently understood, or something that has not yet been the subject of reflection (Marton, 1981, p. 186). Thus, "the structure and meaning of a phenomenon as experienced [conceived] can be found both in pre-reflective experience and conceptual thought" (Marton & Booth, 1997, pp. 116-117). The relevance to this study is that children conceive hope for our future world because they pre-reflect or imagine what future environments will look like and they engage in conceptual thought about them.

In phenomenography, conceptions are stated to be dynamic because they inherently reflect individual, historical, and situational phenomena within the context in which they are

embedded (Ekeblad & Bond, 1994). Our conception of a particular phenomenon is therefore reflective of our beliefs, values, education, culture, and historical context (McCosker et al., 2004). Phenomenographers assert that “the only world we can report about is the world as we experience [conceive] it”, and that aspects of the world can logically be reported about in several ways (Sjöström & Dahlgren, 2002, p. 340). The goal of phenomenographic research, therefore, is to reveal how different worlds are conceived along with their similarities and differences (Sjöström & Dahlgren, 2002). Finding out how these different worlds are conceived is important because there is a relation between how people conceive something and their actions regarding it (Marton & Booth, 1997). As Marton and Booth (1997) note, “you cannot act other than in relation to the world as you experience [conceive] it” (Marton & Booth, 1997, p. 111). Accordingly, a capability for conceiving a particular phenomenon reflects a capability for acting for it; with these two aspects being logically intertwined. The relevance to this study is that a strong capacity to conceive hope, that is, a strong capacity to generate pathways and enact agency to mitigate and solve issues of sustainability, combined with trust in others to also act to realise positive environmental outcomes, is linked to a strong capacity to act to realise positive environments.

Phenomenography takes a relational approach to research which means that the focus of phenomenographic research is not solely on the subject/s (person/group) or the given phenomenon, but rather on the subject’s conception of the phenomenon (Bowden, 2000a; Bruce, 1997b; Limberg, 2000). Accordingly, a way of conceiving something is seen as representative of the relation between a subject (person) and an object (a given phenomenon or aspect of the world), or as constituted by the “internal relationship between the experiencer and the experienced” (Marton & Booth, 1997, p. 113). It is these

inseparable subject-object relations that phenomenography represents as conceptions (Marton, 1981), which when combined with multiple conceptions, represent the essence of a given phenomenon (Bowden, 2005, p. 13). The relational approach to phenomenographic research is often depicted in the format below Figure 4.1. Adapted from Marton and Booth (1997). As indicated, the focus of phenomenographic research is on the relation between the subject and object, not solely on the subject or the object.

Figure 4.1.

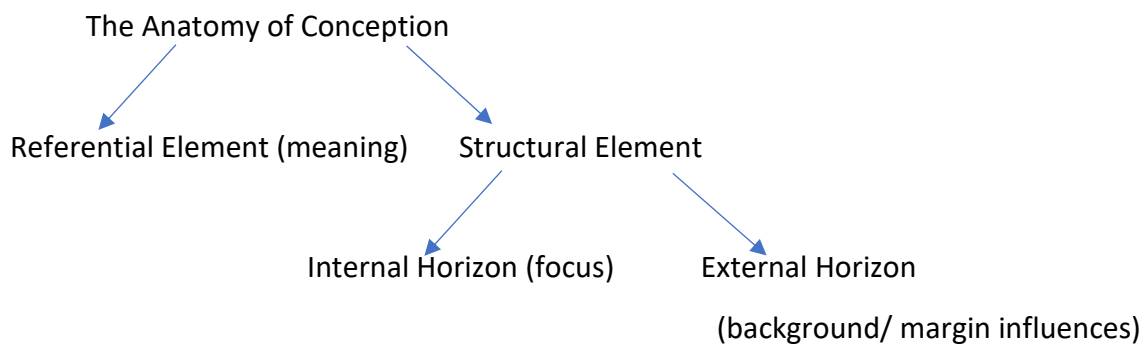
Illustrating the Focus of Phenomenographic Research



Marton and Booth (1997) explain that a way of conceiving something involves both structure and meaning. They suggest that to conceive an object, one must first discern it from its surroundings, which requires noticing its structure - the 'whole' and its parts. Additionally, the object must be assigned a meaning to be recognised as a particular thing. Thus, they describe the 'anatomy' of conception as comprising two components: a referential element (meaning) and a structural element. This anatomy of conception is visually represented in Figure 4.2.

Figure 4.2

Conceiving a Phenomenon



(Marton and Booth, 1997, p.88).

In the anatomy of conception represented in Figure 4.2, the referential element of conception refers to the overall or global meaning that is assigned to the conception of a given phenomenon (Marton & Pong, 2005). The structural element refers to the “combination of features focused on and discerned by the subject” (Marton & Pong, 2005, p. 336). As can be seen in figure 4.2, the structural element is further broken down into two aspects: the internal and external horizons, also referred to as the focus, background and margin aspects. The internal horizon (focus) refers to structural elements of the phenomenon and the relationships between those elements, and the external horizon (background and margins) refers to phenomena which are related to the phenomena and the individual, cultural and historical context in which it is embedded. The background aspects are more prominent than the marginal aspects (Lo, 2017).

Marton and Booth (1997) used the metaphor of seeing a wild animal in its natural habitat to explain the nature of conceiving. Take for example, encountering a shark whilst scuba diving. The referential element would be assuming the meaning that we have seen a

shark. The structural element would include the internal horizon, that is focussing on the parts of the shark and the relationships between those parts (how the shark moves, the dorsal fin, behaviours, etc) and the external horizon (background/margin), that is awareness of phenomena that surrounds the shark (such as the ocean, coral shelves, other fish/plants). Combined, these three components – referential, internal, and external horizons – work together to shape how we come to conceive the shark.

4.7 Phenomenographic Approach to Selecting a Participant Sample

Phenomenographic research most often uses a purposive sampling approach to selecting research participants. Purposive sampling involves intentionally selecting research participants based on them meeting pre-determined criteria (Bowden, 2000a). Patton (1990) explains that this method allows for the selection of “information-rich cases,” which can lead to an “in-depth understanding” of the object of the research (p.46). Bowden (2000b) notes the importance of ensuring a heterogenous sample in phenomenographic studies to capture variation in research participants’ conceptions. Marton and Booth (1997) suggest that one of the best ways to ensure a heterogenous sample is to review relevant literature in the field so that groups of people who are likely to exhibit variation can be selected.

The sample size of phenomenographic studies typically involves 10-30 research participants (Bowden, 2005b; Sandberg, 1994). There are two primary reasons for this range. First, 10-30 is considered a sufficient sample to ensure that the various ways in which a given phenomenon can be conceived by the selected sample group are represented in the findings. Marton and Booth (1997) argue that while those findings cannot be statistically generalised to larger populations on account of the small sample size, they are theoretically

transferable to other contexts. This means that phenomenographic researchers can draw upon their findings and use them to develop theories and models that potentially apply more broadly. The second reason for the small sample size is to ensure that the size of the collected data is manageable for data analysis (Bowden, 2005b; Bruce, 1997b). Given that phenomenography is a qualitative approach that aims to identify the different ways in which individuals conceive phenomena by analysing their responses to open-ended questions or interviews, collecting data from a larger sample would make it difficult for researchers to analyse and interpret such data effectively.

4.8 Phenomenographic Approach to Data Collection

Phenomenographic data collection is focussed on collecting rich, detailed descriptions of participants' conceptions of the phenomenon under study. Phenomenographic interviews are the most utilised approach for data collection in phenomenographic research (Bruce, 1997b; Marton, 1994). Svensson (1994) suggests that the preference for using interviews in phenomenographic research stems from the common phenomenographic view that verbal language is the form through which people's different ways of conceiving phenomena are most accessible (1997). Similarly, supporting the frequent use of interviews as a method for collecting data in phenomenographic research, Säljö (1988) notes that "language, culture, and human experience [conceptions] are inextricably intertwined" (p.177). Thus, phenomenographic researchers take the view that verbal interviews provide the best insight into research participants' conceptions of phenomena and the cultural influences on such conceptions.

Phenomenographic interviewing is designed to elicit information about participants' perceptions, beliefs, attitudes, thoughts, feelings, and experiences related to the

phenomenon under study. Phenomenographers conduct interviews in a conversational manner, while having a specific purpose embedded in the communication (Luo & Wildemuth, 2009). Referring to the work of Kvale (1983), Bruce suggests that several characteristics define the phenomenographic interview. These qualities are that they:

- focus on the relation between the interviewee and the phenomenon
- use open-ended questions
- are semi-structured while being focused on certain themes
- are conversational and use unstructured probing questions

The goal of phenomenographic research is to understand not only what participants think about a given phenomenon but also how they relate to it. Therefore, phenomenographic interview questions are open-ended to prompt personal and detailed responses from participants (Collier-Reed & Ingerman, 2013). Prosser (2000) notes that the open structure of such questions enables participants to “reveal through discussion, their ways of conceiving a phenomenon, that is, to disclose their relationship to the phenomenon under consideration” (p.9). Phenomenographic interviews are also semi-structured. The semi-structured nature provides the phenomenographic researcher with a structure to remain focused on the topic at hand, and the participants with sufficient flexibility to describe the nuances and details of their conceptions (Bruce, 1997a). Last, phenomenographic interviews are conducted in a conversational-like manner. This promotes openness and authenticity from participants and allows for exploratory dialogue between the researcher and participant.

Drawings are also a suitable form of data for phenomenographic studies. Marton (1994; 2000) explains that drawings provide a rich source of information through which phenomenographic researchers can understand how individuals conceive different aspects of their world. Historically, drawings have often been collected in phenomenographic studies conducted with children (Ahi & Atasoy, 2019; Kalvaitis & Monhardt, 2012; Loughland et al., 2002). This is because children's verbal language is still developing, and they can sometimes communicate more effectively through drawing than verbal communication.

4.9 Phenomenographic Approach to Data Analysis

The phenomenographic approach to data analysis emphasises identifying variations across individual conceptions of a given phenomenon. There are various data analysis processes that reflect the general phenomenographic data analysis protocols documented in the phenomenographic literature (Bruce, 1997a; Säljö, 1988). Overall, these approaches involve several key steps. First, reducing the collected data to identify key themes relevant to the research questions. Second, categorising key themes into categories. Third, describing categories using quotes from the data. Last, comparing and representing variation across the categories.

4.10 The Expected Outcomes of Phenomenographic Research

Expected outcomes of phenomenographic research include categories of description and an outcome space. Categories of description are condensed ways of conceiving the phenomenon under study, while the outcome space is the means for representing the total ways in which the given phenomenon was conceived and the relationships between those ways (Marton & Booth, 1997). The concepts of categories of description and the outcome space are explicated below.

4.10.1 Categories of Description

Phenomenographers constitute the total ways of conceiving a given phenomenon into several categories of description which are representative of all the collected descriptions of conceptions (Marton & Booth, 1997). In this way, the difference between a way of conceiving a phenomenon and a category of description is that there is a shift in focus from individual conception to a collective conception which is comprised of multiple individual views (Sandberg, 1994). Marton and Booth (1997) distinguish between ways of conceiving and categories of description. They explain that 'ways of experiencing' refer to individual conceptions, while 'categories of description' represent qualitatively different ways a phenomenon may appear to groups of people. Svensson (1994) adds that categories of description are abstractions and data reductions of the various ways of conceiving, rather than individual participants' conceptions. This distinction highlights the analytical process in phenomenographic research, where individual experiences are synthesized into broader descriptive categories.

Categories of description are defined based on the critical referential and structural aspects contained within the individually expressed ways of conceiving the given phenomenon (Marton & Booth, 1997). Categories reflect the subject-object relation that comprises a way of conceiving. They are based on the conceptions of the participants in the study, are focused on the meaning of the phenomenon under investigation, and are descriptive in nature (Marton, 1988, p. 181). In forming the categories, only the aspects which are critical to understanding the phenomenon are represented, while the non-critical aspects are discarded. For example, if a child were asked to describe how they conceive a given math equation and they explained it as a multiple-step addition problem and then

asked how long until recess, the description of the math problem as a multiple-step addition problem would be represented in a category, while asking how long until recess would be discarded. Each category of description has a distinguishable theme (the emphasis of the conception of the given phenomenon) or there is a change in level of complexity of the same theme across categories. Aspects other than the theme which comprise a category and are directly related to the theme are often included across multiple categories (Marton & Booth, 1997). Each category gives meaning to the other categories in the set (Svensson, 1994), and together, the total categories represent the 'essence' of the given phenomenon, or the total ways the given phenomenon was conceived (Åkerlind, 2008). In this study, the categories of description represent the different ways children conceive hope for our future world, and together, the set of categories represent the total ways in which hope for our future world was conceived.

4.10.2 Outcome Space

Phenomenographers arrange the categories of description, or all the ways of conceiving the phenomenon of interest, into an 'outcome space' (Marton & Booth, 1997, p. 125). The outcome space in phenomenographic research represents a comprehensive picture of how a group of participants conceives a particular phenomenon at a specific time (Åkerlind, 2003). Marton (2000) describes it as a "logically structured complex of the different ways of experiencing an object" (p.105), essentially equating it with the phenomenon itself. Säljö (1988) likens it to a "map of a territory" (p. 44) that interprets how people conceive a particular aspect of reality. Typically, outcome spaces are structured to show increasing complexity, with simpler conceptions represented as subsets of more complex ones (Marton & Booth, 1997).

Phenomenographic outcome spaces provide the impetus for curriculum suggestions. This is because they demonstrate a progression of capabilities for conceiving a given learning-related phenomenon. The differences between each category represent educationally critical differences, or gaps in conceptions, with the category of description at the top or far right of the outcome space representing the most complete way of conceiving. The outcome space in this study will demonstrate a spectrum of ways in which children conceive hope for our future world. The implication is that this spectrum will demonstrate what children need to conceive hope for our future world in more powerful ways considering the impact on sustainability engagement.

4.11 Evaluating Phenomenographic Inquiry

An essential question of all research is whether the research processes and findings can be depended upon to be true. While quantitative research applies lenses of “reliability,” and “validity,” to determine this in an absolute manner (Collier-Reed & Ingerman, 2013), it is not appropriate to apply those same lenses to qualitative research. This is because qualitative research focuses on understanding the “processes and meanings” of human experience (Denzin & Lincoln, 2005, p. 4) and these processes and meanings are multiple. However, qualitative research can be assessed for trustworthiness in other ways (Lincoln & Guba, 2000). Specific to phenomenography, notions related to trustworthiness including credibility, dependability, and transferability have been found to be appropriate (Bruce, 1997b; Collier-Reed & Ingerman, 2013; Sandberg, 2005). I introduce these criteria below.

4.11.1 Credibility

Credibility focuses on the ability of the research findings to represent a “credible” interpretation of the data. Booth (1993), and Collier-Reed and Ingerman (2013) suggest the

following aspects of credibility as necessary to establish trustworthiness in phenomenographic research. These are:

- content-related credibility
- credibility of method
- communicative credibility

Content-related credibility refers to the researcher's understanding of topics related to the object under investigation. As Collier-Reed & Ingerman (2013) suggest, a research community could justifiably question the rigor of research findings if it was determined that the researcher conducting the study was unfamiliar with the subject matter. However, despite this, they suggest that those engaging with the research reflect "openness" to understanding that a range of perspectives on the given topic will be natural.

Credibility of method relates to participant sample composition, the context in which the interviews take place, the structure and content of the interviews, and the analysis of the data (Collier-Reed & Ingerman, 2013). Researchers can ensure credibility of method by clearly documenting how they selected a participant sample representative of the population under study and how they designed and analysed the data. Documentation of these elements can enable the scholarly community to evaluate the credibility of the study design.

Communicative credibility refers to a researcher's ability to "argue persuasively for the particular interpretation that they have proposed" (Åkerlind, 2005b, p. 330). Åkerlind, (2005b) argues that phenomenographic researchers should be able to provide evidence from their data collection, analysis, and reporting procedures to "argue persuasively for the

particular interpretations that they propose” (p. 330). Communicative credibility at the point of data collection is substantiated through dialogue between the researcher and participants (Apel, 1972). This dialogue serves to develop a ‘community of interpretation’, that is, a mutual understanding of the research project, processes, and responses to data collection activities. Communicative credibility can also be established through the data analysis phase where the researcher is required to engage with the empirical data to attain faithful interpretations of the research focus (Sandberg, 1994). Communicative credibility can also be ascertained through reporting procedures. This includes discussing research findings with other individuals who have knowledge and interest in the same area (Sandberg, 2005).

4.11.2 Dependability

Dependability refers to whether the findings of a study can be depended upon to be true. This includes a judgement about whether the same results would emerge if the same research was conducted by a different researcher (Yates, 2015). Collier-Reed & Ingerman (2013) suggest three ways in which phenomenographic researchers can demonstrate research dependability. First, through the structure of the interviews, second through the accuracy of interview transcriptions, and third, through verifiability of data analysis. In relation to the structure of the interviews, interviews must be designed and carried out in a manner that allows participants to describe their perceptions of the research object without being led by the researcher (Marton & Both, 1997). Regarding the accuracy of the interview transcriptions and verifiability of data analysis, researchers can include excerpts of interview transcripts for verification and provide thorough descriptions of the data analysis processes.

4.11.3 Transferability

Transferability in qualitative research refers to the degree in which the research findings can be applied or transferred beyond the context in which the research was conducted (Collier-Reed & Ingerman, 2013). While, like all qualitative research, the findings reported in this research are not transferable to all contexts (Lincoln & Guba, 1985), Marton and Booth (1997) assert that results arising from phenomenographic enquiry are generalisable to groups that share similar research contexts. Therefore, I consider that the findings of this research, or in other words, the range of conceptions identified, can be expected to correspond with mid-to-late primary school children who share similar characteristics to the research population investigated. Collier-Reed and Ingerman (2013) suggest that phenomenographic researchers provide sufficient detail about their research to determine the transferability to other 'less like' contexts. Åkerlind (2003) contends that phenomenographic findings can be generalised to contexts that share some similarities with the original research context, however, expresses that these are likely to provide a less inclusive representation of the range of conceptions possible.

4.12 A Final Note

In this chapter I presented phenomenography as the chosen approach to this study. This included an exploration of the phenomenographic approach, including approaches to data collection and data analysis. Further my rationale for utilising phenomenography in this study was explained. Phenomenography serves as a roadmap to my research design, which I explicate in the following chapter.

Chapter Five: Research Design

This chapter is split into two parts. In the first part I provide background to my research and describe my research context. I begin the chapter by providing background by outlining how data collection was amended due to government policies in response to the Covid-19 pandemic. I also describe three significant background factors that potentially influenced participant responses: the Covid-19 pandemic, the 2019-2020 Victorian bushfire season and population growth. I introduce the data collection contexts, metropolitan and regional Victoria, Australia. I provide a map of the contexts, and describe the ecological, economic, social, and cultural backgrounds.

In the second part, I explicate my research methods. This includes my process for selecting participants and a description of participant characteristics. Next, I explain my data collection design and describe how I implemented a pilot study to refine my data collection instruments prior to implementing my main study. Then I describe how I collected and analysed data in my main study. I conclude the chapter with a discussion of how my study meets ethical research standards and how my study's outcomes can be deemed to be trustworthy.

Part One: Research Background and Context

5.1 Data Collection Background

Original plans for data collection in this study were modified in response to the Covid-19 pandemic. In late 2019 and early 2020, before the Covid-19 pandemic, I planned to do a comparative study between Victoria and Scotland, which would have involved collecting data from one metropolitan and one regional primary school site in both countries during

2020. However, the emergence of Covid-19 in March 2020 forced me to change plans due to international border closures. After much consideration, I decided to only collect data from Victoria, Australia, my place of residence. This was going to involve collecting data from one independent school, one public school and one catholic school in metropolitan and regional Victoria. Unfortunately, in April 2020 the Victorian Department of Education closed access to schools for research purposes. At this stage I pivoted to conduct research in New South Wales, the neighbouring state. However, in July 2020, Victorian residents were restricted from travelling 5km beyond their place of residence. I was also advised by the Victorian Department of Education that the research ban was indefinite. I therefore made the decision to collect data from individual children in their local residential areas. In total, data collection was protracted over a seven-month period due to several lockdowns in metropolitan Melbourne which affected my ability to travel or meet with people outside my immediate household. I ultimately collected data in Victoria, across metropolitan and regional areas over a nine-month period between March and August 2021.

5.2 Background Factors Influencing Participant Responses

Across the multiple data collection sites throughout metropolitan and regional Victoria, there were three major contextual background factors which may have significantly affected my study's findings. First, the period during which I collected my data was marked by the Covid-19 pandemic. Second, when I began collecting data, Victoria had recently experienced one of the worst bushfire seasons on record, and last, Victoria's population increased more than any other Australian state for the decade prior to data collection (Australian Bureau of Statistics [ABS], 2023). Together, these three contextual factors affected socio-cultural, political, economic, and environmental circumstances that by default

may have influenced how the children in this study conceived hope for our future world. This is because children often predict the future will mirror their current experiences and their predictions for the future are influenced by the concerns of the day that are reported by the media (Hicks & Holden, 1995a; Strife, 2012). I discuss the three major contextual factors influencing the findings of this study below.

Victoria experienced multiple waves of Covid-19 infections during 2020-2021 which resulted in several lockdowns and restrictions. Some notable restrictions enforced during these lockdowns included a 5-kilometre travel limit from an individual's primary place of residence, no socialising outside of immediate households, a 9pm curfew on leaving one's place of residence, school, and business closures (except for essential businesses such as chemists), only one hour of outside exercise per day was permitted, and masks were mandated to be worn inside and outside. Restrictions also applied when Victoria was not in a complete lockdown, such as mask mandates and restrictions on the number of people who were allowed to gather.

The lockdowns and restrictions had significant impacts on children's lives, including changes to children's social norms, mental health, economic circumstances, and education. Changes in children's social norms included physical distancing measures, wearing masks, and avoiding groups of people, leading to reduced opportunities for play and leisure. Children were unable to participate in group sports or engage in activities like eating out or shopping. These changes led some children to experience increased anxiety, depression, and stress as they struggled with isolation from their friends and extended families. For instance, Monash Health, Victoria's largest health service, encompassing fourteen hospitals across Victoria, saw a 40% increase in referrals for children's psychological issues during the Covid-

19 lockdowns (Gearin, 2021). Additionally, business closures due to government policies caused some parents/guardians loss of income, resulting in financial stress within households. This is evident in how 45% of Victorian adults aged 18-45 reported financial stress during the Covid-19 lockdowns (Melbourne Institute: Applied Economic and Social Research, 2023). Children's education was also significantly impacted by the shift towards remote learning, which posed extreme difficulties for students who lacked access to technologies, which would enable their participation. A study conducted by the University of Melbourne's Graduate Research School (2021) surveyed Victorian primary teachers and found that 37.5% of students always had access to a computer or laptop for learning, and only 10% of students always had reliable access to the internet (Ziebell et al., 2020)

The 2019-2020 bushfire season in Victoria was also significant. The fires were some of the worst recorded, beginning in November 2019 and continuing for several months. The fires burned in northern and eastern regional Victoria with the smoke affecting much of the state, including metropolitan Melbourne. During this period, Melbourne was recorded as having the most hazardous air quality levels in the world on account of the smoke (the Guardian, 2019). This posed significant health risks to children across the state with respiratory diseases (EPA, 2020). The bushfires in regional Victoria resulted in widespread devastation for local people, communities, businesses, and infrastructure (Victorian Government, 2020). The impacts on the environment were significant, resulting in devastating effects for Victoria's biodiversity. The fires caused extensive loss of wildlife and damage to habitats and national parks (Victorian Government, 2020). Over 1.5 million hectares of land were burnt, including the sites of more than 1,000 registered Aboriginal heritage places (Inspector General for Emergency Management, 2020; Victorian Government, 2020).

Victoria has experienced rapid population growth over the past decade. A population increase of 1,169,790 people over those ten years makes Victoria the most densely populated state in Australia (Australian Bureau of Statistics [ABS], 2023). This growth was driven by local births and international/national migration (ABS, 2023). While population growth affected positive implications for Victoria, such as a more highly skilled workforce and increased cultural diversity, it also raised challenges like housing unaffordability, decreased natural landscapes and increased traffic congestion. For instance, houses prices in metropolitan and regional Victoria rose significantly in the ten years prior to data collection, (Core Logic, 2023), while many urban areas were rezoned from farmland to residential/commercial land (Hynnien, 2021). Traffic congestion has risen on account of population growth and insufficient infrastructure (Australian Automobile Association, 2018).

Together, the background contextual influences of the Covid-19 pandemic, 2019-2020 bushfire season and rapid population growth may have influenced how the children in this study conceived hope for our future world. This is because children's exposure to unprecedented circumstances can shape their outlooks on what is possible and achievable within the society and environment in which they are embedded (Clayton et al., 2017). In a study focused on Hurricane Katrina survivors, Conservation Psychologists Clayton and Myers (2009) found that children who experienced displacement or witnessed significant destruction expressed a lack of hope for their futures. This manifested as diminished psychological well-being and reduced environmental stewardship into adulthood.

5.3 Data Collection Context

Figure 5.1 illustrates the geographical distribution of participants across Victoria. The orange area represents metropolitan Melbourne, comprising 31 local council areas, while

Melbourne spans over 9990 km² and comprises 5 electoral regions and 31 electoral districts. The city is situated on the traditional lands of the Wurrundjeri, Boon Wurrung and Wathaurong first people, and is home to 4.9 million people (ABS, 2021), 70% of the total population of the state of Victoria (Victorian Government, 2023). Those people are from more than 200 countries, making Metropolitan Melbourne, Australia's most culturally diverse city (ABS, 2021). Metropolitan Melbourne has a rich history of immigration and multiculturalism. Some of the prominent cultural groups include Anglo Celts, Indigenous Australians, Europeans, Eastern and Southern Asians, Middle Easterners and Africans (Victorian Multicultural Commission, 2022). These cultural groups enrich life in metropolitan Melbourne through cuisine, music, language, traditions, history, and values, making Melbourne one of the most cosmopolitan cities in the world (Victorian Government, 2020).

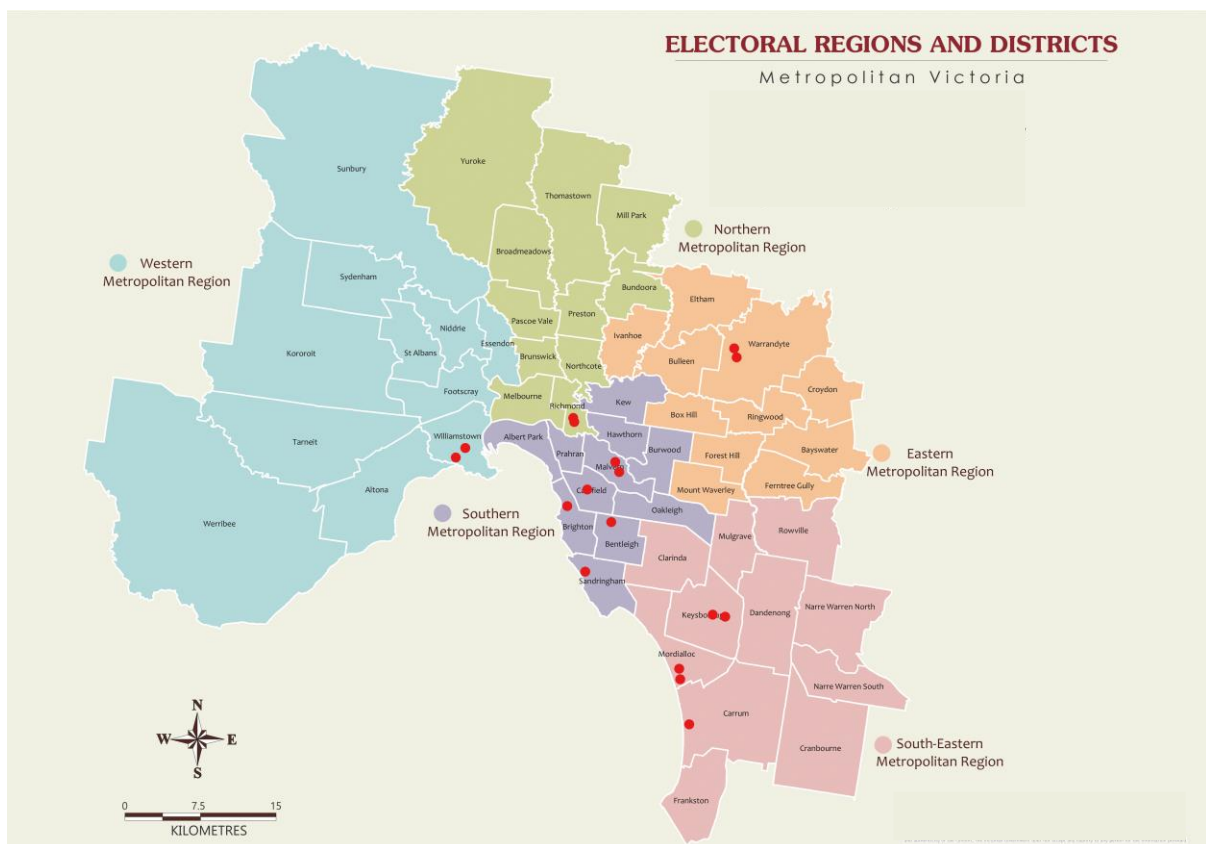
Ecologically, Metropolitan Melbourne is an urban landscape. Suburbanisation has affected loss of local ecosystems which have been replaced by roads, buildings, car parking, and monoculture farms amongst others (Elmqvist, et al., 2013). However, there are many parks, reserves and gardens scattered across metropolitan Melbourne that provide habitat for various flora and fauna (Victorian Government, 2021).

Economically, Melbourne is a major economic centre in Australia with a diverse economy that includes various industries and sectors. Eighty percent of people in metropolitan Melbourne are employed in the services sectors which includes finance, healthcare, education, tourism hospitality and the creative arts (Australian Government, 2023). Melbourne's median house price is the fifth most expensive in the world (Boss Hunting, 2021). There has been an increase of homelessness in Melbourne in the last decade (ABS, 2021) which can in part be attributed to high housing costs (Ford, 2016).

As mentioned, Metropolitan Melbourne comprises five electoral regions and 31 electoral districts. I collected data from all five electoral regions, including 11 of the 31 districts. This is represented in Figure 5.2

Figure 5.2

Map of Metropolitan Melbourne Electoral Regions and Districts



Note: adapted from Victorian Electoral Commission (2023).

The red dots on the map of metropolitan Melbourne (Figure 5.2) represent the five electoral regions where data were collected, including Western, Northern, Eastern, South-Eastern and Southern Metropolitan Melbourne. This included two participants from each of Williamstown in western Melbourne, Richmond in northern Melbourne, Warrandyte in eastern Melbourne, Malvern in southern Melbourne and Keysborough and Mordialloc in

south-eastern Melbourne, as well as one participant each from Brighton, Caulfield, Bentleigh and Sandringham in southern Melbourne and Carrum in south-eastern Melbourne.

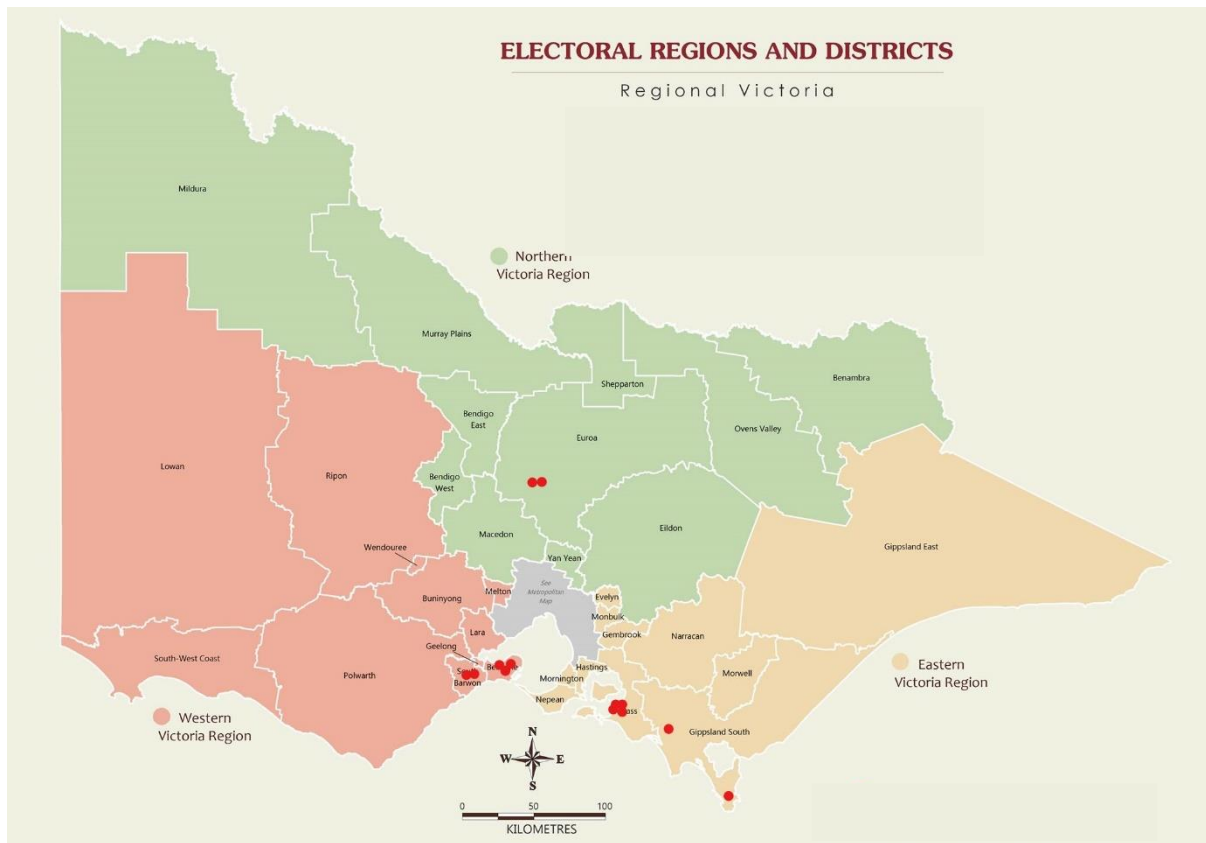
5.3.2 Regional Victoria

Also known as country Victoria, regional Victoria encompasses all the areas of the state of Victoria outside metropolitan Melbourne and is home to 1.6million people, 30% of the total population of the state. Regional Victoria spans 217,610 m² and comprises three electoral regions and 32 electoral districts. Major industries across the three regions include farming, forestry, and tourism (Victorian Government, 2023). The region includes diverse geographic landscapes such as surf beaches, forests, mountain ranges, lakes, wine regions and snow fields (Victorian Government, 2021) and is home to a diverse range of wildlife, such as wombats, sugar-gliders, pygmy possums, gang-gang cockatoos, fairy penguins, eastern water dragons, wedge-tailed eagles, and fur seals (Victorian Government, 2023).

The economic context of regional Victoria is variable. Regional Victoria supports agricultural industry such as dairy farming, manufacturing such as food processing, tourism such as wineries and education/health care sectors (Regional Development Victoria, 2022). The cultural context of regional Victoria is diverse and shaped by various influences, including Indigenous heritage, multiculturalism, agricultural traditions, arts and festivals, community values and a sporting culture (Department of Jobs, Skills, Industry and Regions, 2023; Victorian Government, 2023). However, it is important to note that this description provides a general overview, and specific nuances vary across different regions/sub-regions within regional Victoria due to historical, social, economic, familial factors.

Figure 5.3

Map of Regional Victoria Electoral Regions and Districts



Note: Adapted from Victorian Electoral Commission (2023).

The red dots on Figure 5.3 represent the contexts where data were collected, including the three electoral regions, that is western, northern, and eastern regional Victoria. This included two participants from each of South Barwon in the western region, Gippsland South in the eastern region, Bass in the eastern region and Euroa in the northern region, and three participants from Bellarine in the western region.

Part Two: Research Methods

5.4 Participant Selection

I employed purposive sampling to select my research participants. This non-random sampling technique involves selecting participants based on specific criteria relevant to the research questions (Etikan et al., 2016). Purposive sampling allowed for the deliberate inclusion of participants who could provide valuable insights into addressing the research focus. The criterion for recruiting participants in this study was primary school aged children between 8 to 12 years. The decision to focus on this age group was based on two factors. First, previous research highlights critical developmental stages in ecological identity formation during the primary school years (Neal & Palmer, 1990). Accordingly, I considered that hope interventions emerging from this study could be particularly effective at this stage of development. Second, I decided to only include participants over 8 years of age within the primary-aged distribution based on developmental and neurological research indicating that from 8 years old children are developmentally capable of perceiving distant future events (Ye et al., 2014). Accordingly, I excluded children under 8 years of age from this study because I considered they may be unable to contribute insights into how they conceive hope for the world 20yrs into the future.

To ensure heterogeneity in my research sample, I conducted an extensive review of literature on the factors that influence primary-aged children's conceptions of hope for our future world (O'Bryan, under review). I found that some of the main factors that influence children's conceptions were their age, geographical location, schooling experiences, and gender (Barraza, 1999; Connell et al., 2014; Gidley, 1998; Hicks, 1996; Hicks & Holden, 2007; & Strife, 2012). Using this knowledge as a guidepost, I targeted recruiting participants who

were representative of those influences. Accordingly, I recruited a diverse sample which included participants of different ages within the 8-12 years age distribution, participants from various geographical locations, and participants who attended independent, public, and catholic schools, along with an equal number of females and males. I deemed it critical to include participants representative of all those potential influences in my sample to ensure that my research findings provided comprehensive insight into the different ways that children conceive hope for our future world.

5.5 Participant Details

I included a total of 28 participants in this study. I am confident that this number is appropriate to providing insight into the research questions, because the data became saturated (Saunders, et al., 2018) after I analysed 24 of the research transcripts. This means that no new categories were emerging within the data, and that therefore, collecting more data would likely have yielded no further insights. In Tables 5.1, 5.2 and 5.3 I provide participant details including their ages, school type and gender. I do not include information relating to participants' geographic locations as this is presented in Section 5.3.

Table 5.1

Participant Ages

<i>Participant Ages</i>	<i>Number Included in Study</i>
8 years	6
9 years	7
10 years	6
11 years	4
12 years	5

Table 5.1 reflects that the sample consisted of 28 participants with a range of ages from eight to twelve years old. Specifically, six participants aged eight years, seven participants aged nine years, six participants aged ten years, four participants aged eleven years, and five participants aged twelve years.

Table 5.2

Participant Schooling Type

<i>Participant Schooling Type</i>	<i>Number Included in Study</i>
Independent School	5
Public School	16
Catholic School	7

Participants attended eighteen different schools in total, including five independent schools, sixteen public schools and seven catholic schools. In Victoria, 11.2% of primary school children attend independent schools, 68.7% attend public schools and 20% attend catholic schools (Carey, 2021). Therefore, I consider the number of participants that I recruited from each school type is representative of the general enrolment trend for primary school children across Victoria.

Table 5.3

Participant Gender

<i>Participant Gender</i>	<i>Number Included in Study</i>
Female	15
Male	13

Lastly, gender distribution among the research sample included fifteen females and thirteen males.

5.6 Participant Recruitment

I employed snowball strategy to recruit my participant sample. The snowball strategy is a technique used to identify and recruit participants through referrals from contacts and other participants (Ghaljaie et al., 2017). To employ this strategy, I posted a research invitation sheet on a local community sporting noticeboard and on Nextdoor App, a community networking online digital application (Nextdoor, 2023). I also emailed a research invitation to personal teaching contacts and asked them to distribute it within their networks. The main difficulty that I encountered when recruiting participants was the large number of children aged between 8-10 years expressing interest in participating as opposed to those aged 11-12 years. In response to the underrepresentation of children aged 11 and 12, I advertised for children aged 11 and 12 years exclusively by posting an updated research invitation sheet on Nextdoor App. This resulted in me being able to recruit two more children, one aged 11 and one aged 12. However, 11 and 12-year-old children remained underrepresented in the data. To expand the participant pool, I reached out to parents of 11 and 12-year-olds from whom I had initially collected data on the Nextdoor app. I contacted them by replying to their previous messages, requesting that they distribute the research invitation among their child's friends' families, encouraging other children of the same age to participate. Through this process, I recruited an additional four children: two aged 11 years and two aged 12 years, ensuring a more balanced age distribution across the sample.

5.7 Data Collection Rationale and Design

In this study I utilised two types of data collection instruments: drawings and a phenomenographic interview. My rationale for utilising two data collection instruments was to provide rich insight into how children conceive hope for our future world. It is well-known that drawing facilitates children's verbal communication (Cox, 1992; Kellogg, 1969; Kolbe, 2005; Malchiodi, 1998; McNiff, 1981). Therefore, I considered that implementing a drawing activity prior to an interview would provide me with rich insight into children's ways of thinking and feeling about futures. I also considered that including drawings as a prelude to an interview would promote inclusivity in how it would enable children to communicate their conceptions in multiple ways, allowing for variation in children's confidence verbally engaging with myself as a stranger, and variation in verbal literacy and drawing capabilities (Wragg, 1998). I also have previous research experience in using arts-based data collection methods and conducting qualitative interviews, therefore I felt confident in using this approach. In line with phenomenographic methodology, I designed the data collection instruments to be (a) open-ended to enable variability amongst participant responses and (b) effective in eliciting rich descriptions of children's conceptions of hope for our future world (Marton & Booth, 1997). Below, I provide rationale for each of the two activities and describe their design.

5.7.1 Drawing Activity Rationale

Drawings have previously been used in phenomenographic studies to elicit children's conceptions of sustainability related phenomena (Ahi & Atasoy, 2019; Kalvaitis & Monhardt, 2012; Loughland et al., 2002). This is because drawings provide a rich source of information that can help phenomenographic researchers understand how children conceive

different aspects of their world (Marton & Booth, 1997). Enabling children to communicate their conceptions of sustainability related phenomena through drawings allows them time to focus on the research topic (Di Leo, 1983). This method also helps shy or less verbal children feel more comfortable and engaged with the research situation and enables children with developing literacy skills to adequately communicate their environmental conceptions (Freeman & Mathison, 2008). Di Leo (1983) explains that through drawing, children's conceptions about abstract phenomena are more easily brought to a level of consciousness, given form, and explored. Given that the concept of hope for our future world is abstract, I considered that enabling children to draw their conceptions would provide a way for me to maximise the information I collected from each participant.

5.7.2 Drawing Activity Design

In designing the drawing activity, first I thought about the instruments I would need to enable participation. I planned to provide children with ten coloured pencils and A4 plain paper to complete the drawing. The specific colours were red, blue, yellow, green, orange, purple, brown, black, grey, and pink. I selected these colours because they are inclusive of all the primary, secondary, and tertiary colours and I believed that they would be adequate in providing children with the means necessary to communicate aspects of their future environments that they deemed significant.

Second, I designed an introduction to the drawing activity to read to each child before I asked them to draw a picture of the future world. The introduction to the drawing activity was:

I'm going to get you to draw a picture of how you think the world will be in the future, in about 20years or when you're an adult. Like your mums, dads, or my age. Think

about what the world is like now, things like nature and people and our way of life, then think about what you think the world will be like in the future – will things change or stay the same, will they be better or worse, or perhaps some things better and some things worse? There is no right or wrong answer because the future hasn't happened yet. I'm just interested to know what you think. I'm not judging your drawing either, the drawing is just an activity to get your brain thinking about what our future world will probably be like. After that, we'll talk about what you've drawn, and I'll ask you some questions about what you think our future world will be like and why. There are ten coloured pencils, you can use some or all of them. You can have as much or little time as you need, just let me know when you're finished.

The introduction was designed to inform children about the purpose of the task and provide them with direction about how to complete it. Further, the introduction to the drawing activity has three objectives, aligned with the aims of data collection in phenomenographic studies (Lupton 2008; Yates, 2015):

- orient children to the phenomenon of interest
- procure variation across the collected drawings
- encourage participation

Orienting Children to the Phenomenon of Interest

To orient the children to the phenomenon of hope for our future world, I needed to “develop a shared understanding” of the context of the research between myself and the participants (Adawi et al., 2001). This involved ensuring that the key concepts related to the research (future, world, hope) were mutually understood (Lupton, 2008). Future is an abstract and challenging concept for children to comprehend (Marcus, 2012). To develop a

shared understanding, I drew from Marcus (2012), linking the term to specific events and temporal dimensions. For instance, I asked children to draw a picture of how they think the future will look when they are an adult, in about twenty years' time. Further, I explained that in 20 years they would be around the same age as their mum, dad, or myself.

The second key concept, world, is a complex term that encompasses a range of environmental and social phenomena (Cambridge Essential English Dictionary, 2004). To develop a shared understanding, I stated the following in the introduction to the drawing activity: "When drawing a picture of our future world think about things like nature and people and what life is like." This statement aimed to link the concept of world with environmental and social elements while avoiding leading children to focus on specific environmental or socially related phenomena such as biodiversity or war.

The third key concept, hope, was not used explicitly in the introduction to the drawing activity. This is because the term can be interpreted in a variety of different ways (Snyder, 1994), and I was aiming to elicit children's ways of conceiving hope. However, I oriented children to the phenomenon of hope through the wording of the introduction. For example, I asked children to think about how the world is now and how it may be in the future: "Do you think will things change or stay the same, be better or worse, or perhaps some things better and some things worse?" This phrase was designed to reveal whether children have positive feelings about the future, which, as explored in Chapter 2, is an important dimension of hope (Snyder, 2002).

Procuring Variation

I crafted the introduction to the drawing activity to elicit variation in the collected data by stating: "Draw a picture of how you think the world will be when you're an adult...There's

no right or wrong answer because the future hasn't happened yet. I'm just interested to know what you think." This statement directed children to focus on and draw what they conceive to be significant features of our future world, thereby eliciting a range of responses. First, asking children to draw how they think the world will look when they are an adult was an open-ended activity that allowed for limitless possibilities. Second, providing children with opportunities to express their thoughts and ideas in a non-judgmental environment with no right or wrong answer can enable them to express themselves more freely (Duffy, 2006).

Encouraging Participation

To encourage participation in the drawing activity, I drew on my previous post-graduate experience with arts-based data collection methods and my experience as a teacher in a range of primary school settings. Through my previous academic and professional experience, I developed an understanding that a child's age influences their willingness to engage in drawing activities (Kellogg & O'Dell, 1967). DiLeo (1971) explains that children aged between 3 and 8 years often draw freely with little regard for optical reality (i.e., they draw porcupines falling from the sky, or people with square bodies). In contrast, children aged between 9-12 years often draw to please adults and portray objects that are closely representative of reality. The implications are that while younger children's drawings are uncomplicated by anxiety about outcome or audience (Engel, 1995), older children find it uncomfortable to engage in drawing activities if they perceive themselves as being unable to draw content closely reflective of reality. Accordingly, in devising the introduction to the drawing activity, I made it clear to participants that I was not judging their drawings, that it was just a means for me to better understand their conceptions.

5.7.3 Phenomenographic Interview Rationale

I planned to implement the phenomenographic interview following the drawing activity to clarify the intended messages of children's drawings, and probe for further information about their conceptions of hope for our future world. In this way, the purpose of the phenomenographic interview was to gain a deeper understanding of how children conceive hope for our future world and the influences on their conceptions. The aim of the interview was fundamentally entwined to the aim of the phenomenographic approach: "mapping the qualitatively different ways in which people experience and understand various aspects of the world around them" (Marton, 1988, pp. 178-179). My rationale for conducting the interview is encapsulated by Spradley, as cited in Kvale, (1996), "I want to understand the world from your point of view. I want to know what you know in the way that you know it" (p.125).

5.7.4 Phenomenographic Interview Design

Following phenomenographic methodology, I carefully designed my interview questions to be open-ended and semi-structured. I did this to elicit rich insight into children's individual conceptions of hope for our future world and furthermore create a natural and conversational environment where children could take the lead (Lupton, 2008; Yates, 2015). I planned to commence all interviews with the same opening question: "Can you explain what you have drawn please? From that point, I expected the paths of each interview to diverge naturally, based on participants' responses. For instance, if children depicted content related to ecological challenges or ecological restoration, the following interview questions would focus on those specific aspects.

In discussing the design of phenomenographic interview questions, Trigwell (2000) suggests that researchers devise a set of open-ended topic focused questions, and a bank of unstructured probing questions. The purpose of devising a set of open-ended topic questions is to draw participants back on track if needed, while the purpose of having a bank of unstructured probing questions is to prompt children to continue to describe their conceptions and allow them time and space to clarify their thoughts in a comfortable manner.

My initial set of open-ended focus topic questions were linked to my understanding of the types of hope that are conducive to sustainability engagement and positive sustainability outcomes, as described in Chapter 2. Accordingly, they were devised to provide insight into the dimensions of children's hope including: (i) positive orientation to the future based on belief that sustainability goals can be met (ii) perceived pathways to achieve sustainability goals (iii) perceived agency to achieve sustainability goals (iiii) trust in others to support the attainment of sustainability goals.

Table 5.4

Initial Open-ended Focus Topic Interview Questions and Rationale

<i>Focus Topic Interview Questions</i>	<i>Rationale</i>
1. Can you explain what you have drawn please?	Prompt children to reflect on their conceptions of the future world as communicated through the content of their drawings.
2. How do you feel about the future world?	Prompt children to reflect on their expectations and feelings about our future world to reveal whether they have a positive orientation to the future.

3. How do you think the future world could be better?	Same rationale as Question 2.
4. How could you help make the future world better?	Prompt children to reflect on their capacities to perceive pathways and agency to achieve sustainability goals.
8. How do you think other people will treat the environment?	Prompt children to reflect on trust in others to contribute to achieving sustainability goals.

The bank of unstructured probing questions I developed were typical of phenomenographic interviews (Lupton, 2008; Yates, 2015).

1. Can you tell me more about that?
2. Can you explain further?
3. Is there anything else that you would like to say about that?
4. What do you mean by that?
5. Can you give me an example?

Further, I considered the same three objectives in the design of my phenomenographic interview questions as I did in my introduction to the drawing activity. First to orient children to the phenomenon of interest. Second to procure variation in responses, and third to encourage participation.

Orienting Children to the Phenomenon of Interest

To orient children to the phenomenon of hope for our future world through my phenomenographic interview questions I drew upon Snyder's seminal Children's Trait Hope Scale (Snyder et al., 1997). The Children's Trait Hope Scale is a six-item Likert-scale questionnaire designed to assess children's capacities to have positive expectations of the future based on pathways' thinking and agency (Snyder et al., 1997). Questions in the Children's Trait Hope Scale include: When I have a problem, I can think of many ways to

solve it? And, even when others quit, I know that I can find a way to solve problems? Like the Children's Trait Hope Scale, this study also sought to analyse children's hope. However, as this is a phenomenographic study, the closed-style Children's Trait Hope questions were not appropriate. The interview questions in this study needed to be crafted in a way that elicited variation in children's responses. Therefore, in devising the interview questions, the Children's Trait Hope Scale informed the content of my interview questions and the phenomenographic literature informed their wordings.

Procuring Variation

To elicit variation in children's responses to the interview questions, I reviewed the general phenomenographic literature and several phenomenographic studies that have explored children's conceptions of sustainability phenomena (Ahi & Atasoy, 2019; Ashworth & Lucas, 2000; Bowden, 2000a; Marton, 1994). This developed my understanding of the style of questions commonly used in phenomenographic enquiry and within my field of study. For instance, I came to understand that phenomenographic interview questions need to be phrased in a way that prompts participants to reflect on and subsequently disclose their personal relationships to the phenomenon of interest (Marton, 1988) and that phrasing questions to begin with can, why or how can prove helpful in achieving this aim (Ahi & Atasoy, 2019; Åkerlind, et.al., 2005). This assisted me in devising questions capable of illuminating variation in participants' conceptions of hope for our future world.

Encouraging Participation

The final factor I considered in devising the initial focus topic interview questions was ensuring that the participants were comfortable engaging in the interview. Tisdall et al., (2009) explain that adult researchers are in a position of power when interviewing young

children and children may feel anxious about the correctness of their responses.

Accordingly, I believed that having open-ended questions would reduce children's anxiety because they would provide for a range of appropriate responses. In addition, I reflected that using the word you in the questions, such as "Can you tell me how you feel?" would be helpful as it would assure children that there was no right or wrong answer to the question, rather than I was interested in finding out their personal views and thoughts.

5.8 Approach to Selecting a Data Collection Site and Obtaining Participant Consent

In selecting a data collection site, I considered both practical and ethical considerations. I was aware of the importance of finding a quiet location with minimal distraction with a table or bench for children to draw on, to maximise the quality of responses received (Hickey-Moody et al., 2021). Second, I was influenced by Åkerlind's (2005b) position that as the researcher I was ethically responsible for creating an environment that was as pleasant as possible for the interviewee. Considering that the participants were children with whom I did not have an established relationship, I was conscious of the need to provide a setting where they would feel comfortable. Recognising these factors, my approach was to invite participants to choose if they would like to be interviewed at a quiet park or cafe near their place of residence, or at their family home. Additionally, children were invited to have a parent or guardian with them during the drawing and interview activities to help them feel at ease.

I planned to begin data collection by reviewing the Participant Information and Consent Form (Appendix A) with each participant. The purpose of this was to ensure that they understood the intent of the research, how it would be conducted, their rights to withdraw from the study, and their rights to confidentiality of their responses. After

reviewing the documents, I planned to provide children with an opportunity to ask questions, before asking them to sign their consent form indicating their agreement to participate in the study. I conceived that this would ensure that all participants were wholly informed about what would be expected of them during data collection while also protecting their autonomy regarding participation.

5.9 Testing the Data Collection Design

The phenomenographic literature recommends that phenomenographers, especially novice phenomenographers, conduct a small pilot study prior to implementing their main study (Åkerlind et al., 2005; Francis, 1993). This practice is recognised to assist with the refinement of data collection instruments and questions to ensure that they best capture the phenomenon of interest (Åkerlind et. al., 2005). Below I present the pilot study data collation contexts and participant characteristics, then I provide details regarding the implementation of the pilot study, revisions made to data collection tools and my rationale for those changes.

5.9.1 Pilot Study Data Collection Contexts and Participant Characteristics

The pilot study for this research consisted of two phases which were conducted across metropolitan and regional contexts within Victoria. The pilot included six participants, one child from each age group within the set age distribution of 8-12 years to ensure that the data collection tools were appropriate across all ages. Furthermore, an even number of females and males and children from independent, public, and catholic schools were included to mirror the main study cohort.

Table 5.5*Pilot Study Data Collection Context and Participant Characteristics*

<i>Number of Participants</i>	<i>Data Collection Context</i>	<i>Age</i>	<i>Gender</i>	<i>School Type</i>
1	Regional	8yrs	Female	Catholic
1	Metropolitan	9yrs	Male	Public
1	Regional	10yrs	Male	Independent
2	Regional	11yrs	Female	Public
1	Metropolitan	12yrs	Male	Public

5.9.2 Pilot Study Phase One

Phase One of the pilot study involved obtaining participant consent and conducting an individual drawing activity followed by a phenomenographic interview with three participants aged 9, 11 and 12 years. I implemented both activities as described in sections 5.7.2 and 5.7.4. During the data collection process, I diligently documented reflections on the effectiveness of different aspects of my design in eliciting diverse and detailed descriptions of children's conceptions of hope for our future world. Additionally, I carefully transcribed and reviewed each interview transcript, once again considering which elements of the design were effective and identifying areas that required further refinement.

Significant to the drawing activity, I found that the drawing activity was effective in facilitating children's verbal communication. For instance, one of the participants was shy, looking at the ground and not responding to my verbal communication when I first met them. However, when they started drawing, they became very talkative. Another child had trouble responding verbally to my interview questions. However, when I pointed to content in their drawings and asked them to explain what they had drawn their verbal language was facilitated, thereby providing me with insight into their conceptions.

Following the Phase One pilot, I decided to make one amendment to the drawing activity. The amendment entailed changes to the phrasing of the drawing introduction and the materials I provided to children to complete the drawing. Specifically, I changed the phrasing “There are ten coloured pencils, you can use some or all of them” to “There are ten coloured pencils, a grey lead pencil and a pen. You can use some or all the colours or just the grey lead or pen if you wish.” I also added a grey lead pencil and a pen to the drawing materials. The rationale for that decision was based on a 12-year-old participant asking if they could use a grey lead pencil or a pen rather than the provided coloured pencils. As I was planning to interpret children’s drawings based on the verbal narratives that they would be providing in support of the content of their drawings, rather than through interpretation of their use of arts-based elements, I considered that this amendment had potential to make children to feel more comfortable engaging in the task without affecting the outcome of my findings.

Regarding the interview questions, I found that my bank of open-ended topic questions were effective in keeping participants on the topic of interest, and that my prompting questions were effective in eliciting their underlying conceptions. For instance, when one child told me they liked my earrings and began telling me about their mother’s earrings, I was able to steer them back on track by asking them an open-ended topic question. In addition, my prompting questions encouraged children to divulge descriptive detail about their conceptions of hope for our future world. To illustrate, when I followed open-ended topic questions with prompting questions children provided additional information about their conceptions. As well as using the prompting questions, I reflected that I naturally employed other various strategies to further draw out information about children’s conceptions during the interviews. These included non-verbal prompts, short

encouragement phrases and active listening techniques. For instance, during the interviews, I nodded my head at certain times throughout the conversation or provided brief verbal encouragements, such as “Can you tell me more about that” to keep children engaged in the discussions. Additionally, I utilised active listening by restating and paraphrasing parts of what they said, allowing them time to finish speaking before I asked more questions. These practices were successful in eliciting further reflection from children about their individual ways of conceiving hope for our future world. Therefore, I planned to continue utilising them during subsequent data collection.

I decided to make several small amendments to my open-ended focus topic interview questions following the Phase One pilot. Upon reflection I felt that one of the questions were ineffective in orienting children to the phenomenon of interest and that another question required a follow up question to procure rich insight into children’s various conceptions. First, I changed question 2 from one question: How do you feel about the future world? to two: How would you feel if the future that you predict comes true? and how would you feel about living there? My rationale for making this change was based on my reflection that question 2 had not oriented children to the phenomenon of hope for our future world in a powerful enough way to elicit rich detail. In explanation, when asked question 2, one of the phase one pilot participants (9 years) replied that they ‘didn’t know’ and another (11 years) replied, ‘a bit mixed.’ I also added an additional follow up question to question 4: Is there anything that you are doing now to help make the future world better? My rationale for making this change was based on my reflection that despite the aim of question 4 to elicit rich detail about the various ways in which children conceive their capacities to act to solve future world issues, only minimum detail was obtained. To explain, when asked question 4, one participant said they ‘didn’t know’ and another said, ‘not much.’

5.9.3 Pilot Study Phase Two

Phase Two of the pilot study consisted of drawings and interviews with three participants (8 years, 10 years, and 11 years). The difference between the drawing activity in Phase Two, in comparison to that in Phase One, was that children were able to use a grey lead pencil or pen in addition to the coloured pencils. The difference in the phenomenographic interview schedule was that children were asked two additional focus topic interview questions. The Phase Two drawing introduction and open-ended topic interview questions are provided below.

Phase Two drawing activity introduction:

I'm going to get you to draw a picture of how you think the world will be in the future, in about 20 years or when you're an adult. Like your mums, dads, or my age. Think about what the world is like now, things like nature and people and our way of life, then think about what you think the world will be like in the future – will things change or stay the same, will they be better or worse, or perhaps some things better and some things worse? There is no right or wrong answer because the future hasn't happened yet. I'm just interested to know what you think. I'm not judging your drawing either, the drawing is just an activity to get your brain thinking about what our future world will probably be like. After that, we'll talk about what you've drawn, and I'll ask you some questions about what you think our future world will be like and why. There are ten coloured pencils, a grey lead pencil and a pen. You can use some or all of them, or just a grey lead or pen. You can have as much or little time as you need, just let me know when you're finished.

Table 5.6*Phase Two: Focus Topic Interview Questions and Rationale*

<i>Focus Topic Interview Questions</i>	<i>Rationale</i>
1. Can you explain what you have drawn please?	Prompt children to reflect on their conceptions of the future world as communicated through the content of their drawings.
2. How do you feel about the future world?	Prompt children to reflect on their expectations and feelings about our future world to reveal whether they have a positive orientation to the future.
3. How would you feel if the future that you predict comes true?	Same rationale as Question 2.
4. How would you feel about living there?'	Same rationale as Question 2.
5. How do you think the future world could be better?	Prompt children to reflect on perceived pathways to achieve sustainability goals.
6. How could you help make the future world better?	Prompt children to reflect on their perceived capacities to employ agency to achieve sustainability goals.
7. Is there anything that you are doing now to help make the future world better?	Prompt children to reflect on how they are already contributing to achieve sustainability goals.
8. How do you think others will treat the environment?	Prompt children to reflect on trust in others to contribute to achieving sustainability goals.

Like Phase One, at the conclusion of Phase Two, I followed the same process of reviewing reflections I had noted after the activities, along with transcripts of the interviews. This time I considered that further refinements to the drawing activity and the focus topic interview questions were not required. Undertaking my pilot study proved to be a time

consuming, but valuable endeavour in relation to the insights gained. The pilot process provided me with an opportunity to refine my data collection tools and trial the phenomenographic data collection approach; thereby increasing my confidence in my chosen method. Second, the refinements to my data collection tools made through the pilot process increased the capacity of my data tools to provide insight into the qualitatively different ways that children conceive hope for our future world and the influences on those ways.

5.10 Implementing the Main Study

After completing the pilot study, I was satisfied that my introduction to the drawing activity and my phenomenographic interview questions were successful in (i) orienting participants to the phenomenon of interest, (ii) procuring variation and (iii) encouraging children's participation. Accordingly, I continued with my data collection, collecting data from an additional 22 children, as follows.

5.10.1 Data Collection

Like in the pilot study, data collection was conducted in one session with each participant engaging in the drawing activity before moving on to the follow-up phenomenographic interview. The introduction to the drawing activity and interview questions used in Phase Two of the pilot were used in the main study (Appendix B & C). Twelve children of the 22 children included in the main study elected to be interviewed at a park close to their home, and sixteen chose to be interviewed in their own home. Twenty children elected to complete the activities without a parent/guardian directly present, however, parents or guardians were always in observable vicinity.

On average, children engaged in the drawing activity for 11 minutes. All children engaged in the activity for at least 6 minutes. Children aged over 8 years were most likely to use one to two colours and children under 8 were most likely to use 5 or more colours. All children used the entire page to draw. All children drew in silence; however, some children verbally expressed their ideas about what they would draw before beginning drawing.

The duration of the interviews ranged from 8-26 minutes. The average length of each interview was 21 minutes. I believe that discrepancies in the lengths of the interviews were largely due to the number of interview questions that I asked each participant. For example, if children perceived a positive future world without issues, I did not ask questions related to identifying pathways to help solve potential future issues. In this way, children's knowledge and understanding of, and solutions to issues of sustainability influenced the length of the interviews. I also consider that variation in verbal language development across the participant cohort influenced the duration of the interviews. For instance, eight and nine-year old children often answered "I'm not really sure" when I asked them a question. However, because I enabled children to communicate their conceptions through the drawing activity prior to the interview, I was able to mitigate this factor. This is because I was able to point out content in the drawings and ask children to explain it, thereby facilitating their verbal communication. This was an effective approach because children aged eight, nine and ten years engaged in the interview for an average of 23 minutes each, while children aged eleven and twelve years engaged in the interview for an average of 19 minutes each.

During the interviews I was very careful to avoid asking questions that could influence children's descriptions of their conceptions (Bruce, 1994a). To illustrate, I refrained from

introducing ideas or topics that children had not already expressed (Åkerlind et al., 2005). For example, if children did not focus on aspects of our world such as the health of our oceans, I did not introduce it into the conversation. During interviews, when additional information was needed, I referred back to the children's drawings or words to continue the conversation (Dall'Alba, 2000). For example, I often pointed to specific elements in their drawings and asked for explanations. In one instance, I prompted: "You said that you think there will be lots more buildings in the future. Why do you think that there will be more buildings?"

After collecting data from the 22 main study participants, I reflected on whether to include the data obtained during the pilot study in my analysis. This is a commonly debated question in phenomenographic research (Lupton, 2008; Yates, 2015). While some researchers suggest that pilot data is tainted by error and should be discarded (Bowden, 2005), it is a common view that if amendments made to data collection tools during the pilot are minor, then the pilot data can be incorporated (Lupton, 2008). In deciding whether to incorporate the pilot data into the main study's analysis, I reflected on my initial introduction to the drawing activity and interview questions. After careful consideration, I determined that while the data tools used in Phase Two of the pilot and the main study served to better encourage participation and orient children to the phenomenon of interest, they were not radically different to the tools used in Phase One of the pilot. Therefore, I made the decision to include the data obtained through the pilot process with the data of the main study. Accordingly, my study included a total of 28 participants.

5.10.2 Data Analysis

In this section, I explain the processes that I undertook to find out and describe the qualitatively different ways that children conceive hope for our future world and the influences on their conceptions. The data analysis process I followed drew upon descriptions of the phenomenographic data analysis process provided by Åkerlind (2003), Bruce (1997a), Lupton (2008), Sandberg (1994) and Yates (2015). My selected process involved a series of six distinct phases:

- familiarisation with the data
- searching for meaning
- concentrating on meaning rather than words
- searching for structure
- drafting the categories
- focusing on variation

The remainder of this section discusses how I enacted each of those phases.

Familiarisation with the Data

My analysis began with familiarising myself with the 28 interview transcripts. To do this I read through the transcripts four times. The purpose of the first reading was to acquaint myself with each interview. For the second, I read aloud to prevent skim reading. After the third reading, I wrote summary sentences for each interview question asked of each participant then compiled these into a complete summary of their interview. The fourth reading involved comparing each transcript to its corresponding summary to ensure that the summary was representative of the total transcript. Finally, I added supporting quotes from the transcripts to enhance the validity of my interpretations.

Searching for Meaning

In the second phase of my analysis, I wrote a meaning statement under each summary to represent how that child conceived hope for our future world. To achieve this, I read through each summary and considered whether and how the four key hope dimensions were being expressed: positive orientation to the future, pathways and agency thinking and trust. As mentioned, the meanings attributed to ways of conceiving are referred to as the referential elements of conceptions in phenomenographic research. In contrast, structural elements of conceptions refer to what the conceiver focuses on to form that meaning based on their background knowledge and experiences (Marton & Booth, 1997). To illustrate, one child expressed the meaning: The future is a place with many problems that are interconnected. Those problems can be overcome through multiple pathways. I enact those pathways and trust others to do the same. This meaning was based on the structure: climate change is caused by pollution and fossil fuels, and it causes tsunamis, and bushfires. Bushfires are common now and we need to do something immediately to slow climate change. I try not to use too much energy or plastic and my family, and my school does the same.

After I finished writing meaning statements under each of the 28 summaries, I shared six (22%) of the transcripts and their corresponding summaries and meaning statements with two members of my supervisory team. Following this, the three of us engaged in a meeting to collaboratively debate and reflect on my interpretations. My supervisors agreed with 100% of my interpretations. As a result of this process, I gained confidence and reassurance in my interpretations of the raw data.

Following affirmation that my meaning statements accurately reflected the meanings expressed in the transcripts, I commenced a process of grouping meaning statements that reflected similar language expressions. To start this process, I numbered each participants' transcript and their meaning statement with a corresponding number from 1-28. I then printed the meaning statements and cut them into strips before grouping similar meaning statements on different coloured sheets of paper. After sorting 22 of the meaning statements, I had nine different groups of meaning statements, and another group of three assorted statements that I termed miscellaneous as they did not appear like others. The remaining three meaning statements went into pre-existing groups which tells me that my data had reached saturation. This is because no new ways of conceiving hope for our future world were emerging from the data. Considering that the final three of 28 transcripts went into previously formed categories, I consider that the number of participants that I collected data from was adequate to understand how children conceived hope for our future world. This is because reaching saturation indicated that continuing to collect more data would not yield new insights and thus be redundant.

Concentrating on Meaning rather than Words

This third phase of my analysis reflected a shift from focusing on individual descriptions to collective descriptions. It also marked the point where critical variation in the different ways of conceiving hope for our future world amongst the groups began to appear. This phase involved two steps. The first step involved working with each group of statements to ensure that all the underlying meanings were similar. I found that two statements were dissimilar to other statements in the same group and that they belonged in another group. Accordingly, I reallocated those statements to their like group. The second

step of this phase of my analysis involved using the coded numbers on each meaning statement to return to each correspondingly numbered transcript to concentrate on the meanings or “underlying intentional attitude[s] towards the phenomenon” underpinning each statement (Åkerlind et al., 2005, p. 87). In this way, I focused on the meanings rather than the exact words used to express that meaning. Through that process, I discovered that one of the statements that I had used to represent a section of the data did not accurately reflect the intended meaning of the transcript, and in that instance, I re-wrote the statement to represent the underlying meaning more accurately before sorting it into a different grouping. I also revisited my miscellaneous statements and found that two of three of the statements were like statements and accordingly I grouped these two statements together to form a new group.

Searching for Structure

The fourth phase of my analysis involved shifting my focus from ‘searching for meaning’ (i.e., the referential element/how children conceive hope for our future world) in the data, towards ‘searching for structure’ (i.e., the structural element/what influences them to conceive hope for our future world in that particular way). To conduct this phase, I wrote on the back of each meaning statement in each group what each child had focused on to conceive hope for our future world in that way. Then I searched for the most ‘critical structural aspect’ (Ashworth, & Lucas, 2000), or the main collective focus across each group.

During this phase of my analysis, it became apparent that not all groups were exhibiting critical variation in conception; that is, they were conceiving the phenomena in similar ways. It became evident that there were in fact only five distinct groups present in the data, rather than the nine that I had originally identified. I presented those refined five

groups to my supervisory team to discuss and reflect on the essential meanings and focus of each group. It was agreed that the newly refined groups closely reflected the distinct ways of conceiving hope for our future world present in the data. Therefore, it was decided that these could be considered the emergent categories of description and that I should begin drafting the categories.

Drafting the Categories of Description

The fifth phase of my analysis involved drafting descriptions of each category. I began with writing each category's defining referential and structural elements. This directed my awareness to additional elements present in each category, namely their defining background and marginal aspects. In explanation of how I identified the background and marginal aspects, in some instances these were identified as I worked within single categories. However, in other instances, I only noticed these aspects as I worked across multiple categories and reflected on the differences between them. Accordingly, background and marginal aspects were incorporated into each draft category.

The process of developing categories of description was highly recursive, rather than following a linear progression. In explanation, it involved numerous iterations as I worked within and across individual and group data. In this way, the draft categories were rigorously revised, refined, and scrutinised until I was confident that each one described a distinct and comprehensive way of conceiving the phenomenon of hope for our future world. The process of drafting the categories was also recursive in the sense that I reintroduced the miscellaneous meaning statement at this point in my analysis to reflect on whether it could be incorporated into the devised categories. The purpose of this was to ensure that my identified categories were representative of all the ways of conceiving the given

phenomenon (Marton, 1988). Through this practice, I found that the miscellaneous data did fit within one of the identified categories, so I added it to that category (Yates, 2015).

When drafting the categories, it was important to ensure that my interpretations of the data were in keeping with the views of the participants. To ensure this, I used sticky flags to link information in my drafted categories with information from the transcripts.

Specifically, I used pink flags to link meanings in the categories with quotes from the transcripts, yellow flags to link structural aspects, blue flags to link background aspects and green flags to link marginal aspects. This process helped to mitigate my inherent researcher biases and ensure authenticity of my findings.

Identifying Variation across the Categories of Description

The sixth phase of my analysis involved identifying variation across the categories of description. However, while I present the identification of variation amongst the categories as a distinct phase in my analysis, in reality I identified variation amongst the categories in a parallel manner with some of the earlier phases presented above. For example, I detected variation in themes across categories during the searching for structure phase and those themes emerged with greater clarity as I worked through the drafting of the categories.

While working on the searching for structure phase, I noticed elements of variation in children's hope. Specifically, I noticed that some children demonstrated stronger abilities to envision positive futures based on their perceived capacities to generate and act on pathways and trust others to contribute to this end. I naturally made notes about these points of variation as I discovered them. In some instances, variation was easily discerned, while on other occasions variation was only discovered after looking at the same point of variation across each category and reflecting on similarities and differences. For example,

while I easily discerned that children in all groups had good knowledge about challenges that threaten futures, it was only after searching for variation across the categories that I realised how powerful some banks of knowledge were in relation to others. For instance, the pathways some children identified as having capacity to mitigate sustainability problems were more complex in that they encompassed individual, collective, and political pathways.

5.11 Establishing the Trustworthiness of this Study

Below is a description of how trustworthiness including credibility, dependability and transferability is substantiated in this study throughout my data collection, data analysis and reporting processes.

5.11.1 Credibility

To ensure the research findings of this study represent a credible interpretation of the data I considered the concepts of content-related credibility, credibility of methods and communicative credibility after Collier-Reed and Ingerman (2013) throughout my research process.

As mentioned in Chapter 4, content-related credibility refers to the researcher's understanding of concepts related to the object under investigation. The major concept of this study is hope. To establish content credibility relating to hope, I thoroughly researched the concept of hope. I reviewed existing literature on hope and examined established theories and frameworks for understanding hope from multiple perspectives. I documented this understanding in Chapter 2 of this thesis. I also developed and documented a clear theoretical and conceptual framework that underpins this study on hope, drawing from

well-established theories (Chapter 3). In addition, I personally engaged with academics in the psychology field to develop and refine my understanding of hope.

Credibility of method refers to transparency of research design (see Chapter 4).

Transparency refers to the degree of openness and clarity provided by researchers regarding their study's methodology, data collection, analysis process and findings (Collier-Reed & Ingerman, 2013). Transparency allows other researchers in the field to evaluate the quality of a study's methods and conclusions. It enables them to assess whether the findings accurately represent what was studied. In this study, I demonstrate credibility of methods by:

- providing detailed information regarding the phenomenographic methodology
- providing information about the context of my study and how I used purposive sampling to ensure a diverse sample appropriate to the focus of the study
- conducting a pilot study
- providing detailed information about my data collection processes including the structure and content of my drawings and interviews
- meticulously documenting my analysis processes to demonstrate how I arrived at my research findings

Communicative credibility refers to a researcher's ability to "argue persuasively for the particular interpretation that they have proposed" (Åkerlind, 2005b, p. 330). I established communicative credibility during my points of data collection and analysis processes and through the reporting of my findings.

To achieve communicative credibility at the point of data collection in this study, I reiterated the research aims and processes prior to implementing the data activities.

Further, to ensure that I interpreted children's responses to the data collection activities in the ways that they were intended, during the phenomenographic interviews, I continually asked children to clarify their answers. For example, "Can you tell me more about that?" These types of clarifying questions enabled me to continually check my interpretation of children's responses. To establish communicative credibility during data analysis, I was rigorous in constructing the categories of description. I did this by continually reflecting on how I constructed the categories by referring to the transcripts to ensure that they were representative of the ways in which children described their conceptions of hope for the future world. In addition, I used quotes from the transcripts to support my interpretations.

Communicative credibility through reporting was achieved in two ways. First, I continually engaged in discussion about my research processes and findings with my research supervisors and with experts in the phenomenographic field from my university. Second, I presented my research aims, processes, methods, and findings at various stages of my research at national and international conference presentations (O'Bryan, 2018; 2021; 2022; 2024). Discussing and presenting my research enabled me to receive feedback from experts in my field on the design, content, and application of various concepts in my study, thereby increasing its trustworthiness.

5.11.2 Dependability

Dependability refers to whether the findings of a study can be depended upon to be true (Yates, 2015). This includes a judgement about whether the same results would emerge if the same research were conducted by a different researcher. To ensure dependability in this study, I followed the same three principles for dependability in phenomenographic research described by Collier-Reed and Ingerman (2013). Namely, I sought to follow

phenomenographic interview protocols, ensure accuracy of the interview transcriptions, and verify my data analysis. First, I followed phenomenographic approach to interviewing, adopting a semi-structured, open-question format to avoid leading children's responses to the questions. This enabled children to answer the questions in ways that were meaningful to them. I also employed active listening and provided children with time to reflect on their answers during the interviews to encourage them to communicate their conceptions clearly. Regarding the accuracy of the interview transcriptions, I personally conducted the interviews and carefully transcribed them after listening to them multiple times. To demonstrate verifiability of data analysis, I employed the dialogic reliability check (Åkerlind, 2005a), whereby agreement is reached about interpretations of the collected data through discussion and critique amongst several researchers. To do this, I engaged in continuous discussion throughout my analysis phase with my doctoral supervisory team and the broader doctoral community.

5.11.3 Transferability

In this study, I provide comprehensive detail about my research, including the major contextual factors that may have influenced the findings. In providing this detailed information, the extent of the transferability of my findings to a range of educational settings can be determined (Mertens & McLaughlin, 2004). It is likely that some of the categories of description arising through this research may be transferable to some other primary-aged education contexts across the globe. This is because children from other contexts have experienced similar contextual factors such as bushfires and population increase. For instance, children from France, Algeria, Italy, Turkey, Jerusalem, Lebanon, California, Russia experienced bushfires in 2021 (Eberle & Roa, 2022; European Commission

Joint Research Centre, 2023) and children from China, India, The United States, Indonesia, and Pakistan have similarly experienced rapid rates of population increase (Roser et al., 2021). Therefore, children from those contexts may have similar views of the future.

I also provide comprehensive detail about my research methodology and methods. This is so that the transferability of phenomenographic methods to research exploring the phenomenon of hope can be considered for a range of research contexts. As mentioned, the phenomenon of hope has not been studied through a phenomenographic approach previously. Therefore, the careful documenting of my phenomenographic methods have the potential to be used as a guide or template from which further studies in this emergent 'hope for our future world' field can be investigated.

5.12 Ethical Considerations

Ethical clearance for this research was obtained from the James Cook University Human Research Ethics Committee (Approval Number: H8102; Appendix D).

Matters concerning participant anonymity and confidentiality were mitigated in the following ways:

- Potentially identifying information was not included in the transcripts. This included children's names, addresses and school enrolment details.
- Pseudonyms were allocated to each child's transcript and drawing. These pseudonyms included a letter representative of their gender (M or F), a number indicating their age, an R or U representative of their location (rural/urban) and a I/P/C representative of schooling type (independent, public, or catholic).
- Audio-recordings were destroyed once written transcripts were produced.

- Following the writing up of the research, the drawing activities and interview transcripts were stored in a locked cabinet.
- Prior to the commencement of each interview, participants were assured that all their responses would be confidential and anonymous.

Matters concerning the conduct of research with child participants were mitigated in the following ways:

- The research aims, methods, and process were explained to children before commencing any activities and children were provided with time to ask any questions.
- Guardian and child consent was sought prior to commencement of data collection.
- Children were advised of their right to withdraw from the study at any time.
- Children were provided with the opportunity to have a guardian present during data collection.

5.13 A Final Note

This chapter presented the background and context to this study and demonstrated how the phenomenographic approach guided the selection and implementation of the research methods. In the subsequent chapter, I explicate the research findings. Specifically, I present different categories capturing children's conceptions of our future world and delve into their unique characteristics.

Chapter Six: Children's Conceptions of Hope for our Future World and the Factors that Influence their Hope

This chapter presents the findings related to question one and two: How do children conceive hope for our future world? And what factors influence how children conceive hope for our future world? I identify five distinct categories that represent different ways that children conceive hope for our future world. Furthermore, I reveal the factors that influence children's hope in each category. To begin the chapter, I provide an outline of the categories of hope and describe how they were formed. Next, I explain the participant distribution and characteristics across the categories. I then describe the presentation of the categories. To conclude the chapter, I individually discuss each of the five categories of hope.

6.1 Outline of Categories and How They Were Formed

Outline of Categories

Data analysis reveals five different categories representing how children conceive hope for our future world. Each category is an aggregation of the conceptions of multiple children. Therefore, the categories denote a reduction of the data into groupings of particular ways of conceiving rather than individual views. The identified categories are:

- Category 1: Expansive Hope for our Future World.
- Category 2: Intermediate Hope for our Future World.
- Category 3: Emergent Hope for our Future World.
- Category 4: Limited Hope for our Future World.
- Category 5: Uncritical Hope for our Future World.

How the Categories were Formed

To form the categories I evaluated each child's data against the four hope dimensions (Chapter 3). This process resulted in the emergence of five distinct categories, representing varying capacities to conceive hope for our future world. I hierarchically ordered the categories from most to least powerful (1-5) in terms of their relationship to sustainability engagement (see Chapter 2). Drawing from the phenomenographic literature, I refer to the four hope dimensions as points of variation since they distinguish the differences between categories. Recall from Chapter 3, the four points of variation, that is, the four hope dimensions are:

- Positive orientation to the future world based on belief that sustainability goals can be met.
- Perceived pathways to achieve sustainability goals.
- Perceived agency to achieve sustainability goals.
- Trust in others to support the attainment of positive sustainability outcomes.

For more information regarding the four hope dimensions refer to Chapter 3. By examining how children align with these four points of variation within each category, this study provides insights into variation in different dimensions of children's conceptions of hope for our future world.

6.2 Participant Distribution and Characteristics

All children who took part in this study are represented by one of the categories and a similar number of children are represented by each category, except for the uncritical hope category which represents a smaller number. The distribution of participants across categories, as well as their characteristics, is depicted in Table 6.1.

Table 6.1*Participant Distribution and Characteristics Across Categories*

<i>Category</i>	<i>Number of Children</i>	<i>Age</i>	<i>Gender</i>	<i>Schooling Type</i>	<i>Geographical Location</i>
<i>Category 1: Expansive Hope</i>	5	One child each aged 8yrs, 10yrs and 12years; and three children aged 9yrs.	3 females, 2 males.	1 catholic, 2 public, 2 independent.	3 regional, 2 metropolitan.
<i>Category 2: Intermediate Hope</i>	7	One child each aged 11yrs and 12yrs; and two children each aged 8yrs and 10yrs.	4 females, 3 males.	1 catholic, 5 public, 1 independent.	2 regional, 5 metropolitan.
<i>Category 3: Emergent Hope</i>	6	One child each aged 8yrs, and 12yrs; and two children each aged 9yrs and 10yrs.	4 females, 2 males.	2 catholic, 4 public.	2 regional, 4 metropolitan.
<i>Category 4: Limited Hope</i>	7	One child each aged 8yrs, 9yrs, and 10yrs; and two children each aged 11yrs 12yrs.	3 females, 4 males.	2 catholic, 3 public, 2 independent.	3 regional, 4 metropolitan.
<i>Category 5: Uncritical Hope</i>	3	One child each aged 8yrs, 9yrs and 11yrs	1 female, 2 males.	1 catholic, 2 public.	1 regional, 2 metropolitan.

Table 6.1 shows a similar number of children are represented within each category.

This indicates that there is no dominant way in which children conceive hope. Furthermore,

the Table (6.1) signifies that categories are representative of children with diverse characteristics of age, gender, school type and geographical location. Therefore, in this study, those characteristics were not found to be significant factors determining hope. The unique influences that children in each category expressed as significant to their hope are explicated in the individual category presentations in Sections 6.4-6.8 below.

6.3 Presentation of The Hope Categories

The presentation of the categories follows a structured approach, where each of the five categories is presented one-by-one. For each individual category, I first provide a summary overview table detailing key characteristics and perspectives that define that category of hope, including the referential and structural elements. Recall from Chapter 4, categories are comprised of referential and structural elements. Referential elements encompass what people conceive about a phenomenon, and structural elements refer to why they conceive that phenomenon in their particular way. In this study, the referential elements of categories are the overall, global ways that children represented by that category conceive hope for our future world according to the evaluation of their data against the four hope dimensions. The structural aspects encompass children's prior knowledge and experiences that shape their conceptions of hope. They include focus, background, and margin aspects. Focus aspects pertain to what children primarily concentrate on when conceiving hope for our future world. Background aspects are stronger influences on children's conceptions than margin aspects. By sequentially presenting each category while analysing both its referential and structural aspects, I provide understanding about varying types of hope and their influences. Accordingly, this structure aligns with addressing research questions one and two respectively:

1. How do children conceive hope for our future world? (referential aspects)
2. What factors influence how children conceive hope for our future world? (structural aspects)

Following the presentation of the summary table, I unpack it and provide a visual representation (drawing) and accompanying transcript representative of the essence of that category of hope.

6.4 Category 1: Expansive Hope for Our Future World

Table 6.2

Summary of Children's Conceptions of Expansive Hope for Our Future World

<i>Referential Elements</i> <i>(how children conceive expansive hope)</i>	Overview of children's capacities to conceive the four hope dimensions	Positive orientation to the future based on abilities to conceive that many sustainability goals can be realised. Identifies many individual, collective, political and leadership pathways to achieve sustainability goals and acts on many of those. Trusts others to act to realise sustainability goals.
	Hope Dimension 1: Positive orientation to the future based on belief that sustainability goals can be met?	Goals can be achieved relating to : Gender equality; job security; weather stability; deforestation; animal poaching; plant and animal extinction; loss of biodiversity; water air and land pollution; climate change; cost of living; housing shortages; population increase; over-reliance on plastic and fossil fuels; overconsumption; environmental disasters; fewer natural landscapes; animal habitat; greenhouse gas emissions due to cattle farming.
	Hope Dimension 2: Perceived pathways to achieve	Pathways to sustainability goals include: Reducing, reusing, and recycling waste; using less plastic and fossil fuels; advocating for at risk species; fundraising; petitioning government agencies to act for climate change; working in partnerships with others – such as joining clubs; protesting for renewable energies; planting trees; developing appreciation for nature by spending more time in it; creating natural spaces; rewarding positive environmental behaviours; encouraging others to act in ways that are better for the environment (putting up posters, being a role model); choosing

	sustainability goals?	jobs to help solve sustainability problems, such as environmental scientist, wildlife expert/vet, interior designer; using eco-friendly products; buying second-hand products; avoiding plastic wrapped products; making presents for loved ones rather than buying them; creating technology to mitigate sustainability challenges; educating people about the impacts of their actions on environments; reducing red meat consumption.
	Hope Dimension 3: Perceived agency to achieve sustainability goals?	Agency to achieve sustainability goals includes: Reducing, reusing, and recycling waste; using less energy; spending time in nature to develop appreciation for it; picking up rubbish; planting trees; participating in garden clubs; using less plastic; writing letters to raise awareness about environmental issues; fundraising for and spreading awareness about at-risk animal species; eating less red meat.
	Hope Dimension 4. Trust that others will act to achieve sustainability goals?	Trusts friends, family, the general community, and politicians to work collaboratively towards realising sustainability goals.
<i>Structural Elements</i>	Focus	Identifying ecological, social, and economic challenges and generating pathways and acting to mitigate them.
<i>(why children conceive expansive hope)</i>	Background and Margin	Background: Experiences of: - school - home - previous success in mitigating sustainability challenges or hearing about others' successes Margin: Exposure to: - artwork

6.4.1 Children with Expansive Hope's Capacities to Conceive the Four Hope Dimensions

Children with expansive hope (Table 6.2) have positive orientations to the future which is evident in how they perceive a range of ecological, social, and economic issues in the future and believe that these can be mitigated through individual, collective, political and leadership pathways. As an example, children with expansive hope suggest that individuals can reduce their waste and energy consumption, communities can implement 'clean-up' days, and councils can install more recycling and compost bins. Expansive hope individuals also strategise leadership pathways to alleviate sustainability issues (Figure 6.1).

Figure 6.1.

Children with Expansive Hope Demonstrate Leadership to Ameliorate Sustainability Challenges.



Explanation of drawing: "This is the world now with cut down trees and no animals (left) and this is me getting my friend to help me save tress and animals by getting her to help me write letters and tell people not to buy things with palm oil in them which is why people cut down trees so they can make some types of food. When we are both doing those things, we can help make the trees and animals come back."

Figure 6.1 reflects the participant's intention to take a leadership role to allay issues of deforestation and loss of animal habitat. They depict themselves taking others under their wing and express that they will ask them to help "write letters and tell even more people not to buy things with palm oil in them."

Children in this group perceive several, alternative pathways to address sustainability challenges. For example, participant 11 generates numerous, alternative pathways to alleviate climate change: "I can protest for more solar, not pollute as much and teach other people about what to do to help stop climate change like help with beach clean-ups. If that doesn't work, I could ask other people what else they think for their ideas." Their comment demonstrates their commitment to persevere with realising positive sustainability outcomes in the face of setbacks.

Children in this highest category (expansive hope) act on many of the pathways that they identify to realise positive outcomes. For example, participant 23 identifies that engaging in community garden clubs can abate issues of hunger. Accordingly, they volunteer at their local community garden. They explain that this makes them feel "happy that people can eat the food that we grow and have a healthy meal." In this way, their agency leads them to experience a sense of purpose as their work in the garden contributes towards addressing the challenge of hunger in their community. Children with expansive hope also express intent to act for sustainable environments in the future. This is evident in their expressed intents to vote (at the legal age) for political parties that support healthy environments and engage in eco-friendly modes of employment. For example, participant 23 expresses the intent to vote for the Greens Party "to stop coal" and participant 11 plans to become a scientist to "help with fixing things like water and air pollution."

An example of expansive hope is Participant 19's drawing and transcript (Figure 6.2).

This is because it reflects the belief that sustainability challenges can be mitigated through a range of individual and collective pathways and actions.

Figure 6.2

Pictorial Representation of Expansive Hope for Our Future World



Explanation of drawing. "I've drawn that the world could be this or this. On the one side there may be less trees because people might chop them down and pollute and that will cause global warming and that will mean more bush fires and that will affect the number of trees too. Then because there's less trees that will make global warming even worse and that will affect the oceans. And petrol cars will make that all worse too. But, if people act now, I think I will be happy to live in the future world like the drawing on this side (right). Like, if every person in the world used one less piece of plastic that would be 7 billion pieces of plastic less, but if everyone used one more piece of plastic that would be 7 billion pieces more. It depends what people decide to do as to whether I'd be happy to live in the future world or not. It makes me sad sometimes when I think about nature disappearing but there is still lots of nature there and there are people who are making sure we can keep nature too. We need to plant more trees to stop global warming and stop using as much petrol and energy. If everyone knew how bad their car was or clothes-dryer, they might use it less. We could reward people for acting in ways that are good for the environment and join clubs that help with things like pollution or species dying. We can also spend more time in nature so we appreciate it more and then we will want to look after it more. At the moment at home, we are already doing things like recycling, reducing, and reusing. I try and use less energy, and I encourage people to act in ways that don't cause global warming. In the future I want to be an interior designer, and I will do things like choose eco-friendly materials and vote for people that want to help the earth. I think that people will try and do something in the future because they try and do things like now. Like at school we try and stop polluting. Everyone wants to have a nice future so I think they will try. Some people still won't do the

right thing, but I hope we can teach them to make them see how to do better or reward them so that they do, and I think the world will look like the drawing on the right side.”

Children who conceive expansive hope for future world trust that their friends, family, the general community, and politicians will work with them to alleviate future issues of sustainability. Their trust motivates them to generate pathways and act to create sustainable futures. For example, participant 11 made the comments,

“My friend who’s a vet will help with saving animals ... My mum will make garden clubs to grow food ... people will vote for good prime ministers then they will help the environment too ... I will become a scientist and help solve problems with water. I think together we can make the future better.”

Participant 11’s comments demonstrate how trust in others plays a significant role in fostering hopeful thinking. They exhibit confidence and reliance on others to contribute positively towards addressing sustainability related challenges. First, they have trust in their friend’s expertise and commitment to make a difference in saving animals. Second, they are confident that their mother will participate in community gardens into the future to abate food security challenges. Third, they trust the wider community to elect political leaders that will take effective measures for protecting the environment. Last, there is self-trust expressed by the participant themselves. They believe they can become a scientist capable of solving water-related problems.

6.4.2 Why Children Conceive Expansive Hope for Our Future World

Focus

When perceiving the future world, children with expansive hope focus on ecological, social, and economic issues of sustainability and generating pathways and acting to alleviate them. For instance, participant 9 identifies climate change, bushfires, and loss of biodiversity

as significant environmental challenges and identifies that reducing energy consumption and reliance on plastic can allay those issues:

“Polluting is a big cause of climate change. Climate change is already a problem, like we’re already having disasters like fires and less animals. Now is a good time to make it go lower. It can be a better world if we use less things like energy and plastic like I’m trying to do and that is what we’re trying to do at school and what I am trying to get my family to do. I also try not to eat lots of meat because cows produce lots of gas that causes climate change too.”

Participant 9’s statement is representative of the children in this category’s proactive and solution-oriented mindset. They recognise sustainability issues at hand and direct their attention towards generating solutions and acting to ameliorate them. Participant 9’s comments reflect their capacity for critical thinking and problem solving in how they consider different avenues and approaches for mitigating climate change. Importantly, their commitment extends beyond ideation as they translate their ideas for ameliorating climate change into tangible actions.

Background and Margins

Three background elements and one margin element influences children’s capacities to conceive expansive hope for our future world. Specifically, children’s school and home experiences and their previous successes in achieving sustainability goals and hearing of others achieving sustainability goals are the background or primary influences on their capacities to conceive expansive hope. Their experiences of artworks are a margin influence.

Children’s school and home experiences along with their experiences of achieving positive sustainability outcomes or hearing about others achievement of sustainability goals are the biggest influences on their conceptions of expansive hope for our future world. For instance, children with expansive hope report that at school and home they learn about

sustainability challenges, set specific goals to mitigate them, explore pathways to mitigate them and act to alleviate them. They often achieve their sustainability goals, and this inspires them to set more goals. For instance,

“At school we learned that the eastern bandicoot was endangered, and we talked about things we could do to help it. I think the world can be better because we did some fundraising for the eastern bandicoot, and we wrote letters to tell our parents about it and help get the money and we gave the money to Melbourne Zoo, and it helped save them. These are things you can do to help save animals and the Melbourne Zoo have lots of things they do to help save lots of animals. I’ve started reading about helping save the red-tailed black cockatoo too” (participant, 9).

Participant 9 was alerted to the eastern bandicoot’s status as an endangered species at school and was tasked with helping to increase its numbers. They were prompted to write letters and work in partnership with Melbourne Zoo and their peers to fundraise to save the bandicoot. They experienced success in saving the bandicoot and this inspired them to help conserve the red-tailed black cockatoo. In this way, achieving sustainability goals inspired further sustainability goal setting.

When children with expansive hope hear about others’ sustainability achievements, they develop belief that positive sustainability outcomes are possible, and this inspires them to engage in action and express intent to engage in actions in the future to realise positive outcomes. For instance, participant 11 said:

“I think problems with the world can get better. When I went to Bali there were lots of skinny dogs and I was so sad, I thought the dogs were all doomed and that they were all in pain. But my mum’s friend told me that she went to Bali after me and they stopped them (the dogs) from having lots of puppies, so now there’s more food for the dogs because there aren’t lots and lots of them. That makes me happy and makes me think I can do things to make problems better too. Like even though orangutans are endangered if I stop using things with palm oil in them and become a vet in future, I could help them too.”

Hearing about others' success in solving the sustainability problem of stray and unhealthy dogs in Bali led them to conceive that they can also act to alleviate challenges affecting the conservation status of orangutans in the present and into the future.

Children's experiences of artworks can also influence them to conceive expansive hope for our future world. For instance, participant 24's comment and accompanying drawing below highlights how art has brought their attention to the harmful impact of pollution on the local pelican population and motivated them to act to mitigate it.

Figure 6.3.

Pelican Rubbish Sculpture



Explanation of drawing. "The pelican sculpture at our beach is made of rubbish to show us that if we pollute the pelicans will eat it and they will be gone and there will just be rubbish. People pick up the rubbish on the beach and put it in the [pelican sculpture's] mouth to stop it from going into real pelican's mouths. Me and mum put rubbish in there. There's lots of rubbish in there [pelican sculpture] all the time so people are picking it up. I make sure I put rubbish in there, so I don't let down everyone who does the right thing. Now we will still have pelicans."

Participant 24's comment highlights that experiences of artworks can facilitate hope. For instance, the pelican sculpture serves as a powerful visual representation of the impact of pollution on wildlife; conveying a clear message that if we continue to pollute it will harm

pelicans and other marine life. Further, the interactive nature of the sculpture encourages active individual community participation; providing a tangible way to contribute to solving the problem as an individual (putting rubbish in the sculpture beak) and also showcasing that others are contributing to solving the problem (through the collection of accumulated rubbish in the sculpture beak). This experience fosters hope for better sustainability outcomes.

6.5 Category 2: Intermediate Hope for Our Future World

Table 6.3

Summary of Children's Conceptions of Intermediate Hope for Our Future World

<i>Referential Elements (how children conceive intermediate hope)</i>	Overview of children's capacities to conceive the 4 hope dimensions	Believe that some ecological, social, and economic challenges of sustainability can be mitigated through a range of individual, community, and political pathways. Believe that population increase, and technology will present significant barriers to overcoming other challenges. Enact some of their identified pathways to realise favourable sustainability outcomes and trust most people will act to those ends.
	Hope Dimension 1: Positive orientation to the future based on belief that sustainability goals can be met?	Goals can be achieved relating to: Gender equality; access to education; water, air, and land pollution; deforestation; human sickness (from pollution); social inequality (hunger); creating more natural spaces; mitigating loss of plant and animal biodiversity.
	Hope Dimension 2: Perceived pathways to achieve sustainability goals?	Pathways to sustainability goals include: Listening to and respecting women and girls; providing equal access to education; reducing, reusing, and recycling waste; appreciating nature; looking after animals and trees; being a mindful consumer; donating to those in need; contributing to community social clubs – community gardens, supermarkets; picking up rubbish and disposing of it thoughtfully.

Hope Dimension 3: Perceived agency to achieve sustainability goals?	Agency to achieve sustainability goals include: Reducing, reusing, and recycling waste; donating to those in need; contributing to community gardens, and supermarkets; picking up rubbish, disposing of litter thoughtfully.
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Hope Dimension 4. Trusts that others will act to achieve sustainability goals?	Children with intermediate hope trust that most friends, family, and community members will act to realise sustainable futures, however, they lack trust in governments to act.
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<i>Structural Elements</i>	Focus	• Economic, social, and ecological issues of sustainability and generating pathways and acting to mitigate sustainability challenges. • Issues of sustainability that they feel resigned to.
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<i>(why children conceive intermediate hope)</i>	Background and Margin	Background: Experiences of: • school • home • advancements in technology • human population increase Margin: Experiences of: • awareness days, such as International Women’s Day
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6.5.1 Children with Intermediate Hope's Capacities to Conceive the Four Hope Dimensions

Children with intermediate hope (Table 6.3) conceive that certain ecological, social, and economic challenges can be mitigated through individual, collective, and political pathways. For example, they perceive that climate change and gender inequality can be mitigated through several individual, collective, and political pathways. However, children with intermediate hope also perceive that challenges associated with human population increase and/or hastening technologies will lead to less favourable future environments; this leads them to feel less positive about futures than children with expansive hope.

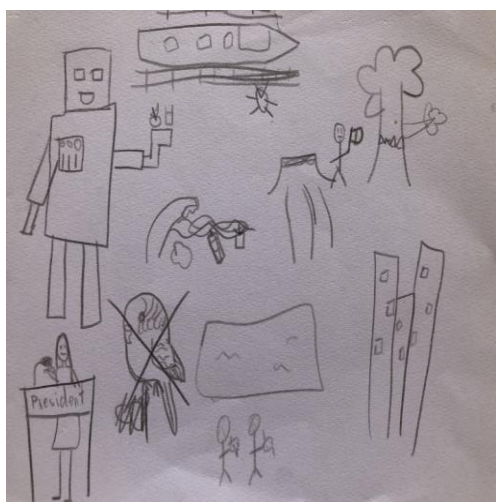
Intermediate hopeers generate many individual, collective, and political pathways to overcome barriers to sustainable environments. For example, participant 26 made the comment, “to help the oceans you can put rubbish in the right bins, help clean up the yard when the warning bell for the end of lunchtime goes and vote for school captains that care about the environment.” Such pathways reflect children’s capacities to reframe barriers to positive future environments as challenges to be overcome through specific routes.

The children in this group enact approximately half of the pathways that they identify to realise sustainability goals. Their ability to identify pathways to realise sustainability goals coupled with their reluctance to act on many of those pathways reflects a bit of a mismatch between their pathways thinking and agency capabilities. For instance, participant 3 made the comment, “I could look after trees and animals by reducing, reusing and recycling but it won’t make any difference.” In this way, he can identify ways to help create sustainable ecological environments and assist with mitigating challenges of biodiversity, but he does not act on those ways because he perceives them as futile.

In summary, participant 21's drawing and accompanying transcript below are representative of the children in this category's capacities to fulfil the four hope dimensions. This is because it reflects an ability to identify and act on pathways to mitigate some, but not all, perceived future challenges of sustainability and trust in others to contribute to creating sustainable futures.

Figure 6.4

Pictorial Representation of Intermediate Hope for Our Future World



Explanation of drawing. "I drew girls with more jobs and more happy because I think in the future girls' rights will be better because I think girls' rights are getting better right now because they're being listened to and respected more. I think we'll get paid more to be equal like men and more girls in the world will get to go to school which is justice. We've been learning about this in school for International Women's Week and how we can encourage women's rights by advocating for girls and supporting them and I've been doing this by making a video clip about it and sharing it with my class. I think nature is in big trouble. There might not be much sunlight, the rivers might be trashed, the forests might be cleared, and people might be sick and be coughing because of the traffic pollution. This is what happened when I lived in Bandung near Jakarta, and I hope it doesn't happen here. I think there will be robots. We should reduce, reuse, and recycle and try not to take nature for granted and look after the animals and trees and not be greedy by using too much stuff. I think there will just be too many people though and they'll need somewhere to live, and they'll get rid of nature so they have space and then rubbish, and pollution will come from their cars and trains. It's not anyone's fault, I think people care and they will try do something to help, but I just don't think we can do anything about nature being ruined because there will be too many people and the world will be worse" (participant 21).

In this category, children trust that most people will act to mitigate future challenges of ecological, social, and economic sustainability. For instance, participant 27 made the comment, “Our generation care about these things [sustainability problems] a lot. We will keep working at making them more healthy” and participant 21 said, “girls’ rights, they keep getting better and better because some people have fought for them over a long amount of time ... I think they will keep doing that.” Children’s trust that others will act to mitigate issues of sustainability in the future increases their hope because it inspires them to act for sustainable futures themselves. This is evident in participant 16’s expressed intention to continue to work in a community garden in the future: “because lots of people help, we can grow lots and lots of things and that means lots of people can be helped with food, so I think I’ll continue to work there in future.”

Children with intermediate hope’s trust that others will act for environments does not extend to governments. They express that they would like people in power to act for environments, but they don’t believe that they will. This damages their hope because it makes them feel discouraged, perceiving that without government support desirable future outcomes may be elusive. In participant 21’s words:

“Hopefully there are people, like the right type of people, like the prime minister, that can actually do something about the future that will fight for technology not to destroy too much, and they’ll be able to stand up to people who let technology ruin things for money, like farmland to build shopping stores or something. I don’t know if they will, they’re not doing anything now.”

Participant 21’s comment indicates that they have low confidence in governments to address pressing sustainability challenges. Their scepticism and cynicism is based on their perception that governments are not currently taking sufficient action, prioritising short term economic gains over long term sustainability.

6.5.2 Why Children Conceive Intermediate Hope for our Future World

Focus

When conceiving our future world, children who have intermediate hope focus on ecological, social, and economic issues of sustainability and generating pathways and acting to mitigate some of those issues. They also demonstrate resignation to some sustainability challenges on account of human population increase and/or advancing technologies. For instance, participant 16 said:

“There’s a community supermarket in our street where we give cans for people and sometimes, I give my old books to the community library at the park and mum and me help grow tomatoes and stuff at the community garden. I think people will continue to have the garden in the future because it’s been there for a long time so hopefully in the future there will be less hungry people. To help with nature I don’t really know. I think technology will keep getting more advanced and that is already making problems now and it will make even more problems in the future. Like they’ll be able to wreck the environment quicker by digging, chopping down trees and things like that like how they keep making more buildings. Technology will ruin the world, and I don’t think anything can be done to stop that. I think it’s going to happen. It will keep getting more powerful and destructive.”

Participant 16 focuses on generating pathways and acting to alleviate the challenge of social inequality in their community. They also focus on resignation to future ecological degradation on account of advances in technology. For instance, they identify and enact pathways to alleviate social issues and accordingly expect positive societal outcomes, but on the other hand they make comments such as: “Technology will ruin the world, and I don’t think anything can be done to stop that.” Their views present a mixed perspective combining hopefulness around communal support initiatives (Community supermarket/library/garden) with apprehension concerning technology’s potentially detrimental impacts on nature.

Background and Margin

Four primary background elements and one secondary marginal influence led children to conceive intermediate hope for our future world. These include two positive background influences: school and home experiences, as well as two negative background influences: experiences of advances in technology and human population increase. Additionally, there is one marginal influence: experiences related to awareness days, like International Women's Day.

Children's school and home experiences positively influence their conceptions of intermediate hope for the future. In evidence, participant 3 explained that they learned about the issue of seafood sustainability at school and a pathway to mitigate that issue: buying easily replenishable fish. At home, they acted on their learning to influence their mother to purchase mussels instead of prawns. Through their school experiences, participant 3 developed their belief that positive outcomes for oceans are possible.

"We learned how to make good seafood choices at school to make sure that there is enough seafood for a long time. When I was shopping with mum, I helped her choose mussels instead of prawns. That might help the oceans a little bit if people do stuff like that. Mum did so maybe they will."

Participant 3's comments reflect their successful transfer of learning about sustainable seafood choices from their school to their home context. They used this knowledge to persuade their mother to prioritise buying mussels instead of prawns, demonstrating a meaningful effort to contribute towards seafood sustainability. The support and willingness shown by Participant 3's mother in being guided by their leadership on this challenge nurtured their hope that the issue of unsustainable seafood consumption can be mitigated.

Children in this category fear that human population increase and advances in technology will present insurmountable challenges for future environments damages their hope. For example, participant 27 mused that human population increase has led to a significant reduction of fish in the ocean, and that further population increase will lead to all the fish 'run[ning] out.' Regarding advances in technology, participant 3 lamented, "I think there's nothing that we can do about technology ruining the environment because its already doing it now and, in the future, it will get even more powerful." Children with intermediate hope's fears of human population increase and advances in technology overwhelm them and make them feel powerless to generate pathways or act to mitigate some sustainability challenges. They perceive that human population growth will lead to resource depletion and advancements in technology will provoke sustainability destruction.

Some children in this group mention that their participation in 'awareness' days has positively influenced their hope for the future. For instance, participant 21 said that their involvement in learning about women's rights as part of International Women's Day celebrations at school brought their attention to pathways to ameliorate societal biases that unfairly position women in society. As a result, they were inspired to share a video they made about inspiring women who have achieved academic, social, and physical successes and encourage others to act on gender issues.

6.6 Category 3: Emergent Hope for Our Future World

Table 6.4

Summary of Children's Conceptions of Emergent Hope for Our Future World

<i>Referential Elements</i> <i>(how children conceive emergent hope)</i>	Overview of children's capacities to conceive the 4 hope dimensions	Negative orientation to the future. However, generates multiple individual, communal, and political pathways to achieve sustainability goals. Lacks agency to act to achieve sustainability goals and trust in others to contribute to realising positive futures.
	Hope Dimension 1: Positive orientation to the future based on belief that sustainability goals can be met?	Resigned to challenges of pollution (water, air, and land); climate change; population increase; fewer natural spaces; animal extinction; space junk; lack of sustainability leadership at government level; crime (theft); advanced technology; bushfires; land clearing; more buildings, cities, houses, and factories; reliance on fossil fuels; traffic; unstable weather patterns; political instability; and disconnection from nature and viruses.
	Hope Dimension 2: Perceived pathways to achieve	Pathways to sustainability goals include: Reducing, reusing and recycling waste; spending time in nature to connect with it; providing more time at school for learning about sustainable living; joining sustainability clubs; fundraising; forming partnerships with other sustainability focussed organisations and people; composting; voting for leaders that punish behaviours which damage the environment; voting for leaders that increase punishments for

sustainability goals?	crime; providing more compost bins; increasing the price of plastic; reconnecting with nature; and providing natural spaces in high density locations.
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Hope Dimension 3: Perceived agency to achieve sustainability goals?	Agency to achieve sustainability goals include: Reducing, reusing, and recycling waste; picking up litter; spending time connecting to nature and composting.
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Hope Dimension 4: Trusts that others will act to achieve sustainability goals?	Lack trust in others to contribute to realising positive futures.
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<i>Structural Elements</i>	Focus	• Ecological, social, and economic issues of sustainability and generating pathways to mitigate such issues. • Resignation to degraded futures.
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<i>(why children conceive emergent hope)</i>	Background and Margin	Background: Experiences of” • degraded environments and natural disasters • advances in technology • human population increase Margin: Exposure to: • media (such as public service announcements)
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6.6.1 Children with Emergent Hope's Capacities to Conceive the Four Hope Dimensions

Children with emergent hope (Table 6.5) exhibit abilities to generate a wide range of individual, collective, and political pathways to address various economic, ecological, social, and political challenges associated with sustainability. They display a strong capacity for creative thinking and problem solving when it comes to envisioning potential solutions. However, despite their generation of pathways, children with emergent hope hold the belief that positive futures cannot be realised and therefore they fail to act. For example, participant 12 commented, "I could help by trying to help stop pollution and global warming by reducing, reusing, and recycling...I could do things like join a group project to try and fix problems together. I could raise money and do fundraising so I could help fix problems with nature when they happen. I don't think it's really useful for me to do those things though ... the planet will start dying and that will be very sad" (participant 12).

Children with emergent hope have little trust that others will act to create positive futures. Participant 18's comment exemplifies this sentiment: "I think some people will do stuff like pick up rubbish and try and make things better, but there will be more people so more rubbish and that will only work if everyone does the right thing, and most will probably be selfish, and they won't." This comment expresses doubt that people will actively engage in actions such as picking up rubbish. A lack of trust is a significant barrier to taking action towards creating positive futures. For instance, participant 7 commented: "There's no point me riding my bike and turning off lights if school leaves their lights on all weekend." This comment highlights that children need to believe that others are working with them towards the shared objective of realising sustainable futures if they are to act individually.

Children in this group also have little trust in governments to design and implement policies that support the creation and maintenance of sustainable environments. This leads them to absolve themselves of the responsibility to act to realise positive futures. For instance, participant 18 made the comment: ‘What’s the point of me doing anything about pollution and stuff if the prime minister just lets people get away with dumping their rubbish and getting rid of farmland and trees and animals?’ Participant 25’s drawing and comments below are representative of children in this category’s high pathways thinking, low agency and lack of trust in others to contribute to positive futures.

Figure 6.5

Pictorial Representation of Emergent Hope for Our Future World



Explanation of drawing: “I could reduce, reuse, recycle, fundraise, use less energy and those sorts of things, but I just try and recycle mainly because I think there’s no point because the earth will still end up looking a big mess like this anyway because other people probably won’t be bothered doing anything about it, the government doesn’t care and new technology will come and make it worse.”

Participant 25’s drawing and explanation reflect children in this category’s abilities to conceive clear pathways to favourable futures, coupled with a reluctance to enact them.

Participant 25 explains they do not enact their identified pathways to positive futures

because they are resigned to degraded futures on account of their doubt about others engagement, governmental efficacy, and the role technology plays. They lack trust in the wider community's commitment to environmental responsibility, doubt government involvement and concern involving sustainability issues and assume emerging technologies will exacerbate existing issues rather than contribute positively. Therefore, they feel their individual actions would be futile.

6.6.2 Why Children Conceive Emergent Hope for Our Future World

Focus

In this category, children focus on ecological, social, and economic issues of sustainability and generating pathways to mitigate them. They also focus on resignation to degraded futures. Their dual foci are evident in the participant 4's drawing and transcript excerpt and participant 12's interview transcript below:

Figure 6.6

Children with Emergent Hope's Focus on Sustainability Challenges and Pathways to Mitigate them Coupled with Resignation to Degraded Futures



Explanation of drawing: “I think the world will be like all cities and there will be lots of pollution and climate change because I think we’ll have more plastic and rubbish because there will be lots more people. There will be lots of gas in the air from the factories. In the ocean there will be lots of plastic and everything and different sea animals will be dying, and birds will be dying because of it too because they will choke on it. There will be less birds and trees in the future. There will be more people so the space will run out for birds and animals. The sun will still be there, but it will look bigger because plastic will get put into space and there will be heaps of space junk and it will make the sun will look bigger. I think the world will be worse because there will be less trees and grass and everything and more pollution in the air and on the ground. It makes me feel sad that there won’t be any animals, nature, or birds. I wouldn’t be happy to live in the world that I think will happen when I’m an adult. I’d prefer it to be like it is right now. We need to not litter and not pollute, join clean up groups, and make good choices in how we live, mainly that’s what we need to do. Also, if you spend more time in nature, you appreciate it more and you might look after it more. I try not to pollute, and I try to be outside to be healthy and appreciate nature because you can’t be inside all the time not being in nature. I think people will do something about the world’s problems in the future, but I don’t think it will stop the problems from growing. I don’t think it’s anybody’s fault that the world will be worse, well not one person, I just think there will be too many people that don’t do the right thing and there’s nothing we can do about that” (participant 4)

“I could help by trying to help stop pollution and global warming by reducing, reusing, and recycling. I know there are other ways to help stop global warming, but I’ve forgot. They could teach me more at school. I could do things like join a group project to try and fix problems together. I could raise money and do fundraising so I could help fix problems with nature when they happen. I don’t think it’s really useful for me to do those things though because I think in the future that they’ll make the cities bigger for people to live and they’ll cut down trees and that will ruin animals’ habitats and then animals will be lacking and no trees and nature for people to enjoy and then the planet will start dying and that will be very sad” (participant 12).

Participants 4 and 12 focus on identifying issues of sustainability and ways to mitigate them and resignation to degraded futures. To illustrate, participant 12 identifies pollution as a challenge for future environments and proposes many ways to alleviate its impacts such as reducing, reusing, and recycling. However, they also express resignation to degraded futures on account of population increase. Together, participant 4 and 12’s statements reveal a mix of personal agency in wanting to make positive changes alongside apprehension about larger-scale forces working against sustainability goals. Participant 4

and 12's comments also demonstrate deep emotional engagement with sustainability issues in how they express sadness about potential future environmental demise.

Background and Margins

In this category, children's hope for the future is positively influenced by their personal experiences of degraded environments and natural disasters and their geographic contexts. Their hope is negatively influenced by their experiences of advances in technology, human population increase and lack of trust in others to contribute to realising positive outcomes:

"Well, there's a big problem with climate change because we're having more disasters. Like there was lots of smoke near us a while ago because of bushfires in Victoria because we're using too much plastic and burning coal. At home now we reduce how much plastic we use by using brown paper bags at the supermarket and stopping buying so much rubbish plastic toys that make a big mess and get broken easily so we don't harm the beautiful nature that is where we live. There's also a big problem with animals becoming extinct. I think that's mainly because there's lots and lots of people and there keeps getting more and more and we keep clearing land and making smaller and smaller houses that are all squished in together with no land left between them, not even little bits of grass. We're also getting bigger buses to fit everyone in and lots more cars, it takes so long for my parents to get work because of all the cars and then they make more roads because of all the extra traffic and then there's no natural things left, and animals need nature like grass and trees to survive and because there's too many people it's being taken away. Soon all the nature and animals will be gone...With all those people and lots not thinking about the earth it's out of my hands. (participant 8)."

Participant 8's personal experience of bushfire smoke has positively influenced their hope for the future. This firsthand encounter has heightened their awareness of climate change as a significant challenge. As a result, they have actively sought out pathways to mitigate its effects and acted accordingly. This finding suggests that climate concern can positively influence engagement. On the other hand, Participant 8's experience of the impacts of human population increases on natural landscapes, housing density, road traffic

and biodiversity has negatively influenced their hope. They believe that future population increases will make sustainable futures impossible. Consequently, they feel discouraged from taking action to create desirable outcomes.

Children's conceptions of emergent hope for the future are also influenced by media, including public service announcements. For instance, participant 13 made the comment, "they said today another 14 people died from the Coronavirus (Covid-19). They said it's because people are selfish. The world can never be nice, because people don't care about other people even if they die." Hearing this public announcement lessened their hope because it made them feel that a kind and caring world is unattainable because individuals do not prioritise the wellbeing of others, even in life threatening situations.

6.7 Category 4: Limited Hope for Our Future World

Table 6.5

Summary of Children's Conceptions of Limited Hope for Our Future World

<i>Referential Elements</i> <i>(How children conceive limited hope)</i>	Overview of children's capacities to conceive the 4 hope dimensions	Conceive many insurmountable ecological, social, and economic issues of sustainability. Do not generate pathways or enact agency to mitigate sustainability challenges and do not trust others to act.
	Hope Dimension 1: Positive orientation to the future based on belief that sustainability goals can be met?	Perceive insurmountable challenges of sustainability disasters (tsunamis, bushfires, meteors); pollution (water, air, and land); viruses; decreased natural spaces; economic greed; social unrest (wars, bombs); continued reliance of plastic and coal; loss of biodiversity (trees and animals); increase in population density (houses close together, more traffic); more buildings; increase in living costs; lack of food and water; animal extinction; human sickness; a darker sky and increased fighting amongst people over resources.
	Hope Dimension 2: Perceived pathways to achieve sustainability goals?	No

	Hope Dimension 3: Perceived agency to achieve sustainability goals?	No
	Hope Dimension 4: Trusts that others will act to achieve sustainability goals?	Do not trust others to mitigate sustainability challenges. Expect others to degrade environments.
<i>Structural Elements</i>	Focus	• Ecological, social, and economic issues of sustainability. • Emotions of fear, anger, sadness, and despair.
<i>(why children conceive limited hope)</i>	Background and Margin	Background: Experiences of: • reduced natural landscapes • increased living costs • Covid-19 • human population increases Margin: Experiences of: • media (such as public service announcements)

6.7.1 Children with Limited Hope's Capacities to Conceive the Four Hope Dimensions

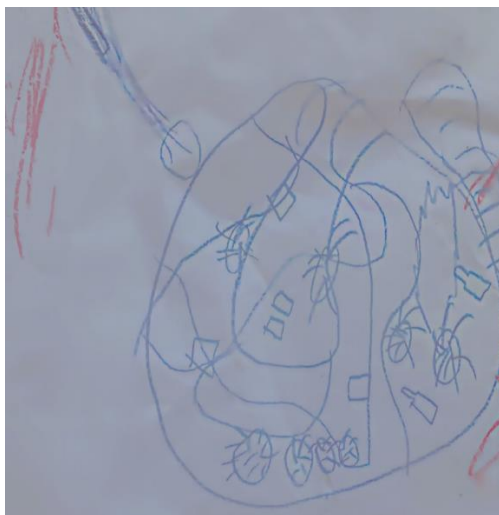
Children who have limited (Table 6.5) hope for our future world perceive apocalyptic-type futures characterised by numerous ecological, social, and economic issues. They express a sense of resignation towards these issues and struggle to generate pathways to mitigate them due to being overwhelmed by the scale of the issues. For instance, participant 20 made the comment, “No, I don’t think there’s anything that can help with how big the problems are”; participant 6 commented, “There’s no trees or animals [in the future] but I don’t know how we could make that better”; and participant 2 stated “I’m not sure what could be done to help with the ozone layer or pollution or there being extra people except finding more planets.” Such comments portray how children in this category believe that sustainability problems are insurmountable, leading to a sense of hopelessness.

Children represented by this category do not act to mitigate the future challenges of sustainability that they anticipate because they do not have confidence in the effectiveness of their participation, and they doubt their capacities to become involved. This is evident in comments such as, “Well, I’m just a kid. No one is going to listen to me. I don’t think there’s anything that I can do. I don’t think there’s anything I could to make the world better in the future” (participant, 20); and “I can’t stop any of these problems because I’m just a kid and I’m too small” (participant, 15). These comments indicate that children without hope believe that their actions will not have an impact on creating positive futures which leads them to feel dismissed from conversations around sustainability on account of their age. Their perception of being powerless hinders their motivation for engagement. They perceive themselves as lacking agency and influence, which discourages them from actively participating in efforts towards sustainable change.

Participant 1's drawing and transcript is representative of children in this group's incapacities to conceive the four hope dimensions. This is because they reflect an inability to generate pathways to positive futures, resignation to 'the end of the world' and a lack of trust in others to contribute to the creation of sustainable futures: "there will be pollution because people don't clean up" and "people will take away all the farmland to build houses to make themselves rich."

Figure 6.7

Pictorial Representation of Limited Hope for Our Future World



Explanation of drawing: "I've drawn the end of the world, there is lots of tsunamis, meteors, and there's fire all over the world and people are sick and it's terrifying. There's lots of bushfires and there's lots of pollution and viruses. There will be bushfires because they're pretty common now and the news said there will be even more than there are now and pollution because people don't clean up. I think this is how the world will be, and I can't do anything about that. Hopefully people will help but I think they won't because they'll just take away all the farmland and nature so that they can build houses and stuff to make themselves rich."

Children in this category expect that in the future, most people will degrade environments for their own individual benefit and hoard Earth's natural resources for themselves. For instance, participant 15 made the comment, "Lots of people are selfish and

they just don't really care, just about themselves getting money, so they'll build more houses." In addition, participant 20 stated, "There probably won't be much water or food so people will store as much as they can and leave none for anyone else. I'll have a big tank so I can put lots of water in and a room to put food in, so I don't run out." Participant 20's comment expresses that due to their belief that others will put their self-interests above sustainability concerns; they adopt that same mind-set.

6.7.2 Why Children Conceive Limited Hope for Our Future World

Focus

Children with limited hope for the future focus on ecological, economic, and social issues of sustainability and emotions of fear, anger, sadness, and despair when imagining the future world. Such foci are evident in the following interview excerpts:

"The future is petrifying. There won't be much farmland because there will be more houses and they'll all be squished in together. Due to even worse climate change, it will be darker and colder. Everything will cost more, it will be really expensive, even more than now and that's really bad. The world will be more polluted. There won't be trees or plants, there will be lots of smoke and no spare land. Because there will be climate change and fires it will be darker so people won't be as happy and then they will fight more" (participant, 2).

"I drew three planets instead of one because population will go up a lot, there will be lots more people, like there's been lots more already you can notice when it takes so long to drive to school or get a carpark at the shops. That's the only way people can survive (three planets) because there'll be nowhere for people to go because there won't be any room or food, or water and we'll get sick. There will be no forests or animals because it will get torn down for houses and that's really sad" (participant, 6).

"I feel scared. I really am not looking forward to living in the future. At the moment the world is a little bit trashed. In the future it is more trashed, there is more rubbish. There will be wars and bombs. We'll have to find more planets because this one will be wrecked" (participant 15).

"I don't really think there's anything that can be done about it now. I think that everything is so much worse in the future, and I don't really know of anything that would be good enough to stop it now. I feel angry and annoyed that nothing was done

to stop it a long time ago. We've known about how bad plastic and coal is for a long time, but nothing's been done and now it's too late" (participant 20).

"I think it will cost \$10,000 for a block of chocolate or a hundred thousand to stay in a hotel. Most people will have no money and they'll be starving and living at rubbish dumps. There will be no nature, animals, or trees except in a place in Africa which is one percent of the world and that is where all the worlds nature will be, and rich people will go there to visit for holidays" (participant 22).

Collectively, participants 2, 6, 15, 20 and 22 foresee a wide range of ecological, economic, and social issues in the future that they feel resigned to. These include loss of natural landscapes, climate change, loss of biodiversity, pollution, increased living costs and wars. Children's focus on these issues overwhelms them and leaves them unable to generate and enact pathways to mitigate them. In this way, awareness of challenges of sustainability without awareness of pathways to mitigate them leads children to experience hopelessness for futures.

Children in this group feel frightened, angry, sad, and despondent about the future world. They express that they are "scared" and "petrified" of the future; "angry" at older generations inaction on issues of sustainability; "sad" that there won't be any trees or animals and overwhelmed by the scale of sustainability challenges that they anticipate. These feelings paralyse their hope for the future, leaving them unable to generate pathways to positive futures. For instance, participant 2 made the comment, "nothing's been done about it and now it's too late... I definitely can't do anything. I'm just a kid."

Background and Margins

There are four background influences on why children conceive limited hope for future world and one margin influence. The four background influences on children's conceptions of limited hope are their experiences of reduced natural landscapes, increased

living costs, Covid-19 and human population increases. Children's experiences of media are a lesser influence.

Children's experiences of reduced natural landscapes and increased living costs are major influences on their feelings of hopelessness about the future. This is because they expect those issues to continue in the future and they cannot conceive pathways to alleviate them. For instance, participant 2 made the comments:

"There won't be much farmland because there will keep being more houses and they'll all be squished in together even more than now. There was lots of farmland here when I was in prep but now, I'm in grade 5 and there's not much left ... Everything will cost more, it will be really expensive, even more than now and that's really bad. Everything keeps going up and up and up... food, swimming lessons, clothes, petrol and houses and stuff."

Participant 2's comments express concern over diminishing farmland due to ongoing urbanisation that they have experienced over several years. Additionally, they express worry about escalating costs across various aspects of life and affordability into the future.

Children's experiences of Covid-19, particularly their experiences of 'lockdowns', significantly influence their hope for futures. These experiences have shaped their expectations of further lockdowns that negatively impact their quality of life. As a result, they struggle to conceive positive futures and feel powerless in mitigating challenges:

Participant's 6 comment provides insight into this perspective:

"I couldn't see my friends, go to school, go to the park anywhere more than 5klms from my house. It was about two years. Well not 2 years the whole time, but most of it. It wasn't good. There will probably be worse viruses in the future, so I'll probably lose more life."

Participant 6's comment expresses the difficulties children faced during lockdowns. The prolonged duration of the restrictions created an extended period where children felt

isolated and restricted. This informs their expectations that similar situations may arise again in future due to new viruses.

Experiences of media also negatively impact children in this category's hope for the future. To illustrate, participant 6 made the comment, "they say on the news there are probably even worse viruses coming. That's scary because things are bad now and we have no idea how to make them better. So, things will be even worse with viruses when I'm an adult." In this way, media statements that alert children to the seriousness of sustainability challenges without providing pathways or actions to mitigate them damages children's hope for the future.

6.8 Category 5: Uncritical Hope for Our Future World

Table 6.6

Summary of Children's Conceptions of Uncritical Hope for Our Future World

<i>Referential Elements</i> <i>(How children conceive uncritical hope)</i>	Overview of children's capacities to conceive the 4 hope dimensions	Do not perceive future sustainability challenges. Believe that current economic, ecological, and social challenges will be solved through technology or spiritual intervention. Do not generate or act on pathways to realise sustainable futures. Trust in spiritual intervention and/or technology to create utopian futures.
	Hope Dimension 1: Positive orientation to the future based on belief that sustainability goals can be met?	Conceive current sustainability challenges will be solved by advances in technology or spiritual intervention.
	Hope Dimension 2: Perceived pathways to achieve	Technology and spiritual intervention.

sustainability
goals?
Hope Dimension No.
3:
Perceived
agency to
achieve
sustainability
goals?

Hope Dimension Trust in spiritual intervention or technology to solve sustainability challenges.
4:
Trusts that
others will act
to achieve
sustainability
goals?

<i>Structural Elements</i>	Focus	• Current social, ecological, and economic issues of sustainability. • Technology or spiritual intervention as solving challenges of sustainability.
<i>(why children conceive uncritical hope)</i>	Background and Margin	Background: Experiences of: • advances in technology • religion Margin: Experiences of: • gaming

6.8.1 Children with Uncritical Hope's Capacities to Conceive the Four Hope Dimensions

Children in this group (Table 6.6) do not perceive future challenges of sustainability. This is because they believe that current ecological, social, and economic issues will be solved through advances in technology or spiritual intervention. For example, participant 10 made the comment, “machines will get rid of plastic in the future to help with pollution”; and participant 14 made the remark, “Jesus will make people be nice to each other.” Children’s belief that current challenges of sustainability will be overcome without them needing to generate pathways or act to overcome them means that they have uncritical hope for the future, not hope.

Participant 10’s drawing and transcript (Figure 6.8) represent children who have uncritical hope for our future world’s capacities to perceive the four hope dimensions. This is because they convey children in this group’s confidence that positive futures will eventuate independent of their role in creating them.

Figure 6.8

Pictorial Representation of Uncritical Hope for Our Future World



Explanation of drawing: “I drew different cars that will be a flying type because we’ll be more eco-friendly in the future by using flying cars that use a type of plant that provides energy and doesn’t harm the environment. At the moment, cars use fuel, and fuel puts out smoke and it hurts the environment. I think the weather will be similar because we will put special things down so that tsunamis can’t happen. Like if there are tsunamis and natural disasters, we will have a force field to protect us from them. I drew a beehive which makes special types of honey. There will be robot bees in the future that make lots of different yummy types so honey will taste better in the future and there will be enough bees. I think there will be more people in the future, but there will be enough space for everyone because technology will help with those problems. I drew a digital screen because at the moment we can’t build quick enough for everyone, but in the future, we could draw a map with a finger or make blueprints on a digital screen that will tell us where to build and help us build it quickly so that people have houses quickly and space and there will be enough houses for everyone. At the moment there are dangerous sicknesses that are killing people, but in the future, we’ll be able to create new medicine with robots. I don’t think we’ll have problems in the future I think it will be better because tech is getting so good. There’s a problem at the moment with crime like houses being broken into but we’ll solve those problems with technology. Like people will be watched by cameras and robots will come and stop crime and put people in jail. There’s also a problem with pollution and I think we’ll stop it by putting it all together in a certain amount of land and stopping it spreading. At the moment we fight with each other and other countries because there’s not enough stuff, but I think we’ll get along with other countries in the future. There will be no wars because there will be enough space and things thanks to technology and then we won’t have to argue. I would definitely prefer to live in the future than in the current world. I don’t really think I have to do anything to make the future world nicer because I think tech will make it better.” (participant 10).

Participant 10’s statement is representative of the category of uncritical hope for our future world because it relays a positive outlook for futures based on external solutions. In participant 10’s case, their positive outlook for the future stems from their belief that ongoing technological advancements will solve various challenges affecting society today. For instance, they conceive advancing technologies will solve challenges associated with fuel-powered vehicles, environmental disasters, bee populations, housing shortages, human sickness, crime-rates, pollution, and global conflicts.

6.8.2 Why Children Conceive Uncritical Hope for Our Future World

In this group, children focus on ecological, social, and economic issues of sustainability and technological advances or spiritual intervention as solving those issues when imagining futures. For instance, participant 28 made the comment, “the world is not a nice place to live now but it will be in the future because technology can do things like find us another planet.” Participant 14 commented, “I think Jesus will look after nature and the world and that will make it better than it is right now.” Children’s comments demonstrate their confidence that sustainability challenges will be solved without them needing to act to create them.

Children’s experiences of advances in technology and religion influence their uncritical hope for the future. For instance, participant 10 made the comment, “I don’t think we’ll have problems in the future. I think it will be better because tech is getting so good.” Participant 14 said, “Jesus came before to save people, and he will come again and make it nice.” Participant 10’s comment demonstrates that they have experienced vast technological advances in their lifetime, and they expect further advances to solve current sustainability challenges. Participant 14’s experiences of religion has facilitated their conviction that Jesus has saved humanity before and will do so again.

Children’s assumptions that the future will be a positive place on account of technology or spiritual intervention hinders their motivation to strategise pathways and act to realise sustainable environments. This mindset stems from the belief that their individual efforts may not be necessary or impactful. For instance, participant 28 made the comment, “I could stop using plastic but I think there will be something that makes plastic disappear in the future so I don’t think it will be a big problem.” Comments such as these express a lack

of concern about sustainability challenges based on assumptions that personal actions are unnecessary since technology or spiritual forces will handle the problem, leading to complacency and an unwillingness to actively engage in ameliorating sustainability issues.

Children's gaming experiences also inform their uncritical hope. In evidence, participant 28 made the comment, "I build worlds that I like on Minecraft. In the future, we'll be able to make a real world on a game like Minecraft without problems." Their comment demonstrates that their gaming experiences have led them to expect that technology will create utopian futures. This expectation is damaging to their hope for the future because it stops them from considering their own role in creating and maintaining positive future environments, such as generating pathways or acting to mitigate sustainability challenges.

6.9 Conclusion

This chapter has presented the empirical findings addressing the first two research questions: How do children conceive hope for our future world and What factors influence how children conceive hope for our future world? The categories were hierarchically ordered in levels of hope according to the four hope dimensions. The results revealed that children conceive hope in five distinct categories of ways. This was evident through children's outlooks for the future, and their abilities to generate and enact pathways to favourable futures. The factors that influenced children's hope in each category was thoroughly explicated. In the subsequent chapter, I present the outcome space of children's conceptions of hope for our future world to answer the third research question: What are variations in children's hope for our future world?

Chapter Seven: The Outcome Space of Children's Hope for Our Future World

In this chapter, I introduce the outcome space of children's hope for our future world. As described in Chapter 4, the outcome space is a "map of a territory" (Säljö, 1988, p. 44) that illustrates variation in how a group of people conceive a particular phenomenon. The outcome space in this study provides understanding about the complex landscape of children's hopes and their influences. It is a summary table that depicts the total categories of ways in which children conceive hope for our future world and the influences on those diverse ways; thereby highlighting relationships and variations between different levels of understanding, perspectives, and approaches towards hopeful thinking. Furthermore, the outcome space (Table 7.1) highlights specific aspects that limit children's hope within in each hope category, providing direction for planning targeted and inclusive learning experiences to nurture and develop more hopeful mindsets. Accordingly, the presentation of the outcome space aligns with addressing research question three:

3. What are variations in children's conceptions of hope for our future world?

7.1 Presentation of The Outcome Space

I present the outcome space in a hierarchical format, where categories are arranged from left to right based on the progression of children's conceptions of hope for our future world, that is, the referential aspects of their conceptions. As described in Chapter 4 the referential elements are:

- positive orientation to the future world based on belief that sustainability goals can be met
- perceived pathways to achieve sustainability goals

- perceived agency to achieve sustainability goals
- trust that others will act to achieve sustainability goals

The placement of the categories within the hierarchy is determined by the children in each group's capacities to conceive the four hope dimensions. This arrangement provides insight into how children's conceptions of hope expand and become more impactful on their sustainability engagement as they move from lower to higher categories. To visually represent this progression, I use red, orange, and green colours to depict a continuum representing increasingly powerful types of hope. If children do not conceive a specific hope dimension, the corresponding box in the outcome space is coloured red. If their hope reflects some aspects of that dimension, it is coloured orange. Finally, if children comprehensively conceive that dimension, it is coloured green. It is important to note that even within each colour group (red/orange/green), there are variations in capacities to conceive dimensions. In such cases, the categories on the right subsume the categories on their left.

As well as portraying variation between the ways children in each category conceive hope (the referential elements of their conceptions), the outcome space also depicts variation in why children conceive hope in particular ways (the structural elements of their conceptions). Recall from chapter 4, the structural elements include focus, background, and margin aspects. Focus refers to what children primarily concentrate on when conceiving hope for our future world. Background and margins are the personal experiences that children describe as influencing their hope.

7.2 The Outcome Space of Children's Hope for our Future World

Table 7.1

The Outcome Space of Children's Conceptions of Hope for Our Future World

		<i>Category 5 Uncritical hope for our future world</i>	<i>Category 4 Limited hope for our future world</i>	<i>Category 3 Emergent hope for our future world</i>	<i>Category 2 Intermediate hope for our future world</i>	<i>Category 1 Expansive hope for our future world</i>
<i>Referential Elements</i>	<i>Hope Dimension 1</i>	Positive outlook based on belief that current ecological, social and economic challenges will be solved independently of oneself.	Negative outlook based on conceptions of insurmountable ecological, social and economic challenges.	Negative outlook based on conceptions of insurmountable ecological, social and economic challenges.	Mixed outlook based on belief that some ecological, social and economic goals can be achieved, but that some challenges are insurmountable.	Positive outlook based on belief that a range of ecological, social, and economic goals can be achieved.
	<i>How children conceive hope for our future world?</i>	Positive orientation to future based on belief that sustainability goals can be met?				
	<i>Hope Dimension 2</i>	External pathways of technology and spiritual intervention.	Cannot conceive pathways to mitigate challenges.	Conceives many individual, collective, and political pathways (15 total) to achieve sustainability goals.	Conceives many individual, collective, and political pathways (18 total) to achieve sustainability goals.	Conceives many leadership, individual, collective, and political pathways (28 total) to achieve sustainability goals.
	<i>Perceived pathways to achieve sustainability goals?</i>					

	<i>Hope Dimension 3</i> Perceived agency to achieve sustainability goals?	No.	Does little to act for sustainable futures (pick up rubbish only).	Enacts some individual (5 total) pathways to achieve sustainability goals.	Enacts some individual and collective pathways (9 total) to achieve sustainability goals.	Enacts leadership, individual and collective pathways (13 total) to achieve sustainability goals.
	<i>Hope Dimension 4</i> Trust that others will act to achieve sustainability goals?	Trust in spiritual intervention or technology to solve sustainability challenges.	No trust in others to contribute to realising positive futures. Expects others to degrade environments.	Little trust in others to contribute to realising positive futures.	Trust that most friends, family, and community members will act to realise positive futures. Do not trust governments to act.	Trust that friends, family, most of the general community and politicians will act.
<i>Structural Elements</i> <i>Why children conceive various forms of hope</i>	<i>Focus</i> (What children focus on when conceiving hope for the future world)	Ecological, social and economic challenges. Technology or spiritual intervention solving challenges; utopian futures.	Ecological, social, and economic challenges. Fear, anger, sadness, and despair.	Ecological, social, and economic challenges. Generating pathways to mitigate challenges. Resignation to degraded futures.	Ecological, social, and economic challenges. Generating and enacting pathways to mitigate challenges. Resignation to some challenges.	Ecological, social, and economic challenges. Generating and enacting pathways to mitigate challenges.
	<i>Background and Margin Experiences</i> (What influences	Background Experiences of: Advancements in technology. Religion. Margin:	Background Experiences of: Increased living costs. Reduced natural environments. Covid-19.	Background Experiences of: Degraded environments. Sustainability disasters.	Background Experiences of: School and home. Advanced technology. Human population increases.	Background Experiences of: School and home. Engaging in or hearing about successful

children's
hope)

Gaming.

Human population
increases.
Margin:
Media.

Advancements in
technology.
Human population
increases.
Margin:
Media (public service
announcements).

Engaging in or hearing
about successful
actions for
sustainability.
Margin:
Awareness days, i.e.,
International
Women's Day.

actions for
sustainability.
Margin:
Artworks.

The outcome space represents a continuum of hope leading to greater sustainability engagement. It does not provide detailed information about the specific sustainability goals that children in each group conceive as achievable, or the specific perceived pathways they generate and their perceived capacities to enact them. Instead, the outcome space provides an overview, illustrating the types of goals children conceive as possible, and the types and number of pathways they perceive to realise them and their perceived agency to accomplish them. For more detailed information regarding individual hope categories see Chapter 6.

7.3 Variation in How Children Conceive Hope for Our Future World

7.3.1. Variation in Hope Dimension One: Positive Orientation to Future Based on Belief That Sustainability Goals can be Achieved

As depicted by the outcome space (7.1), there is variation in children's capacities to conceive positive orientations to the future based on conceptions that ecological, social, and economic goals can be achieved with their involvement. A shift is observed across the spectrum, moving from children with uncritical hope's expectation that goals will be achieved independently of one's role in addressing them, to an inability to perceive goals can be achieved (limited and emergent hope), to conceiving that some goals can be achieved with personal involvement (intermediate), and finally believing that several goals relating to ecological, social and economic challenges can be achieved with personal involvement (expansive hope). The shift in capacities to conceive that sustainability goals can be achieved with personal involvement reflects differences in how children perceive current challenges of sustainability: as extraneous to ones-self (uncritical hope), as immovable roadblocks to sustainable futures (limited and emergent hope) or as obstacles that can be alleviated (intermediate and expansive hope). In other words, children with

uncritical hope conceive that they do not need to take action to realise sustainability goals, children with limited and emergent hope feel powerless to realise goals, while children with intermediate and expansive hope have confidence in their ability to contribute positively to achieving goals. This variation in outlook is evident in children's own words. For example, a child with expansive hope (participant 11) expressed: "I think problems with the world can get better...I can do things to make problems better too"; demonstrating a positive outlook and belief that sustainability challenges can be overcome through personal action. In contrast, a child with limited hope (participant 20) stated: "Well, I'm just a kid. No one is going to listen to me. I don't think there's anything that I can do. I don't think there's anything I could do to make the world better in the future"; reflecting a sense of powerlessness and inability to effect positive change. In this way, the outcome space highlights a shifting of children's future outlooks from passive observers to resigned individuals to empowered individuals who recognise their role in forging positive futures.

7.3.2 Variation in Hope Dimension Two: Perceived Pathways to Sustainability Goals

Children from limited to expansive hope (Categories 4 through 1) exhibit increasing capacities to perceive pathways to achieve sustainability goals. This is evident in the number and types of pathways that they distinguish. For instance, children with limited hope cannot conceive any pathways to sustainability goals, while those with emergent and intermediate hope identify several individual, collective, and political pathways. Children with expansive hope demonstrate the greatest level of proficiency by generating the greatest number of pathways encompassing individual, collective, political and leadership approaches. This continuum highlights a progression of abilities for generating multiple and effective ways to

achieve sustainability goals. It reflects a growing capacity to think critically about various strategies towards positive change.

7.3.3 Variation in Hope Dimension Three: Perceived Agency to Achieve Sustainability Goals

A continuum of capacities to act to achieve sustainability goals is evident across the different hope types. This can be seen through the increasing number and types of actions that children from expansive hope to uncritical hope enact. Children with uncritical hope do not take action to accomplish goals. Children with limited and emergent hope engage in a small number of individual actions. Children with intermediate hope participate in numerous individual and collective actions. Finally, children with expansive hope are involved in the most extensive range of actions across individual, collective and leadership levels. Variation in the types of actions that children enact to realise sustainability goals reflects the roles that children assume to shape positive futures. For example:

4. Children with uncritical hope do not assume a role.
5. Children with limited and emergent hope assume a small individual role.
6. Children with intermediate hope assume an individual and a community role.
7. Children with expansive hope assume an individual, collective and leadership role.

This progression illustrates how children transition from taking no role to substantial roles when it comes to working towards realising sustainability goals.

7.3.4 Variation in Hope Dimension Four: Trust in Others to Work Towards Sustainability Goals

A spectrum of capacities to trust others to work towards achieving sustainability goals across the categories is evident in the outcome space. This spectrum represents varying

degrees of trust in different groups of people. Children with limited hope have no trust in others to work towards accomplishing sustainability goals. Children with emergent hope have some level of trust but still hold the belief that most people will not contribute. Children with intermediate hope demonstrate more trust and confidence in specific groups such as friends, family, and the general community. Finally, children with expansive hope exhibit the highest level of trust as they rely on their friends, family, and the general community, and extend their trust towards politicians. These children perceive politicians as potential agents for enacting changes leading to the achievement of sustainability goals such as financial incentives for using environmentally friendly energy sources.

As depicted by the outcome space, children's capacities to trust are in step with their abilities to demonstrate the first three hope dimensions. Greater capacities to trust are associated with advanced abilities to perceive that sustainability goals can be achieved and greater faculties to generate pathways and act to reach them. This demonstrates that trust in others is critical to hope for our future world.

7.4 Variation in What Influences Children to Conceive More or Less Powerful Forms of Hope Regarding Impact on Sustainability Engagement

7.4.1 Variation in Focus

When conceiving hope for our future world, the outcome space (Table 7.1) depicts that all children focus on ecological, social, and economic challenges. This demonstrates that all children are aware of the types of challenges that pose threats to futures. Variation in children's levels of hope lie in what they also direct their attentions to. Children with uncritical hope focus on expecting challenges to be solved on account of technology or spiritual intervention. Children with limited hope are overwhelmed by feelings of fear,

anger, sadness, and despair when considering challenges. Children with emergent and intermediate hope focus on planning and acting to mitigate some sustainability challenges while resigning themselves to others. Children with expansive hope focus on generating pathways and acting to mitigate all future sustainability challenges that they perceive.

7.4.2 Variation in Background and Margin Aspects

The outcome space relays a range of background and margin aspects that influence children's conceptions of hope. These factors can have both positive and negative influences on hope, and in some cases exert a combination of both effects. For instance, experiences of degraded environments can influence hope in positive and negative ways. Children with limited and emergent hope are resigned to ongoing environmental degradation as they project their current experiences into expected patterns of degradation into the future (negative influence). Meanwhile, children with intermediate hope are motivated to take action to remedy degraded environments because their experiences alert them to the urgency and reality of the situation. Table 7.2 presents a detailed overview of the different factors that influence children's conceptions in each category, including whether they have a positive or negative impact (plus symbol indicates positive influence/minus symbol indicates negative influence).

Table 7.2*Influences on Children's Conceptions of Hope*

	Uncritical Hope	Limited Hope	Emergent Hope	Intermediate Hope	Expansive Hope
Advancements in Technology	–		–	–	
Gaming	–				
Population Increase		–	–	–	
Degraded Environments	–	–	+		
Increased Cost Living		–			
Covid-19 Pandemic		–			
Media (news)		–	–		
Artwork					+
Participation Awareness Days				+	
School				+	+
Home				+	+
Geographic Context			+		
Success in mitigating or hearing about others success mitigating sustainability challenges				+	+

* + = positive influence, – = negative influence

Table 7.2 shows that collectively, children's experiences of advancements in technology and human population increase are the most negative influences on their conceptions of hope for our future world. Children in different categories perceive these factors as responsible for current issues such as degraded ecological environments and increased living costs. They also predict that future advancements in technology and/or increases in population will exacerbate current problems related to ecological degradation, biodiversity loss and climate change, resource scarcity (food, water, and housing) and conflicts over these resources. These negative perceptions of technology and population growth have detrimental impacts on children's hope. For instance, where children perceive favourable futures are impossible due to technological advancements or population growth, their motivation to generate pathways or act towards achieving sustainability goals is dampened (limited and emergent hope). On the other hand, when children hold an unrealistic belief that technological advancements alone can solve all current sustainability challenges (uncritical hope). This fosters apathy rather than motivating them to actively engage with sustainability issues. For instance, participant 10 commented, "I don't really think I have to do anything to make the future world nicer because I think tech will make it better."

The most positive influences on children's conceptions of hope for our future world are their home and school experiences, and their experiences of successfully mitigating or hearing about others mitigating current sustainability challenges. Children with higher levels of hope, that is children with intermediate and expansive hope, report that their hope is most powerfully developed when they:

1. Are engaged in learning about sustainability challenges at school or home and are assisted to create clear goals to mitigate them.
2. Are encouraged to work collaboratively to generate pathways to attain identified goals.
3. Are encouraged to act on the pathways that they have been involved in generating.
4. Personally experience or hear about others' success in achieving sustainability goals.

At home and school, children with intermediate and expansive hope are engaged in learning about sustainability challenges and are supported to set clear goals to ameliorate them. For example, participant 9 made the comment, "My mum talked to me about climate change and how it ruins the Earth by changing the weather and making more bad things like bushfires. She said that we can help by stopping using so much electricity. We decided not to use the clothes dryer as much. We used to use it a lot but now I help her put the washing on the line." In this way, at home, participant 9 learned about climate change and the impact it has on the environment leading to a specific goal of reducing energy consumption by using the clothes dryer less frequently.

Furthermore, in home and school settings, children in the higher hope categories (intermediate and expansive hope) engage in discussions about barriers to achieving sustainability goals and pathways to realise them. For instance, participant 9 explained that they learnt at school that habitat loss and insufficient funds for a breeding program pose challenges to saving an endangered species: the eastern bandicoot. Collectively with the class, they discussed barriers to mitigating habitat loss and insufficient funds for a breeding program and collaboratively generated viable pathways to protect the bandicoot: holding a

fundraising day, raising awareness about the bandicoot's endangerment status in the school newsletter and working in partnership with other schools to raise money.

Children with higher levels of hope (intermediate and expansive hope) are also encouraged to act collectively on pathways to achieve sustainability goals by their teachers and guardians. For instance, participant 23 mentioned "there is a community garden club where lots of people work together to grow food for homeless people in St Kilda. Mum says we should go every month. I'll probably keep doing it forever because it helps hungry people get something to eat when lots of people help." Their comment demonstrates that they were encouraged by their mother to act on the pathway of ongoing collective involvement in the community garden to address hunger issues.

Children with expansive hope report that achieving their sustainability goals and hearing about others' success increases their hope. For instance, participant 9 was motivated to join their school sustainability club to reduce waste at their school after they were involved in successfully mitigating the effects of sand dune erosion on local wildlife with their mother. In this way, their success in achieving one sustainability goal reinforced the goal setting-pathways-agency relationship for them and led them to engage in further sustainability goal setting.

A visual representation of what influences children to conceive expansive hope is depicted in Figure 7.1.

Figure 7.1

How Children Develop Expansive Hope Conceptions

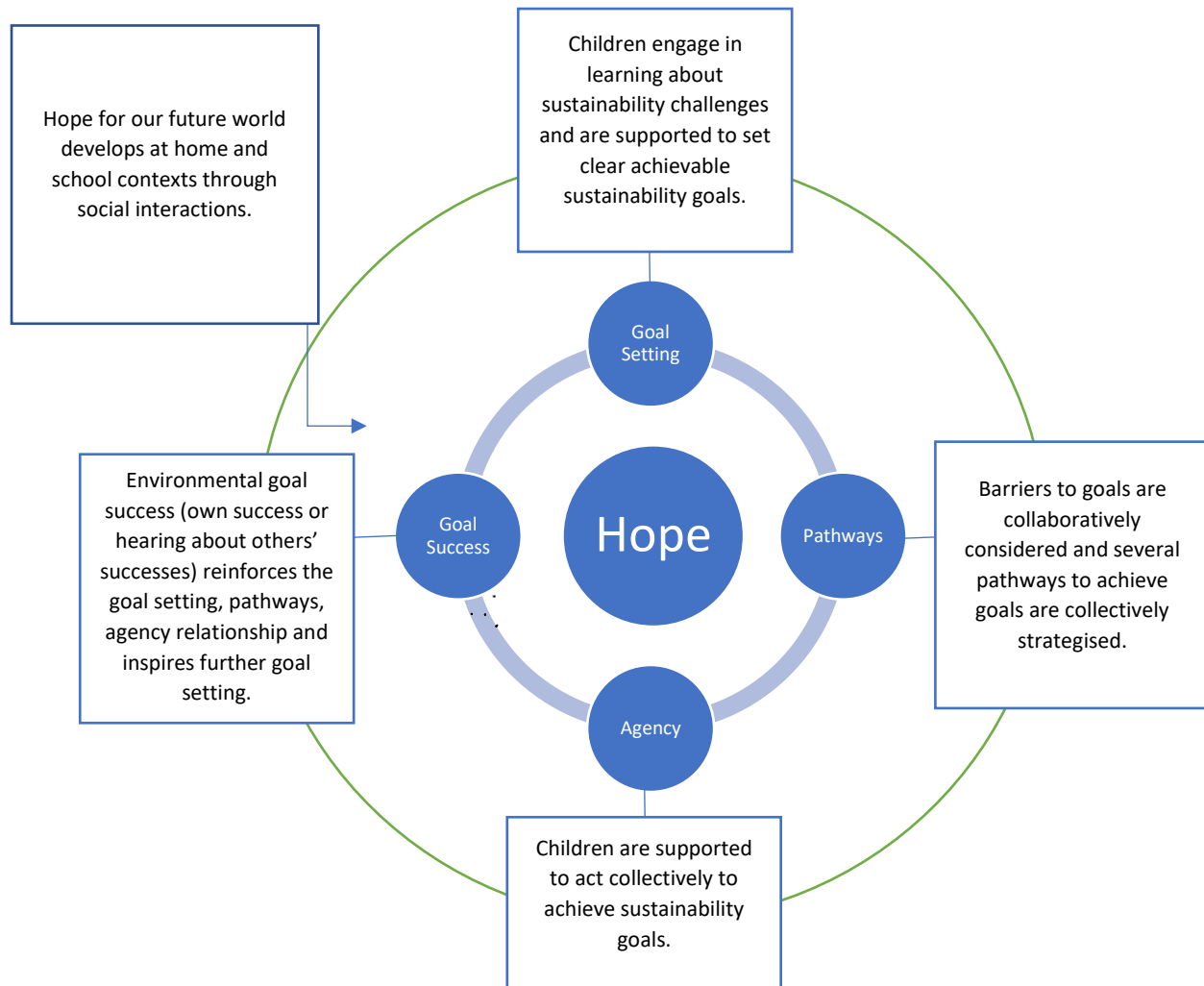


Figure 7.1 depicts that hope is facilitated in home and school social contexts when sustainability goal setting and strategising to realise goals is undertaken collaboratively and strategies are collectively enacted. Furthermore, personal success in achieving sustainability goals or hearing about others' successes in achieving goals facilitates further sustainability goal setting.

7.5 Conclusion

This chapter has addressed research question 3: What are variations in children's conceptions of hope for our future world. The chapter reveals a spectrum of variation in children's capacities to conceive the four hope dimensions and variation in what leads children to conceive more or less powerful types of hope considering the impact on sustainability engagement. In the following chapter, I discuss the implications of the findings for sustainability education.

Chapter Eight: Key Themes from the Findings

In this chapter, I advance three key themes that emerged from children's drawings and descriptions of their hope for our future world: children conceive hope for our future world in a spectrum of ways; there are numerous barriers that inhibit children's hope for our future world; and hope for our future world is socially constructed. The first key theme introduces new understandings about how primary-aged children conceive hope for our future world. The second and third themes advance existing knowledge regarding the factors that inhibit hope, and how hope is developed and maintained through social interaction.

The organisation of this part of the chapter is as follows. I begin by discussing the first theme: children conceive hope in a spectrum of ways, underpinned by the following sub-themes: children's hope is complex, and hope can be ordered on a spectrum from least to most powerful. Then, I explore the second theme: there are many barriers to children's hope for our future world. I discuss how perceived future technological advancements, perceived future human population increase, overwhelming emotions, knowledge of sustainability challenges without mitigation strategies, and experiences of adverse environmental, ecological, and social events can adversely affect children's capacities to have hope. Following this, the final theme is investigated: hope for our future world is socially constructed. Here I identify the positive correlation between supportive school and home experiences, perceived collective sustainability action, and sharing sustainability success stories, to children's hope.

8.1 Theme One: Children Conceive Hope for Our Future World in a Spectrum of Ways

8.1.1 Children's Hope is Complex

This study finds that primary-aged children's conceptions of hope are much more complex than previously captured. Previous research points to narrower conceptions of children's hope for futures as a positive or negative outlook to the future (Barraza, 1999; Flee, 2002; Ozsoy & Ahi, 2014; Strife, 2012). This study expands such understandings by introducing five qualitatively different categories of hope for futures: expansive, intermediate, emergent, limited, and uncritical hope. These categories reflect varying degrees of Snyder's pathways thinking and agency, as well as McGeer's emphasis on social context in hope development. For instance, children with expansive hope demonstrate strong pathways thinking (identifying 28 strategies) and agency (enacting 13 actions), mirroring Snyder's concept of high hope. In contrast, children with limited hope exhibit a breakdown in both pathways and agency, aligning with Snyder's description of low hope. The social construction of hope is evident across categories, with children's hope levels correlating strongly with their experiences of collective goal-setting and action in school and home environments, as emphasized by McGeer. This multifaceted understanding of children's hope provides a more robust foundation for tailoring sustainability education experiences to progress children towards expansive hope conceptions, which are better equipped to forge positive sustainability outcomes.

Like this study, research on secondary-aged children finds that not all types of hope have an equal impact on sustainability action (Grund & Brock, 2019; Ojala, 2012a; Ojala, 2013b; Ojala & Bengsston, 2019; Sangervo et al., 2022). For example, Ojala's (2012a) work reveals some diversity of hope types amongst secondary children including constructive

hope, and hope stemming from denial or lack of awareness; both of which have opposite effects on sustainability action. Sangervo's (2022) work expands this to include realistic hope and hope without worry which also have opposite impacts. This research on primary-age children, in conjunction with previous studies on secondary-age children, demonstrates that hope can serve as both a motivator for sustainability engagement and a potential deterrent to assuming personal sustainability responsibility, depending on the type of hope.

Capturing a broader understanding of primary-aged children's hope is a significant contribution to the literature. The nuances and diversity of children's conceptions captured in this study contribute to a more inclusive, equitable, and comprehensive body of hope knowledge and ensure that the research findings are applicable to real-world contexts (Denzin & Lincoln, 2005). This is because, a more complete picture of the wide-ranging ways in which children conceive hope provides a robust foundation to tailor sustainability education experiences to progress children towards expansive hope conceptions. Recall from the research findings (Chapter 6), that children with expansive hope for our future are better equipped to forge a way forward towards generating positive sustainability outcomes.

8.1.2 Children's Hope can be Ordered on a Spectrum from Least-to-Most Powerful

The spectrum of hope for our future world produced through this research makes a unique contribution to the literature. No other known study has systematically categorised and ordered children's hope for our future world on a spectrum. The spectrum makes clear that not all types of hope are equal, and that hope progresses across a continuum from uncritical to expansive hope. The spectrum represents five ways that children conceive hope, as well as the reasons why children conceive hope in particular ways. Previous studies have focused on a few different types of hope that children can conceive such as

constructive (Ojala, 2021) and utopian hope (Sterling et al. 2022), but this research expands on previous studies, providing a more nuanced understanding of children's hope conceptions by representing five qualitatively different hope conceptions.

By mapping the landscape of primary-aged children's hope for futures on a spectrum, it becomes apparent that most children (the 60% of children who conceive expansive, intermediate and emergent hope) have some form of constructive hope for future environments. That is, hopeful thinking consisting of goal-directed, problem-focused thoughts that lead individuals to believe they can create the necessary changes to achieve positive outcomes for environments (Gallagher & Lopez, 2018). This finding challenges concerns about a prevailing "culture of hopelessness" among children (Clayton, 2020) and instead highlights the active engagement and mobilisation of many in strategising positive solutions and taking sustainability action. Notably, approximately 20% of the children included in this study (children who conceive expansive hope) demonstrated highly sophisticated abilities to generate and implement individual, collective, political and leadership pathways to address a wide range of sustainability challenges. This emphasises the immense potential of children to make meaningful contributions in mitigating sustainability issues and underscores their crucial role in our collective response to sustainability threats.

8.2 Theme Two: There are Many Barriers to Hope

8.2.1 Perceived Future Technological Advancements

Negative perceptions of future technological advancements can present a significant barrier to children's hope for our future world. This study found that children's lived experiences of environmental destruction on account of technology, such as the clearing of

natural spaces by machines to build housing, can lead them to expect further environmental destruction into the future due to technology. Approximately 40% of the children in this study (children who conceive limited and emergent hope) expressed the view that individual and collective actions to create positive environments are futile because technological advancements will continue to cause irreparable harm. For instance, participant 3 said, “I think there’s nothing that we can do about technology ruining the environment because its already doing it now and, in the future, it will get even more powerful.” This points to how children’s perceptions of future advancements in technology can lead them to disengage from efforts to effect positive sustainability outcomes in the present.

Positive perceptions of future technological advancements can also inhibit children’s hope for our future world. Some children in this study (approximately 10% of children who conceive uncritical hope) expressed strong faith in technology to create utopian futures and reverse current ecological, social, and economic challenges including low bee populations, viruses, crime, and housing shortages. Their faith in technology impacted their willingness to generate and enact pathways to positive futures (essential components of hope) because they felt less personally responsible for taking action to realise positive sustainability outcomes. This sentiment is embodied in comments such as: “I don’t really think I have to do anything to make the future world nicer because I think tech will make it better” (participant, 10). Ojala’s (2012a) study with secondary-aged children also found that perceptions of technology as capable of solving sustainability threats can lead children to absolve themselves of personal responsibility to take sustainability action. Together with my study, this suggests the need for children to develop a more balanced and critical understanding of technology’s role in realising positive sustainability outcomes. For example, understanding that technology on its own has limitations and while it has the potential to

contribute to positive futures, children should also assume an active role. This concept is elaborated on in Chapter 9.

8.2.2 Perceived Future Human Population Growth

Negative experiences of human population growth can hinder primary-aged children's hope for our future world leading to resignation to future challenges of sustainability. In this study, children with limited and emergent hope (40% of children) expressed the belief that ongoing human population growth will lead to insurmountable challenges in the future, encompassing of ecological degradation, social discord, and economic insecurity. These children extrapolated their present negative experiences of population growth into predictions for future negative experiences. For instance, participant 8, from metropolitan Melbourne, shared that they are experiencing longer travel times to school due to increased traffic and expect this to continue due to further population growth in the future. Similarly, participant 2 from rural Victoria lamented the clearing of farmland for housing and expressed the expectation that natural landscapes will continue to be cleared as the population expands. Notably, both metropolitan and rural Victoria have experienced the highest increases in human population growth nationwide over the past decade (Victorian Government, 2023). The finding that children anticipate current challenges associated with population growth to endure into the future is a novel contribution to the literature. No known studies have identified such a link. However, as discussed in Chapter 5, Victoria has recently experienced rapid human population growth leading to challenges including increased traffic congestion, high housing costs and decreased access to natural spaces. This finding may support research that finds that children's fears for the future align with contemporary worries. For instance, Hicks and Holden (1995a), found that children

expressed concerns about the hole in the ozone layer in the mid-1990s—a fear indicative of concerns for futures at that moment in time that was not expressed in the current study.

It is significant that this study identified that primary-aged children's hope for our future world is inhibited by their concerns about future human population growth. This finding adds to current understanding about the factors that shape children's hope for our future world. It is important to understand the factors that inhibit children's hope because low hope for futures is associated with impaired psychological wellbeing (Long, et al., 2020) and reduced engagement in various areas of life such as social relationships and academic achievement (Lopez & Snyder, 2011). Identifying that children's perceptions of future human population growth can inhibit their hope also has implications for sustainability education practices aimed at building hope; a topic I take up in Chapter 9.

8.2.3 Overwhelming Emotions

Some children in this study experienced intense feelings of fear, anger and sadness when imagining the future world, leading them to express resignation to severely degraded future environments. Recall from Chapter 6, children categorised as having limited hope for our future world described feeling scared about the potential consequences of a range of ecological, social and economic challenges including pollution, civil harmony and housing affordability. Moreover, they expressed sadness about anticipated losses of biodiversity, as well as anger towards previous generations for perceived inaction on climate change. The strong negative emotional responses that children experienced when imaging the future led them to feel powerless to effect positive future sustainability outcomes. As a result, they exhibited little motivation to engage actions to realise positive sustainability outcomes. For example, participant 2 said:

“The future is petrifying. Due to even worse climate change it will be darker and colder. Everything will cost more... there will be lots of smoke and no spare land... people won’t be as happy, and they will fight more... nothing’s been done about it and now it’s too late... I definitely can’t do anything. I’m just a kid... I don’t really do anything except pick up rubbish because it won’t matter.”

The finding that strong negative emotions including fear, anger and sadness when contemplating futures can be related to feelings of hopelessness and a lack of sustainability action aligns with Ojala’s (2013a; 2017) research. For instance, Ojala (2013a) identified that when secondary-aged children experience strong feelings of fear when reflecting on future environmental and climate challenges, they can feel overwhelmed and consequently disengage from taking positive sustainability action. Together with my study, this challenges the notion that evoking negative emotions is an effective motivator for sustainability action (Tannenbaum et al., 2015). In contrast, mine and Ojala’s (2013a) research warns that employing such tactics with children could be counterproductive.

This research also reveals that strong feelings of excitement and happiness when imagining our future world can be associated with low levels of constructive hope and sustainability engagement. As discussed in Chapter 6, children with uncritical hope, who expressed strong feelings of joy when describing their predictions for utopian futures created by technology or spiritual intervention, demonstrated little motivation to strategise or enact pathways to preferable outcomes. This finding, that strong positive emotions when imagining futures can negatively correlate with sustainability engagement is a novel contribution to the literature. Most studies focus on the adverse correlation between strong negative emotions and hope (Leger-Goodes et al., 2022; Strife, 2012). The finding that both strong positive and negative emotions can inhibit primary-aged children’s hope for the future suggests that children require support to manage their full range of emotional

responses to sustainability challenges to foster hopeful outlooks and supports the view that affective pedagogies should feature in sustainability education to support children in managing emotional challenges relating to climate change awareness (Ojala, 2017; Ojala & Bengtsson, 2019).

The findings of this study imply variation in the emotions that influence hope for our future world across different age groups. Previous research conducted with secondary-aged children has identified a strong link between feelings of guilt about sustainability challenges and a lack of hope for our future world (Hickman, 2021; Kleres, et.al., 2017; Thomas et al., 2021). However, in this study, primary-aged children did not express feelings of guilt when envisioning the future. The absence of guilt-related emotions contributes to understanding about the distinct emotions that influence primary-aged children's hope for futures. This knowledge can enable stakeholders in primary sustainability education to tailor programs to conceive the specific emotional needs of primary-aged children, thereby building their hope.

8.2.4 Awareness of Sustainability Challenges without Mitigation Strategies

Primary-aged children's awareness of a range of sustainability challenges without practical knowledge of how to mitigate them can lead them to express limited hope for futures. For instance, participant 20 commented, "The problems are too big now (climate change, pollution, decreased natural landscapes) and there's nothing I can do about it." This finding supports arguments made by Arnold et al., (2018) and Nabi et al., (2018) who emphasise that awareness of sustainability challenges must be accompanied by practical knowledge of how to respond to such challenges to maintain hope for the future and motivate sustainability engagement.

Media was found to be a significant contributor to the disparity between primary-aged children's awareness of sustainability challenges and their knowledge of mitigation strategies (40% of children who conceive limited and emergent hope). This 'awareness-mitigation' gap led children to express despair for futures. For instance, participant 1 said "There will be bushfires because they're pretty common now and the news said there will be even more than there are now (in future)... I can't do anything about that." It is well documented that media often focusses on the causes, impacts and challenges of climate change while neglecting to highlight individual and collective responses when reporting on the environment (Arnold, 2018; Gunster, et al., 2017; Moser, 2010; O'Neill et al., 2015). For instance, Arnold et al (2018) argue that medias emphasis on sustainability challenges without showcasing solutions and stories of recovery and resilience creates a 'hope gap' that fosters fatalism. The findings of this study demonstrate the applicability of that argument to primary-aged children.

8.2.5 Experiences of Adverse Environmental Ecological and Social Events

In this study, some children's experiences of adverse events including environmental degradation, bushfires, covid-19 and inflation led them to expect the compounding of similar events in the future (40% of children with emergent and limited hope). Such children demonstrated resignation to living in a 'worse world' (participant 4) and low motivation to engage in behaviours that can realise positive outcomes. For instance, participant 6 commented, "there are probably even worse viruses coming. That's scary because things are bad now and we have no idea how to make them better. So, things will be even worse with viruses when I'm an adult and the world won't be nice. There's nothing we can do." Participant 6's comment demonstrates how primary-aged children's current experiences of

adverse events can lead them to develop hopelessness for futures and contribute to a lack of motivation to address sustainability challenges. Considering it is predicted that climate change will exacerbate the frequency and severity of adverse ecological, social, and economic events in the coming decades (Preston et al., 2006; Bates et al., 2008), it is crucial to identify ways to foster children's hope for our future world in the face of such challenges. I explore how sustainability education practices can contribute to building hope in Chapter 9.

It is important to note that not all primary-aged children who have experienced adverse ecological, social, or economic events in this study expressed pessimism about the future. In contrast, some children (emergent hope) exhibited a motivated and proactive mindset in the face of such circumstances. For instance, participant 9 commented, "Climate change is already a problem, like we're already having disasters like fires and less animals. Now is a good time to make it go lower. It can be a better world if we use less things like energy and plastic like I'm trying to do and that is what we're trying to do at school." Participant 9's comments highlight how children's experiences of adverse environmental events can inspire them to actively engage in sustainable behaviours when they possess the capability to generate and implement strategies to address those challenges and receive support to do so.

8.3 Theme Three: Hope for our Future World is Socially Constructed

8.3.1 School and Home Support are the Biggest Predictors of Hope

This study finds that children who are encouraged to participate in collective efforts to achieve sustainability goals at school and home exhibit higher levels of hope for the future (expansive and intermediate hope) than their peers (emergent, low, and uncritical hope). For example, participant 9 conveyed hopefulness about saving the endangered eastern

bandicoot after being supported at school to envision and enact pathways towards changing the bandicoot's extinction status. This finding underscores the significant role that school and home environments play in the construction of hope among primary-aged children, providing support for views that sustainability education offers a powerful context for building of hope (See Chapter 2).

The finding that primary-aged children's hope for futures develops through social interaction aligns with McGeer's (2004; 2008) theory of hope as a socially constructed phenomenon. According to McGeer, hope is not an inherent individual attribute but emerges through collective goal setting and acting to achieve the goals. Accordingly, this study contributes to understanding of hope by identifying that primary-aged children's hope for the future is socially constructed. This understanding underscores the importance of fostering positive social environments that support children's hope development. In Chapter 9, I provide suggestions for building children's hope reflective of the social nature of hope.

8.3.2 Perceived Collective Sustainability Action is Critical to Personal Sustainability Action

Primary-aged children's hope for our future world and their motivation to engage in pro-sustainable actions is often contingent upon their belief that others will also act to realise positive outcomes. In this study, children who conveyed trust in others to act to ameliorate threats to sustainable futures expressed belief that positive outcomes are attainable. Accordingly, they felt that it was worthwhile to engage in pro-sustainable actions. This contrasted with children who expressed little trust in others to act to mitigate sustainability threats, who felt that their individual actions would be futile and therefore did not take action.

In this study, children expressed trust in various groups to act to realise sustainable outcomes. Recall from chapter 6, children with the highest level of hope (expansive hope) expressed trust in friends, family, the local and broader communities, and politicians to act; they engaged in the most actions. In contrast, children with lower levels of hope expressed trust in fewer groups of people and subsequently engaged in less action. This finding aligns with literature that emphasises the positive correlation between trust in both close relationships and broader groups to act to mitigate sustainable threats and personal action (Li & Monroe, 2018; Ojala, 2012a; 2018; 2021). Moreover, this finding adds to the literature by highlighting the specific close and broad groups that primary-aged children need to have trust in to experience greater hope for futures.

8.3.3 It is Important to Share Sustainability Success Stories

This research finds that awareness of sustainability success stories can enhance primary-aged children's hope for our future world. Children with the highest levels of hope, categorised as expansive and intermediate hope, reported that hearing stories of positive sustainability achievements led them to believe in the possibility of positive sustainability outcomes. This belief, in turn, motivated them to act towards realising further positive outcomes. For example, participant 21 was inspired by learning about improvements in girls and women's rights at school, which led them to create a video to encourage others to advocate for the same cause. Similarly, participant 16 was inspired by their mother's success in providing food security for homeless people through participation in a local community vegetable garden, which motivated them to also contribute to the garden. These findings suggest that through sharing concrete examples of communities and individuals realising

positive sustainability outcomes, children's hope is developed leading to increased levels of sustainability engagement.

This study finds that primary-aged children's hope for our future world is not only developed through hearing about sustainability success stories but is also maintained and renewed through such stories. Recall from Chapter 6, participant 11 described that they felt hopeless about the number of undernourished dogs in Bali. However, after hearing a story about a successful sterilisation project that improved the dogs' outcomes, they gained hope that a range of other sustainability challenges can also be improved. This newfound hope gave them the confidence and determination to act to ameliorate challenges of water pollution. This finding aligns with literature that finds that hope plays an important role in children's resilience and coping strategies when faced with adverse situations (Luthans, et al., 2006; Pikhala, 2017).

8.4 Chapter Summary

This chapter explored three key themes that emerged from children's drawings and descriptions of their hope for the future world. The first theme reveals that primary-aged children conceive hope in a complex spectrum, ranging from uncritical to expansive hope. This challenges previous research that presented narrower conceptions of children's hope. The second theme identifies various barriers to children's hope, including perceived future technological advancements, human population growth, overwhelming emotions, awareness of sustainability challenges without mitigation strategies, and experiences of adverse events. The third theme emphasises that hope for our future world is socially constructed, with school and home support being the strongest predictors of hope. The chapter also highlights the importance of perceived collective sustainability action and

sharing sustainability success stories in fostering children's hope. These findings contribute to a more nuanced understanding of children's hope conceptions and have implications for sustainability education practices aimed at building hope which I take up in the next chapter (Chapter 9).

Chapter Nine: Implications of the Findings for Sustainability Education

This chapter answers the primary motivating question of this thesis: What are the implications of the findings for sustainability education? I do this by applying the research findings to sustainability education policy and practice to guide teachers wishing to build hope into their teaching and learning practices. Such application of the findings can maximise the impact of the research on children's hope outcomes by providing more complete support (Smith, 2016). This support is needed given current and predicted threats to sustainable futures (Spellman, 2021), the role of hope in facilitating engagement in efforts to realise positive outcomes (Kelsey, 2020), and calls from teachers for guidance on delivering sustainability education that nurtures hope (Dunlop & Rushton, 2022). Applying the findings to sustainability education brings full circle my motivation for this research, as explored in Chapter 1: During my time as a primary school teacher and sustainability educator in Australian schools, I noticed that some children are losing hope for futures and that those who maintain hope are better equipped to work towards positive outcomes. Therefore, I wished to contribute to integrating hope within sustainability education.

To structure the chapter, I first apply the findings of my research to Australian sustainability education policy. I propose ways to include expansive hope in the Australian curriculum's Sustainability Cross-Curriculum Priority (SCCP). Subsequently, I apply the findings to propose ways that hope can be included in sustainability education practice. I do this by drawing from the descriptions provided by the children who participated in this research about what leads them to have or not have hope.

9.1 Hope in the Australian Sustainability Cross-Curriculum Priority (SCCP)

There is a need for hope to be included in Australian sustainability education policy. The findings from this study suggest government policies influence children's hope for our future world. Children who believe that governments will provide policy support for sustainable future outcomes are more likely to take individual action to realise sustainable outcomes than other children. As per Chapter 6 and 7, children with expansive hope, who believe that governments will provide policy support for the adoption of green energy sources (through incentives like rebates for solar panels and electric vehicles), exhibit a heightened motivation to undertake personal measures aimed at reducing their energy consumption. Conversely, children with limited hope (Table 7.1), who lack faith that governments will provide support, perceive individual actions as futile, and accordingly lose the impetus to take action.

Recall from Chapter 2, Australian sustainability education policy is realised through the Australian Sustainability Cross-Curriculum Priority (SCCP). Adapting the SCCP to include expansive hope can highlight the importance of expansive hope and provide guidance for teachers. This is because including expansive hope in the SCCP has the capacity to motivate more children to engage in more meaningful actions to realise positive outcomes. As per Chapters 6 and 7, for 60% of children, the SCCP is not developing the 'knowledge, skills, values, and worldviews necessary to act in ways that contribute to more sustainable patterns of living' (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2016). Only children within the expansive and intermediate hope categories (40% of participants) described their educational experiences as empowering them to take action to achieve positive outcomes. Moreover, only children with expansive and intermediate hope

reported engagement in actions to realise sustainable outcomes beyond individual actions like picking up rubbish.

The SCCP provides a suitable vehicle for including hope. Expansive hope aligns with the SCCP'S 'Futures Key Concept' (Table 2.1), which aims to "build capacities for thinking and acting in ways necessary to create more sustainable futures" (Australian Curriculum Assessment and Reporting Authority, [ACARA], 2022). I propose expanding the first organising idea of the Futures Key Concept (OI.6) (Table 2.1) to include expansive hope by highlighting the importance of expansive hope in motivating children to take action to support the sustainability of ecological, social, and economic systems. Table 9.1 shows that currently, OI.6 presents a broad framework for sustainability with the phrase: "sustainable futures are achieved through informed actions." OI.6 fails to recognise motivational attributes that can lead children to take informed action. My proposed expansion, included in Table 9.1, embeds expansive hope within OI.6, defining what expansive hope is and how it can be cultivated. Accordingly, the current OI.6 explains what needs to be done to achieve sustainable futures, and my proposed expansion explains how sustainable futures can be achieved. My proposed expansion also provides a clear pathway for how expansive hope can be developed: "through trust in friends, families, communities, and political leaders to support the achievement of positive sustainable outcomes" (Table 9.1). Clarity of how expansive hope is nurtured is important because it will provide direction for teachers (The Organisation for Economic Cooperation and Development [OECD], 2018).

Table 9.1

Proposed Expansion of the Sustainability Cross-curriculum Priority Futures Key Concept

Organising Idea 1 (OI.6)

<i>Current OI.6</i>	<i>Proposed Expansion to OI.6</i>
The sustainability of ecological, social and economic systems is achieved through informed individual and community action that values local and global equity and fairness across generations into the future. (ACARA, 2022).	Children can be motivated to engage in efforts to realise sustainable futures with expansive hope, which can be understood as having a positive future outlook based on the belief that ecological, social and economic goals are achievable. Expansive hope involves perceived capacities to identify and enact individual, community, political, and leadership pathways to achieve such goals. Expansive hope is nurtured through trust in friends, families, communities, and political leaders to support the achievement of positive outcomes.

9.2 Integrating Expansive Hope in Sustainability Education Practice

Based on the findings of this study, I propose eight educational practices to build children's hope towards expansive hope (Table 9.2). Such practices are based on children's descriptions of what leads them to have or not have hope. The first four proposed practices (PP. 1-4, blue colour in Table 9.2) are based on what leads children to have expansive and intermediate hope (the highest identified hope categories). For instance, children with expansive hope explain that their previous experiences collaborating to set and then take actions to achieve sustainability related goals motivates them to engage in various ecological, social, and environmental initiatives (Chapters 6 & 7). This suggests educational practices that facilitate collective efforts to set and act to achieve sustainability goals can

facilitate expansive hope conceptions. The remaining proposed practices (PP.5-8, green colour in Table 9.2) are based on identified barriers to children's hope in the lower hope categories (emergent, limited and uncritical hope). For instance, children with limited hope describe that their perceptions of future increases in human population growth and associated negative impacts on environments leads them to disengage from efforts to realise positive outcomes (Chapters 6 & 7). This suggests that educational interventions that promote critical thinking skills when exploring issues of population growth and associated challenges are needed. Together, the eight proposed practices provide a framework for teachers wishing to progress hope and overcome barriers (Table 9.2). To structure this section, first I present the eight proposed practices with an accompanying short expansion (Table 9.2), then I explicate the importance of such practices to children's hope for futures.

Table 9.2

Proposed Hope Building Practices

<i>Proposed Practices</i>	<i>Short Expansion</i>
PP.1 Encourage collaborative goal setting	Engage children in group discussions to collectively set sustainability related goals.
PP.2 Facilitate collective strategising	Facilitate group research and planning sessions where children can strategise, routes to attain sustainability related goals.
PP.3 Support collective action	Support children to contribute to realising shared sustainability goals within their school, home, local and broader communities through taking action.
PP.4 Share successes	Encourage individual children, groups of children, guest speakers and organisations to share their personal or group successes

	realising sustainability related goals, big or small. Share own successes realising sustainability related goals with the class.
PP.5 Emphasise solutions	Highlight, share and focus on existing and potential solutions to threats to sustainable futures.
PP.6 Promote critical thinking	Lead children to analyse, evaluate, and reflect on complex sustainability challenges, encouraging them to break them down into manageable components.
PP.7 Encourage active participation	Encourage children to take environmental, social and economic responsibility and avoid reliance on external factors such as perceived technological advancements or spiritual interventions as having capacity to solve all challenges into the future.
PP.8 Support emotion regulation	Provide opportunities for children to spend time in nature. Role model engagement in efforts to realise positive sustainability outcomes.

PP.1 Encourage Collaborative Goal Setting

Encouraging collaborative goal setting is the foundation for developing children's hope for futures and involves prompting children to collaboratively set goals to mitigate sustainability challenges. Through engaging with others to set goals, children come to believe that positive future outcomes are possible for two main reasons. First, collaboration provides a foundation for moving forward. Collaboration stimulates problem-solving and agency to work towards positive outcomes (Chapters 6 & 7). For example, children in the expansive hope category explain that through setting collaborative goals aimed at realising

sustainable outcomes ‘together we can make the future better (participant, 11). This contrasts with children in the limited hope category, who do not recount previous experiences setting collaborative goals, who "don't think there's anything that can help with how big the problems are" (participant, 20). Second, setting collaborative sustainability goals motivates children to act to achieve their goals. This is because children who set group goals are likely to commit to working towards them so as not to 'let down' the rest of the group (participant, 24). Encouraging children to collaboratively set goals aligns with the provision of an active and participatory sustainability education which is needed to engage children in finding solutions to complex sustainability challenges (Chapter 2).

PP.2 Facilitate Collective Strategising

Facilitating collective strategising involves providing opportunities for children to come together to discuss and identify potential routes to sustainability related goals. Collective strategising fosters hope for positive futures in two main ways. First, by developing children's awareness of diverse perspectives and ideas about ways to achieve goals. Through awareness of multiple routes to achieve goals, children's sense of belief that goals are achievable grows. Recall from Chapter 6, children in the expansive hope category described that pooling knowledge and ideas about how to conserve the eastern bandicoot led them to identify many routes to mitigate breeding, habitat, climate, and awareness of challenges. Through collectively identifying diverse routes to conserve the bandicoot, children's confidence that positive outcomes for the bandicoot were possible increased. This is because children became aware of a range of supports that could be put in place to support the bandicoot, which were beyond their own individual perceived supports. Second, collective strategising to realise sustainability related goals develops children's trust in others

to contribute to efforts to realise positive outcomes. As per Chapters 6 and 7, when children experience others working hard towards finding solutions to sustainability related challenges, their hope for futures grows because they come to understand that they are supported in their commitment to realising positive outcomes. This sense of support motivates them to continue working towards mitigating sustainability challenges.

PP.3 Support Collective Action

Supporting collective action involves leading children to work together at home and school and within and across their local and broader communities to achieve sustainability related goals. Through participating in collective efforts to realise positive outcomes, children come to understand the tangible progress and positive outcomes that can be achieved as a result of group action. This leads them to feel hopeful that positive futures are achievable. Recall from Chapter 6, children with expansive hope who participate in community projects such as beach clean ups and food growing programs, witness the powerful impacts of collective action on their environmental and social contexts. This motivates them to engage in further collective projects aimed at protecting the environment and redressing social challenges. On the other hand, children who do not recount previous experiences engaging in collective action to mitigate challenges are prone to resignation to degraded futures. They engage in little action to realise positive outcomes (Chapter 6 & 7).

PP.4 Share Successes

Sharing successes involves exposing children to sustainability success stories. Through sharing sustainability success stories, including individual, community, organisation and nature regeneration successes, children come to recognise that peoples' actions make a difference to outcomes and that nature is resilient. Sharing sustainability successes

counteracts the dominant narrative of environmental, social, and economic decline that leads children to disengage from efforts to realise positive outcomes (Chapter 2). Through exposure to sustainability success stories, children gain inspiration to act to achieve positive outcomes. For instance, one child in the intermediate hope category (participant, 21, Chapter 6) commented that hearing stories about women who have achieved goals relating to gender inequality, inspired them to create and share a video highlighting gender related issues and solutions. Another child in the expansive hope category (participant 7, Chapter 6) commented that recognising how birds returned to the sand dunes at their beach after their community acted to halt erosion led them to pick up rubbish at the beach to encourage other animals to find habitat at the beach too. On the other hand, children in the limited hope category have little awareness of sustainability success stories and strong awareness of stories of environmental loss (often gained through exposure to media sources). Such children express that they expect the world to be 'even worse when they are an adult' (participant 6, Chapter 6).

Sharing sustainability success stories with children can also lead them to express intentions to take action to realise sustainability related goals into the future. For instance, one child in the expansive hope category (participant 23), commented that hearing stories about veterinarians realising positive outcomes for animals in Bali (through desexing programs), has inspired them to also become a veterinarian in the future. It is significant that exposure to sustainability success stories in the present can lead children to express intentions to take action to realise positive outcomes into the future. This is because future-oriented intentions to engage in sustainability actions often leads to actual future actions (Chapter 2).

PP.5 Emphasise Solutions

Emphasising solutions to sustainability challenges plays a vital role in facilitating children's hope for futures. Emphasising solutions involves shifting the focus from highlighting sustainability challenges to exploring and promoting actionable solutions to such challenges. As indicated by Table 7.1 (Chapter 7) all children in this study (uncritical, limited, emergent, intermediate, and expansive hope categories) have strong awareness of a vast number of sustainability challenges that threaten futures. However, few children (intermediate and expansive hope categories) are aware of solutions to such challenges. Children who lack awareness of solutions to sustainability challenges feel powerless to mitigate them and disengage from efforts to realise positive outcomes (Chapter 6 & 7). For instance, children without knowledge of solutions to mitigate climate change challenges (limited and emergent hope) describe feeling emotionally overwhelmed by climate change and incapable of making a difference. This contrasts with children with strong awareness of solutions to climate challenges (children in the expansive and intermediate hope categories), who engage in various efforts to mitigate such challenges. Such children have a greater sense of control over the future, and an ability to manage their emotions relating to climate change in constructive ways (Chapter 6 & 7).

PP.6 Promote Critical Thinking Skills

Promoting children's critical thinking skills about sustainability challenges involves leading children to analyse the multidimensional aspects of sustainability issues and evaluating potential ways to mitigate them. Recall from Chapter 6, children who engage in critical thinking about complex issues such as human population growth and advancements in technology break down such challenges into multiple components to identify how to

make incremental progress towards positive outcomes. For instance, children with expansive hope deconstruct the challenge of future human population growth into manageable components: impacts of human population growth on housing; infrastructure; and access to natural landscapes (Chapter 6). Through this process, such children generate routes to target each component part of the population growth challenge, including building smaller houses to relieve issues of homelessness, utilising double-decker buses to reduce traffic congestion, and advocating for governments to provide residents in all communities with proximal access to natural parks and reserves (Chapter 6 & 7). Meanwhile, children who do not think critically about human population growth (children in the limited and emergent hope categories), view human population growth as one large insurmountable problem. This perspective leads such children to express anxiety about the future and resignation to living in a 'worse world' (participant, 2; 4 & 20).

PP.7 Encourage Active Participation

Encouraging children to actively participate in efforts to realise sustainability related goals is critical to the development of expansive hope, the most impactful type of hope on sustainability engagement (Chapter 6 & 7). Children with expansive hope describe being actively involved in a range of efforts to realise sustainable outcomes, such as community beach clean ups, tree planting efforts and raising awareness about environmental issues. Through their active engagement in such efforts, children with expansive hope come to understand the power of their actions to transform the world around them in positive ways. For instance, by increasing their local biodiversity and improving their community's green spaces (Chapter 6). This motivates them to engage in further actions (Chapters 6 & 7).

PP.8 Support Emotion Regulation

It is important that children are supported to regulate their emotions in relation to sustainability challenges to maintain their hope for futures. Recall from Chapter 2, regulating emotions effectively in relation to sustainability challenges involves managing emotional responses to information, predictions, and visible impacts of sustainability challenges in ways that maintain emotional wellbeing and lead to action to mitigate challenges (Chapter 2). Children with expansive hope manage their emotions related to sustainability challenges in constructive ways, such as by acknowledging feelings of environmental loss while continuing to maintain hope that positive outcomes are possible (Chapter 6). Such children describe that being provided with time in nature helps to mitigate feelings of environmental loss by leading them to understand that there is ‘still a lot to fight for’ (participant 16). Such children say it is important for people to have regular access to natural spaces to motivate them to protect it (participant 16). This suggests that sustainability education practices that offer children opportunities to connect with nature may help them regulate their emotions about sustainability challenges and feelings of environmental loss. In turn, this could foster hope that positive outcomes are possible and motivate them to act toward achieving these outcomes.

9.3 Summary

This chapter examined the implications of my research findings for Australian sustainability education policy and practice for building hope within the teaching and learning of sustainability education. The implication for policy is that integrating expansive hope within the Australian Sustainability Cross-curriculum Priority can provide a framework for motivating schools to take more actions towards achieving positive sustainability

outcomes. This aligns with the SCCP's goal of developing "the knowledge, skills, values and world views necessary for people to act in ways that contribute to more sustainable patterns of living" (Australian Curriculum, Assessment and Reporting Authority [ACARA], F-10 Curriculum, Cross-Curriculum Priority: Sustainability. 2016). The implication for practice involves a framework comprising eight proposed practices that teachers can use to build children's hope in sustainability education. This practice framework addresses the need for actionable strategies that teachers can use.

Chapter Ten: Concluding the Thesis

This research investigated the various ways that Victorian primary-aged children conceive hope for our future world. By listening to children's descriptions of hope, the study identified variations in their hope, their impact on motivation to take sustainability actions, and the experiences that shape various hope conceptions. The findings contribute to understanding of how sustainability education can build children's hope to empower them to address threats to sustainable futures.

This chapter concludes the thesis. I begin with a brief review of the research, including an overview of the research context, key findings, theoretical framework, methodology, and methods. I then address the research questions by summarising the key findings. Following this, I reflect on the research limitations and contributions to understanding children's hope for our future world, as well as contributions to the field of sustainability education. To close the thesis, I provide recommendations for future research and a short final statement.

10.1 A Review of the Research

Hope for our future world influences motivation to act for positive sustainability outcomes. However, little prior research has explored how primary-aged children conceive hope, and no known research has explored the types of hope primary-aged children conceive, and the factors that influence their hope. This research addressed this gap by investigating how Victorian primary-aged children in Australia conceive hope for our future world, the factors that influence their hope and variation in different hope types. Based on the research findings, proposals for Australian primary sustainability education policy and broader sustainability education practices are made. These proposals aim to enhance

sustainability education's capacity to build children's hope for our future world and motivate sustainability engagement.

This research was conducted in my home state of Victoria, Australia. I sought to expose variation in my collected data to capture a broad understanding of children's hope for our future world and provide a robust foundation for proposals to build hope within the context of sustainability education. To achieve this, I reviewed literature on children's hope for the future (O'Bryan et al., in review) to research factors that influence hope. Next, based on insights I gained about factors influencing hope, I collected data from children of various primary school ages (8-12yrs), attending different school settings (public, independent & catholic) from a mix of rural and urban areas. I also included an equal number of boys and girls in the study to ensure gender balance.

This research finds that children's hope is complex. I identified five qualitatively distinct ways in which they conceive hope, each impacting their sustainability engagement differently. Hope can either motivate or deter children from engaging in sustainability related actions, depending on its characteristics. Hope that involves goal setting, strategising, and enacting pathways to achieve goals, combined with trust in others to take sustainability actions, can motivate children. In contrast, hope characterised by mere wishing for positive outcomes, without willingness to act, can hinder motivation. This study maps a landscape of the five ways children conceive hope (Table 7.1), ordering them on a spectrum from most to least impactful regarding their impact on sustainability engagement. The landscape highlights differences between the five ways children conceive hope, including the defining characteristics of each hope type, their influence on sustainability engagement, and the factors that lead children to develop various hope types.

Most children possess some degree of constructive hope for the future world. Three of the five hope types that children conceive involve goal-directed and problem-focused thoughts leading them to believe they can take action to achieve positive futures (expansive, intermediate and emergent hope). This suggests that many children are actively engaged in generating solutions and taking steps towards realising positive outcomes. Notably, two of the five hope types, intermediate and expansive hope, representing 20% of the children included in the study, reflect a sophisticated understanding of leadership and pathways to achieving positive futures, along with strong motivation to enact them. Such findings challenge the notion that children are incapable of contributing meaningfully to creating positive futures (The Guardian, 2020).

Children have good awareness of the economic, ecological, and social challenges that threaten futures. Children acquire awareness of such challenges through media, family, and school. However, some children cannot identify potential solutions to such challenges. When children do not know how to mitigate sustainability related problems, they can become overwhelmed and resigned to living in severely degraded future environments. Accordingly, sustainability education must balance children's awareness of sustainability challenges with solution-oriented discussions to build hope and encourage active participation in working towards achieving positive outcomes.

Children's hope is strongly influenced by their social interactions. Experiences of collaborative sustainability goal-setting, collective strategising, and action-taking at home and school, along with learning about others' achievements in realising positive sustainability outcomes, can build expansive hope, the most powerful type of hope identified in this study for motivating sustainability actions. On the other hand, children who

have had limited opportunities to engage in collaborative efforts to realise positive outcomes can develop limited hope, which is characterised by lack of engagement in actions that can realise positive sustainability outcomes. Social interactions that provide support for regulating emotions such as anger and sadness related to feelings of environmental loss is also important. Without such support, children may demonstrate resignation to degraded futures and become apathetic.

This study used a combined theoretical framework. Namely, Snyder's cognitive theory of hope (1994, 1997) and McGeer's socially constructed views of hope (2004; 2008). Snyder's theory suggests that hope involves individual goal-setting, pathways, and agency thinking, while McGeer posits that hope is built through social interactions and trust in others. I drew from both theories to identify four key hope dimensions to guide this study: positive outlook to the future based on belief that sustainability goals can be met; perceived pathways to realise sustainability goals; perceived agency to realise sustainability goals; and trust in others to support the realisation of sustainability goals. The four hope dimensions guided me to design my data collection interview questions and data analysis processes. Combining the two theories enabled me to draw on (i) Snyder's theory to understand the cognitive dimensions of children's hope, including their capacities to problem-solve and strategise pathways to sustainability goals and act on them, and (ii) McGeer's theory to understand social dimensions of children's hope, namely how their trust in others to contribute to sustainability efforts influences the cognitive dimensions of their hope. Combining the theories further enabled me to identify challenges and opportunities for building children's hope for our future world in the context of sustainability education. For instance, challenges related to capacities to generate pathways to mitigate sustainability

challenges, and the importance of trust in others to act to realise positive outcomes to an individuals' motivation to act.

I used a phenomenographic methodology to conduct this study. I selected phenomenography due to its qualitative nature and its focus on exploring variation in the different ways individuals can conceive learning related phenomena with a view to informing teaching and learning (Åkerlind, 2008; Åkerlind et al., 2014; Rovio-Johansson & Ingerman, 2016; Rovio-Johansson & Lumsden, 2012). Using phenomenography enabled me to elicit rich descriptions of the various ways children conceive hope for our future world from their own perspectives, and accordingly provide recommendations for building hope in the context of primary sustainability education inclusive of various hope conceptions. I collected two types of data consistent with phenomenographic protocols. First, drawings of how children perceive the future world will look when they are adults, and second, open-ended, semi-structured conversational-style interview data. To collect the data, first children drew their representations of the future world and then they engaged in an interview to describe their drawings and provide insight into dimensions of their hope through responding to prompts. I analysed the data by: reducing the collected data to identify key themes relevant to the research questions; categorising key themes into categories; describing categories using quotes from the data; and, comparing and representing variation across the categories. I named the categories to represent a way of conceiving hope.

10.2 Addressing the Research Questions

This research addressed four research questions relating to children's conceptions of hope for our future world: How do children conceive hope for our future world? What factors influence how children conceive hope for our future world? What are variations in

children's hope for our future world? And, What are the implications for sustainability education? In the following sections, I summarise the key findings to each question that emerged from the research.

10.2.1 Research Question 1: How do Children Conceive Hope for Our Future World?

The research identified five qualitatively distinct ways in which children conceive hope for our future world: expansive hope, intermediate hope, emergent hope, limited hope and uncritical hope. I describe the characteristics of each hope type below.

Children with expansive hope (Table 6.2) have a positive outlook towards the future. While such children anticipate various ecological, social, and economic issues, they have a strong capacity to identify many individual, collective, political and leadership pathways to address them, leading them to feel positive. Children with expansive hope actively engage in, and express intent to engage in, efforts to realise positive sustainability outcomes. They trust their friends, family, the general community and politicians to engage in and support sustainability efforts. This motivates them to pursue pathways towards realising a positive future.

Intermediate hope (Table 6.3) is characterised by a mixed perspective towards the future. Children with intermediate hope anticipate the future will be mostly positive, with some negative aspects. Children with intermediate hope predict various current challenges of sustainability such as gender inequality and pollution will be mitigated through individual, collective and political pathways. However, they also perceive continuing human population growth and advancing technologies will inevitably lead to decreased natural landscapes and fighting over finite resources. Children with intermediate hope trust that their friends and communities will act to realise positive outcomes for future environments. However, they

are skeptical that governments will act, leading them to feel uncertain about the future and dampening their impetus to take sustainability actions.

Children with emergent hope (Table 6.4) anticipate a future marked by escalating economic, ecological, social, and political challenges. While they can strategise individual, collective, and political pathways to address these challenges, they are reluctant to act because they believe that positive sustainability outcomes are ultimately unattainable. Children with emergent hope lack trust in their communities and politicians to work toward sustainable futures, leaving them feeling unsupported in their desire for a better world. As a result, they become resigned to degraded futures, believing that their personal efforts to achieve positive outcomes would be futile.

Limited hope (Table 6.5) is characterised by a negative outlook towards the future. Children with limited hope envision apocalyptic futures filled with many unsolvable ecological, social and economic challenges. They feel overwhelmed by the scale of sustainability challenges, struggle to devise pathways to mitigate them, and lack confidence in their abilities to effect positive sustainability outcomes. Children with limited hope describe feeling dismissed from sustainability conversations due to their age. They expect future generations to prioritise their self-interests over sustainability concerns, which hinders their personal motivation to take sustainability actions.

Children with uncritical hope (Table 6.6) believe that current ecological, social and economic issues will be resolved through technological advances or spiritual intervention. They envision utopian style futures characterised by healthy natural landscapes and harmonious societies. Because children with uncritical hope assume that current

sustainability challenges will be resolved without their personal involvement, they absolve themselves of the personal responsibility to act to realise positive outcomes.

10.2.2 Research Question 2: What Factors Influence How Children Conceive Hope for Our Future World?

The research identified several factors that influence the development of each of the five identified hope types. I summarise the factors that influence each hope type one-by-one below.

Expansive hope is primarily shaped by two main factors and one subsidiary factor. First, experiences at school and home that support children in learning about sustainability challenges play a critical role. When children engage in setting sustainability goals collaboratively and collectively strategise and enact pathways to achieve such goals, they are motivated to believe in and work towards sustainable outcomes. Second, awareness of others' sustainability successes, coupled with personal experiences of achieving sustainability goals, motivates children to pursue further sustainable outcomes. This is because through such awareness, they come to believe that positive outcomes are achievable. To a lesser extent, the research finds that exposure to artworks that highlight sustainability challenges and encourage community participation in environmental protection can also help build expansive hope.

Intermediate hope is primarily influenced by school and home experiences and perceptions of future advances in technology and human population growth. School and home experiences that develop an understanding of sustainability challenges and promote collective engagement to address them foster a belief in the possibility of positive sustainability outcomes. This belief, in turn, builds hope and motivates children to take

sustainability actions. Conversely, fears related to human population growth and technological advancements, such as a decrease in natural landscapes and insufficient access to finite resources, can lead children to feel sceptical about the possibility for positive future outcomes. This dampens their motivation to act.

Emergent hope is shaped by experiences of adverse environmental events, perceptions of future advances in technology and human population growth, and a lack of trust in social support for positive sustainability outcomes. Children with emergent hope describe that their personal experiences of the adverse effects of bushfires (exposure to bushfire smoke) motivates them to act to minimise the likelihood of bushfires into the future, leading to a sense of control over, and hope for, the future. On the other hand, experiences of technological advancements and human population growth lead children with expansive hope to predict continuing trends of increased technological and human populations growth and feel resigned to worsening negative impacts. Emergent hope is also shaped by a lack of trust in others to contribute to realising positive sustainability outcomes. Children with expansive hope are sceptical that others will act to realise positive sustainability outcomes, making them feel isolated in their pursuit of sustainable futures and incapable of effecting positive outcomes on their own. Media that highlights sustainability challenges without offering solutions can also contribute to the development of emergent hope, as it can lead children to feel powerless to effect positive outcomes.

Limited hope is shaped by current negative experiences of reduced natural landscapes, rising living costs, the Covid-19 pandemic, and human population growth. Children with limited hope translate such negative experiences into predictions for continuing, similar experiences into the future. They are unable to identify pathways to sustainability challenges

and they describe feeling overwhelmed, scared and angry at older generations perceived inaction on them. Media that highlights environmental and societal challenges without offering solutions can exacerbate children's fears for the future, contributing to the development of limited hope conceptions.

Uncritical hope is shaped by expectations of utopian futures brought about through technology advances and spiritual intervention. Children with uncritical hope assume positive sustainability outcomes will occur without their personal involvement in realising them. This mindset fosters complacency and a reluctance to engage in sustainability actions.

10.2.3 Research Question 3: What are Variations in Children's Hope for Our Future World?

This research highlights (i) variation between the five qualitatively different ways that children conceive hope for our future world, and (ii) the factors that lead children to conceive particular hope types. There is little variation in children's hope across age, gender, school type and geographical location.

Variation Between the Five Qualitatively Different Ways that Children Conceive Hope

Variation in the five qualitatively different ways that children conceive hope relate to variation in future outlooks regarding belief that sustainability goals can be achieved, abilities to strategise and enact pathways to sustainability goals, and trust in various actors to support the attainment of positive sustainability goals.

This research finds variation in children's future outlooks across the five different hope types. Children with expansive hope have the most positive outlook, believing a range of ecological, social, and economic goals can be achieved. In contrast, children with intermediate hope have a mixed outlook, viewing some goals as achievable but expressing

resignation to challenges associated with human population growth and technological advancements. Children with emergent and limited hope have a negative outlook, perceiving degraded futures characterised by insurmountable sustainability challenges. Children with uncritical hope have a positive outlook based on their belief that technology or spiritual intervention will solve sustainability challenges without their involvement.

Children's abilities to strategise and enact pathways to realise positive sustainability outcomes vary across the different hope types. Children with expansive hope strategise the most pathways and the biggest range of pathways: individual, collective, political, and leadership pathways. They enact most of those pathways. Children with intermediate hope strategise and enact many individual, collective and political pathways, but unlike children with expansive hope do not identify or take leadership pathways. Children with emergent hope strategise some individual, collective and political pathways, however, they fail to enact them because they feel doing so would be futile. Children with limited hope struggle to identify any pathways and they engage in minimal actions. Children with uncritical hope do not engage in strategising pathways, or acting to realise positive sustainability outcomes, instead relying on external solutions.

Trust in others to work towards sustainability goals varies widely across the hope types. Children with expansive hope express the highest level of trust, relying on friends, family, community, and politicians to support sustainability efforts. Children with intermediate hope trust their communities but lack confidence in government support. Children with emergent hope have little trust in others, feeling isolated in their concerns for the future. Children with limited hope distrust others entirely, believing others will prioritise their own self-interests over acting to realise sustainable environments. Children with

uncritical hope children do not rely on others, assuming that technology or spiritual intervention will address challenges.

Variation in the Factors that Lead Children to Conceive Different Hope Types

This research identifies variation in the factors that influence how children come to conceive different types of hope. Children's conceptions of hope for our future world vary based on what they focus on when imagining our future world and their background experiences, and social contexts. Children with expansive hope proactively generate pathways and take action to address perceived future sustainability challenges. Their positive outlook develops through supportive experiences at home and school, where they engage in collaborative efforts to set and achieve sustainability goals. Children with intermediate hope also plan and act to achieve sustainability goals, influenced by similar supportive experiences. However, unlike those with expansive hope, they resign themselves to challenges related to human population growth and technological advancements, resulting in a more tempered and uncertain outlook. Children with emergent and limited hope perceive the future negatively. They are reluctant to engage in efforts for positive sustainable outcomes, believing such outcomes are unattainable due to a lack of perceived social effort. Those with limited hope focus on environmental degradation, feeling overwhelmed by anger, sadness, and despair, which leads to a bleak outlook. Negative experiences of environmental degradation and a lack of support in their social contexts influence this focus. Finally, children with uncritical hope rely on external solutions, such as technological or spiritual interventions, to solve future sustainability challenges. This reliance leads to a lack of personal engagement and a more passive approach to sustainability issues.

10.2.4 Research Question 4: What are the Implications of the Findings for Sustainability Education?

The findings have implications for both Australian Sustainability Education policy, which is realised through the Australian Sustainability Cross-curriculum Priority (SCCP), (Table 2.1) and sustainability education practice more broadly.

Implications for Australian Sustainability Education Policy

Integrating expansive hope into the Australian Sustainability Cross-curriculum Priority (SCCP) can guide teachers to motivate children's sustainability engagement (Table 9.1). The findings of this study show that currently, only children who conceive two of the five hope types (intermediate and expansive hope), that is 40% of children, feel empowered by their educational experiences to ameliorate sustainability challenges. This highlights a significant gap in the current curriculum. While the SCPP aims to develop the knowledge, skills, values, and worldviews necessary for promoting sustainable living, it lacks a specific focus on motivation. Expansive hope, as identified in this study, has a powerful effect on motivating sustainability engagement. Accordingly, incorporating expansive hope into the SCPP has the potential to increase motivation and the frequency of children engaging in generating and enacting pathways towards realising positive sustainability outcomes.

Implications for Sustainability Education Practice

The research proposes a framework of eight sustainability education practices designed to build children's hope for practical application. These practices, based on factors that influence various types of hope, offer actionable strategies for teachers to implement in their classrooms. Encouraging collaborative goal-setting, facilitating collective strategising,

and supporting collective action can potentially build expansive hope conceptions. Sharing sustainability success stories further reinforces the development of expansive hope. In addition, addressing barriers to hope through practices like promoting critical thinking and emphasising solutions may progress children's hope from lower hope types (emergent, limited, and uncritical hope), towards more desirable types (intermediate and expansive hope).

10.3 Research Limitations

This study, like all research, has several limitations. These primarily relate to researcher objectivity, transferability of findings and my novice researcher status.

Achieving complete researcher objectivity in phenomenographic studies is challenging. Researchers' interpretations of participants' descriptions of their conceptions may be influenced by their own biases (Ashworth & Lucas, 2000). To mitigate this, I engaged in continuous reflexivity, documenting my thoughts and assumptions in a research journal. I consulted with my supervisory team to design and refine non-leading interview questions. Additionally, I shared interview transcripts, interpretations, and the progressive formation of hope categories with my team to challenge my interpretations and enhance the credibility of my findings.

Like all qualitative research, the findings reported in this study are not universally transferable to all contexts (Ashworth & Lucas, 2000). This study represents how 28 children in Victoria, Australia conceived hope for our future world at a specific point in time. Children in other places and contexts may conceive hope differently. The research participants in this study may also conceive hope differently at different points in time. However, like Åkerlind (2012), I argue that while phenomenographic findings are not universally generalisable, they

can be transferable to similar contexts. Some of the identified hope categories, such as expansive and limited hope, are likely transferable to contexts where children have similar experiences and face comparable sustainability challenges (Åkerlind, 2012; Roser et al., 2021).

To enhance the transferability of the research findings to other contexts I took several steps. First, I collected data from 28 children (the upper limit for phenomenographic research, Sandberg, 1997) to ensure that a broad range of hope conceptions were captured. Second, I recruited a diverse range of children (varying in age, gender, school type, and geographical location) to reflect a wide range of ways that hope can be conceived and the experiences that can shape it. Additionally, I provided detailed information about the research context and participant characteristics (Chapter 5) in this thesis to enable readers to assess the applicability of the findings to their particular contexts. By implementing such measures, I aimed to increase the likelihood that aspects of this study's findings and emergent hope-building practices could be relevant and contribute to building children's hope across diverse sustainability education contexts.

As a novice researcher, my lack of experience with phenomenography was a potential limitation (Åkerlind, 2012). Challenges for novice phenomenographers include consistent application of phenomenographic research methods and difficulty in managing large data sets (Tight, 2016). To address this, I took several steps. First, I sought guidance from Professor Christine Bruce, an expert in phenomenographic methodology, to direct me to relevant literature and help me refine my research design. Next, I conducted a thorough pilot study to refine my research design and data collection methods. Then, I presented my research at an international phenomenography conference, seeking feedback from experts

including Ference Marton (see for example, 1981; 1988; 1994; 2007), Rovio-Johannsen (1999; 2012; 2016), and Svensson (1994; 1997). Following this I collected data for my main study, seeking guidance from my supervisory team during data analysis. Such measures strengthen the credibility and trustworthiness of my findings, despite my novice researcher status.

10.4 Contributions to the Field

This study makes several contributions to research on children's hope for our future world and its implications for sustainability education. It builds upon and extends previous literature in this field. Below, I describe these contributions.

This study broadens existing understandings of hope in several keyways. First, it contributes a more nuanced categorisation of children's hope by identifying five distinct types of hope and their impacts on sustainability engagement. This aligns with, but expands on, previous research indicating that different types of hope are more or less constructive for taking sustainability actions (e.g., Flowers & Wilkinson, 2018; Kelsey, 2020; Ojala, 2012a). A more nuanced understanding of children's hope types is important because it allows for more targeted sustainability education practices to build hope.

This study also expands current empirical research by exploring conceptions of hope for our future world in a new context – primary-aged children (8-12yrs) in Victoria, Australia. Previous work has focused on secondary-aged children and young adults in Sweden (Ojala, 2012a, Ojala, 2017), America (Li & Monroe, 2019; Stevenson & Peterson, 2016) and the United Kingdom (Finnegan et al., 2022). It is significant that this research contributes understanding about how younger children conceive hope for our future world. Younger children are in a formative period for developing environmental attitudes and behaviours

that can carry into adulthood (Chawla, 2007). Accordingly, I consider primary school represents a key window for sustainability education to build hope. Contributing research on hope in the Australian context is also important. Geographic diversity in findings of how hope for our future world is conceived contributes more diverse contextually influenced conceptions which may lead to more comprehensive approaches to building hope in sustainability education (Wagner et al., 2018).

This research builds upon previous findings on the significant role of social factors in shaping hope, particularly in the context of sustainability education. The study validates McGeer's theorisation that hope for futures is influenced by social support systems, including communities and political contexts. Findings highlight how supportive home and school experiences involving collaborative sustainability goal-setting, strategising, and action lead children to believe that positive future outcomes are possible. Conversely, perceptions of lack of government commitment to sustainable futures impacts whether children conceive positive futures are achievable. The research also supports Kelsey's (2020) emphasis on the importance of sharing sustainability success stories to build hope. Findings demonstrate that such stories lead children to realise efforts for sustainable outcomes are worthwhile and this inspires them to act to achieve them. Furthermore, this study extends previous findings on the importance of social support for building hope (Ojala, 2017) by providing insight into specific socially supportive experiences that build hope, such as family involvement in community gardens (see Chapter 6).

The adoption of a phenomenographic approach in this study offers a novel perspective on hope in sustainability education, revealing the diverse ways children conceptualize hope. Phenomenography is predominantly and traditionally applied to research focused on

investigating literacy and numeracy related phenomena with a view to improving learning in those domains (Marton & Booth, 1997). It has rarely been used to investigate sustainability related phenomena and advance learning in the context of sustainability education.

Employing phenomenography in this study enabled me to offer new insights into the various ways that children's conceptions of hope can be categorised and understood. This in turn enabled me to propose targeted suggestions for building hope in sustainability education that are reflective of children's conceptions. Including and reflecting children's conceptions of sustainability-related phenomena in sustainability education aligns with Payne's (1998) assertion that incorporating learners' perspectives is crucial for effective sustainability education, as it addresses their needs, interests, and understandings. This study demonstrates that phenomenography offers a valuable approach for incorporating and reflecting children's perspectives in sustainability education policies and practices, thereby providing support for future phenomenographic sustainability-related studies.

Key contributions of this research include proposals for building hope within sustainability education policy and practice (Tables 9.1 & 9.2). Specifically, this study proposes integrating expansive hope into the Australian Curriculum's Sustainability Cross-Curriculum Priority (SCCP) and provides a framework of eight hope-building practices for teachers. These contributions address calls from scholars like Ojala (2012a) to incorporate hope-building into sustainability education. The proposals, grounded in empirical evidence of how children conceive hope and what influences their hope, may provide a foundation for building a type of hope that can motivate sustainability actions across diverse student populations.

10.5 Suggestions for Future Research

This research has raised new questions and identified areas for further investigation. Such questions emerge from the findings, limitations, and implications of the study. Table 10.1 provides a list of such questions and suggestions for future research to address them. Conducting recommendations for future research can build on this study's findings to further develop our understanding of children's hope for our future world and the implications for sustainability education.

Table 10.1

Future Research Questions and Potential Research

<i>Research Question</i>	<i>Potential Future Research</i>
How do children's conceptions of hope for our future world change over time?	Longitudinal studies tracking individual children's hope in the short term (days/weeks/months) and long term (primary through secondary school)
How do contextual factors influence children's hope for our future world?	Comparative studies investigating hope among children from different cultural, socioeconomic, and geographic settings
How effective are the proposed hope-building practices identified in this study for building hope in sustainability education?	Action research projects implementing and evaluating the effectiveness of the hope building practices
What is the relationship between hope and engagement in behaviours that can lead to positive sustainability outcomes?	Mixed-methods studies combining qualitative phenomenographic approaches with quantitative measures
How does technology influence children's hope for the future?	Research exploring the impact of technology on children's hope for our future world
How do teachers conceptualise and teach about hope in sustainability education?	Phenomenographic studies investigating how teachers conceive the importance of building hope in sustainability education and ways to build it.

How do specific environmental events impact children's hope over time?

Investigations looking at how events like bushfires or floods affect children's hope in both short-term and long-term timeframes.

What is the relationship between children's hope for our future world and their wellbeing?

Research examining connections between hope and wellbeing in children.

10.6 Conclusion

This doctoral research provides new insights into how children conceive hope for our future world. By engaging children in discussions about their future outlooks, knowledge of strategies to address anticipated challenges, involvement and intentions to engage in positive actions, and trust in others to contribute toward these outcomes, five distinct types of hope for the future emerged. These hope types are hierarchically ordered based on their increasing influence on motivation to take sustainability actions. The experiences shaping each hope type are identified and used to inform a set of proposals for sustainability education policy and practice to foster the most impactful form of hope identified — expansive hope. The policy proposal is to integrate expansive hope into the Australian National Curriculum's Sustainability Cross-curriculum Priority (SCCP). The practice proposal is for teachers to implement eight hope-building practices to build expansive hope.

I argue that integrating expansive hope into sustainability education can lead children to take more meaningful actions toward achieving positive outcomes. This research shows that children with expansive hope believe in their ability to make a difference, feel a sense of agency over the future, and work collaboratively with others. They trust in collective action, focus on solutions rather than problems, and take a proactive approach to addressing sustainability challenges. I argue that building this kind of hope in the context of

sustainability education is important, especially as sustainability challenges are predicted to grow in complexity and urgency (Garcia-Reyes, 2021) and some children are already demonstrating resignation to degraded futures (Hickman, et al., 2021).

10.7 Final Statement

In this thesis, children's descriptions of hope for our future world reveal deep concerns and lofty aspirations, contributing to understanding of how they conceive hope, the factors that shape their hope and the importance of collective efforts to realise positive futures. I have recently begun applying the proposed hope-building practices to my own sustainability education practice in the context of species conversation with a small group of children which is showing promising results in building expansive hope. Through applying the practices, I am experiencing my own hope increasing, inspired by the children's passion and determination when supported in their efforts. This experience underscores the reciprocal and contagious nature of hope, as discussed in Chapter 2, highlighting its potential to create a ripple effect of action towards the achievement of positive sustainability outcomes.

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Appendix A: Information and Consent (Guardians and Participants)



INFORMATION

Hi, my name is Kelly-Ann O'Bryan and I am PhD student at James Cook University. I am a Victorian registered teacher and have been working in Victorian schools for approximately 7 years.

I would like to invite your child to participate in a research project which will explore how children perceive our future world. The research has the potential to support education practitioners and policy makers in the design and delivery of Sustainability Education in Australian Schools.

If you and your child consent to the research, your child will be invited to (a) draw a picture of how they think the world will look in 20 years or when they are an adult, and (b) engage in a discussion about what they have drawn and how they perceive the future world. The discussions will be audio-recorded and later transcribed. The completed activities will be used to inform my PhD thesis.

The activities will be completed in approximately 25 minutes: First, a 15-minute drawing session and following this, a 10-minute follow-up discussion.

Your child's responses and details will be kept anonymous. Your child will not be individually identifiable in my thesis or associated publications. I will provide a link to my thesis and any associated publications for you to read at the conclusion of the study.

If you would like for your child to participate, please sign the Guardian Consent Form below.

Kind regards,

Kelly-Ann O'Bryan

James Cook University

(B.Ed.Hons; M.Ed; PhD Candidate)

GUARDIANS: INFORMED CONSENT FORM

PROJECT TITLE: Children's Conceptions of Hope for our Future World

I understand the aim of this study is to explore how children perceive the future world.

I consent for my child to participate in this study, the details of which have been explained to me in an information sheet.

I understand that my child's participation will involve him/her completing a drawing of how they envision the future and a follow-up discussion activity and that the discussion will be audio-recorded to be later transcribed.

I acknowledge that

- taking part in this study is voluntary and I can request that my child stop participating in it at any time without explanation or prejudice.

- any information my child gives will be kept strictly anonymous and no names will be used to identify my child.

I consent to my child participating in the study

Yes ☐

No ☐

Signature_____

Date_____



PARTICIPANTS: INFORMED CONSENT FORM

I understand the aim of this project is to explore how I think the future world will look.

I consent to participate in this project, the details of which have been explained to me.

I understand that my participation will involve completing a drawing and a follow-up one-on-one discussion. I agree that the researcher may use the results as explained to me.

I acknowledge that:

- any risks and possible effects of participating in the research have been explained to my satisfaction
- any risks and possible effects of participating in the research have been explained to my satisfaction
- taking part in this study is voluntary and I can stop taking part in it at any time without explanation
- any information I give will be kept strictly confidential/anonymous

(Please tick to indicate consent)

I consent to participate in the drawing activity

☐	Yes	☐	No
☐	Yes	☐	No
☐	Yes	☐	No

I consent to a one-on-one discussion about my drawing

I consent to the discussion being audio-recorded

Appendix B: Drawing Activity Introduction

I'm going to get you to draw a picture of how you think the world will be in the future, in about 20 years or when you're an adult. Like your mums, dads, or my age. Think about what the world is like now, things like nature and people and our way of life, then think about what you think the world will be like in the future – will things change or stay the same, will they be better or worse, or perhaps some things better and some things worse? There is no right or wrong answer because the future hasn't happened yet. I'm just interested to know what you think. I'm not judging your drawing either, the drawing is just an activity to get your brain thinking about what our future world will probably be like. After that, we'll talk about what you've drawn, and I'll ask you some questions about what you think our future world will be like and why. There are ten coloured pencils, a grey lead pencil and a pen. You can use some or all of them, or just a grey lead or pen. You can have as much or little time as you need, just let me know when you're finished.

Appendix C: Interview Questions

Open-ended Focus Topic Interview Questions

1. Can you explain what you have drawn please?
2. How do you feel about the future world?
3. How would you feel if the future that you predict comes true?
4. How would you feel about living there?'
5. How do you think the future world could be better?
6. How could you help make the future world better?
7. Is there anything that you are doing now to help make the future world better?
8. How do you think others will treat the environment?

Unstructured Probing Questions

1. Can you tell me more about that?
2. Can you explain further?
3. Is there anything else that you would like to say about that?
4. What do you mean by that?
5. Can you give me an example?

Appendix D: Ethics Approval



James Cook University
Townsville Qld. 4811 Australia

Human Research Ethics Committee

Research and Innovation Services Ph: 47815011; Fax: 47815521 email: ethics@jcu.edu.au

Human Research Ethics Committee		Application ID	
APPROVAL FOR RESEARCH OR TEACHING INVOLVING HUMAN SUBJECTS		H8102	
PRINCIPAL INVESTIGATOR	Kelly-Ann O'Bryan		
COLLEGE	Education		
CO-INVESTIGATOR(S)			
SUPERVISOR(S)	Neus Evans and Kearrin Sims		
PROJECT TITLE	Children's Conceptions of Hope for our Future World		
APPROVAL DATE:	27/05/2020	EXPIRY DATE:	31/08/2023
		CATEGORY:	1
This project has been allocated Ethics Approval Number H8102, with the following conditions: 1. All subsequent records and correspondence relating to this project must refer to this number. 2. That there is NO departure from the approved protocols unless prior approval has been sought from the Human Research Ethics Committee. 3. The Principal Investigator must advise the responsible Human Ethics Advisor: - periodically of the progress of the project, - when the project is completed, suspended or prematurely terminated for any reason, - within 48 hours of any adverse effects on participants, - of any unforeseen events that might affect continued ethical acceptability of the project. 4. In compliance with the National Health and Medical Research Council (NHMRC) "National Statement on Ethical Conduct in Human Research" (2007), it is MANDATORY that you provide an annual report and a final report on the progress and conduct of your project. This report must detail compliance with approvals granted and any unexpected events or serious adverse effects that may have occurred during the study.			
Human Ethics Advisor :	Taylor, Subhashni		
Email :	subhashni.taylor@jcu.edu.au		
This project was Approved by Executive on 27 May 2020			

Appendix E: Overview of the Research and its Application to Australian Primary Sustainability Education Policy and Practice

