Divide and conquer: the application of social marketing to adolescent sun protection

Melissa Lynch
University of Wollongong

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Divide and Conquer: The Application of Social Marketing to Adolescent Sun Protection

Melissa Lynch

Master of Science
2010

Centre for Health Initiatives,
Health & Behavioural Sciences
University of Wollongong
I, Melissa Lynch hereby declare that this thesis, submitted in partial fulfillment of the requirements for the award of Masters of Science (Research), in the School of Health Science, Faculty of Health and Behavioural Sciences, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Melissa Lynch
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I am indebted to all the participants who so generously and happily gave their time and thoughts to this project.

And thanks to Jensen for the inspiration.
ABSTRACT

The sun protection practices of Australian adolescents are not only shown to be consistently inadequate, but even the low levels of positive behaviours are on the decline. This is despite adequate knowledge levels, and numerous previous educational and mass media campaigns/interventions. This research therefore aims to examine adolescent sun protection behaviour and attitudes in the context of a social marketing framework in order to begin the process of developing a strategic and comprehensive intervention/campaign.

This research utilised two stages of research, the first, consisting of 14 focus groups with NSW adolescents, the second, consisting of a large scale survey with 2,450 NSW adolescents.

While the focus groups resulted in a number of interesting themes to aid in understanding adolescent sun protection behaviours, they also developed a number of brand loyalty segments. These brand loyalty segments reveal that attitudes and behaviours amongst adolescents are not homogenous; instead, there are in fact specific groups with differing and unique perspectives, requiring tailored intervention strategies. When tested in the second stage of research, it was established that the brand loyalty segments developed by the author do in fact exist. Furthermore, two of these segments, the Forgetful Attempters and the Risk Reducers, display great potential for future targeting.
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<tr>
<td>UVA</td>
<td>Ultraviolet light, type A</td>
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<td>WBS</td>
<td>Web-based survey</td>
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<td>PBS</td>
<td>Paper-based survey</td>
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<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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1. INTRODUCTION

Due to the Australian climate and lifestyle, as well as a predominantly fair skinned population, skin cancer is the most prevalent form of cancer in Australia (Australian Institute of Health and Welfare, 2000). Australia is reported to have the highest skin cancer incidence rates in the world (Arthey & Clarke, 1995) with one in every three people who spend their childhood or adolescence in Australia developing skin cancer later in life (Australian Institute of Health and Welfare, 2000). While melanoma in childhood and adolescence is rare, it is estimated that up to two thirds of a person’s risk of melanoma is acquired in the first 15 years of their life (NSW Health Department and The Cancer Council NSW 2001).

While both children and adolescents are reported to display inadequate sun protection practices, adolescent behaviours are consistently shown to be more inadequate than that of younger children (Stanton, et al., 2004). Largely because the protection practices of younger children are primarily governed by parents, and they tend to have tighter school sun protection policies. An example of tighter policy is the ‘no hat, no play’ initiative where students are forced to sit in the shade if they do not have adequate sun protection during their lunch break.

Overall, Australian adolescents are reported to have an overall low adherence to sun protection guidelines (Fritschi, et al., 1992; Summerville & Watt, 2003; Dobbinson et al., 2005); and in recent years a general decrease in specific sun protection practices, and an increase in burn rates, has also been noted (Dobbinson et al., 2005). This results in adolescents being 1.6 times more likely to sunburn than adults (Dobbinson et al., 2005). These declining positive behaviours and increasing negative behaviours have created a considerable increase in the gap between adolescent and adult sun protection behaviours (Dobbinson et al., 2005). While this gap is perhaps inevitable as young people reject the ‘protection focus’ of their parents, these current behaviour trends are widening the already significant divide (Dobbinson et al., 2005).

These inadequate levels of sun protection persist despite consistent efforts to increase knowledge and promote safe practices (Dobbinson et al., 2005). Such efforts have largely been school based programs and mass media campaigns. Reviews of previous mass media and educational interventions indicate increases in skin cancer knowledge, however only minimal changes in behaviour (Lowe et al., 1999; Geller et al., 2002; Kristjansson et al.,
2003). Hence this behaviour is not attributable to lack of knowledge or awareness, as adolescents are shown to know how and why they should protect themselves (Wetton, 1996). Rather, it is correctly attributed to attitudes and social norms developed via influences such as lifestyle (Mikati, 2005), culture (Heartbeat, 2003), body image, appearance & fashion (Sjoberg et al., 2004), media (Norman, 1998) and unrealistic optimism (Sjoberg et al., 2004). These competitors work to create an overwhelming desire for a tan and the notion that protecting oneself from the sun is 'uncool'.

Consequently, attempts to promote positive sun protection have failed to redress these negative behaviours and attitudes; and have thus far failed to develop comprehensive interventions to successfully target the psyche of Australian adolescents. For the current research, the foundations of social marketing are employed to develop a foundation for future pro-protection initiatives. As yet, the principles of social marketing have not been effectively, or systematically, applied to adolescent sun protection in an attempt to curb their risky behaviours, despite its proven success with adolescent in other complex risk taking behaviours such tobacco use (Protect the Truth, 2007) and safe sex (Cho et al., 2004).

This work is thus the first step in a ladder leading to a truly tailored, insightful and potentially effective social marketing campaign. This exploratory stage of research aims to understand and interpret current attitude and behaviours and generate a platform for additional studies in the development and potential implementation of a tailored sun protection campaign for Australian adolescents. An extensive literature review has been provided in Chapter 2 which provides valuable scope as to the complex nature of adolescent sun protection behaviours. However, this research will provide the foundation of this new effort by exploring the nature of adolescent sun protection through primary research, and potentially find a future direction for segmentation and targeting. This foundation will be created by addressing the following questions;

- What are the current behaviours and attitudes towards both sun protection and tanning?
- What sun protection products are favoured?
- Are there any specific behaviour groups (segments) that can be identified?
- Are there any recommendations for potential intervention tactics?
2. BACKGROUND

This chapter identifies and reviews a range of research literature in order to address a number of key objectives: to identify and understand the issues of skin cancer and sun protection and why these are important areas to address; to provide an understanding of the relevance of these issues to adolescents; to develop an understanding of adolescents' behaviours, knowledge and attitudes towards sun protection and tanning and identify and outline the competitors that have aided in the creation of adolescents’ negative sun protection practices; and to identify and analyse previous interventions and/or campaigns targeted at adolescents.

2.1 WHAT IS SKIN CANCER?

The term ‘cancer’ is a general one that is used to describe diseases that result from abnormal cell division and can form in most parts of the body. If the cells of a person's body are abnormal (i.e. they do not divide and grow as they normally should), these can develop into a lump which is referred to as a tumour (although not all cancers present tumours). A tumour can be classified into one of two groups, either benign or malignant. A benign tumour is not cancerous and can generally be fully removed without a major threat to one's health, or of recurrence. A malignant tumour on the other hand is cancerous and thus dangerous to one's health. A tumour is considered malignant when the cells invade and destroy surrounding tissue and the possibility exists for it to spread to other parts of the body via the blood or lymph systems (Cancer Council NSW, 2006a).

Skin cancer is one of many forms of cancer; it is however an extremely prevalent one, with approximately 81% of all new cancer diagnoses in Australia being skin cancers (Cancer Council Australia, 2006). Skin cancer is caused almost wholly by ultraviolet radiation (UVR) from the sun and other sources. When UVR penetrates the outer layers of the skin (the epidermis and the dermis) it damages and disrupts the cells causing them to swell and burn (what we thus refer to as sunburn). If and when the damage caused to these cells accumulates and is not repaired by the body’s natural defense systems, then it can lead to changes in the actual structure of the cell (i.e. skin cell abnormality). This can lead to the cells becoming unstable and the possibility of developing a tumour (Cancer Council NSW, 2006a).
There are a number of different types of skin cancer and growths that can develop from unstable cells. There are however two specific types of malignant skin cancers, these being non-melanocytic skin cancer and melanomas. Non-melanocytic skin cancers (NMSC) are the most common form and include basal cell and squamous cell (see Figure 1) carcinomas, among others. Both squamous and basal cell carcinomas are malignant forms of cancer; however, not all NMSCs are malignant in nature, and some forms, such as actinic (solar) keratosis, are very easily treated (Harris et al., 2009). It must also be noted that not all skin cancers develop into lumps/tumours on the skins surface and can also develop via blood borne cancer cells. Squamous cell carcinoma for example is capable of locally infiltrative growth and can also spread to regional lymph nodes and distant metastasis, often moving to the lungs (Gray et al., 1997).
On the other hand, melanoma, which affects the melanocyte skin cells, is both the rarest and most dangerous form of skin cancer (Cancer Council NSW, 2006b). If left untreated the cancer cells of a melanoma can spread quickly to other parts of the body (Cancer Council Australia, 2006b).

The treatment of these cancers is dependent on the nature of the individual cancer itself. In some cases carcinoma can be treated through imiquimod (prescription drugs that act as an immune response modifier) or photodynamic (a combination of laser and light sensitive drugs) (Harris et al., 2009). Skin cancers can also be frozen off using liquid nitrogen (cryotherapy), scraped off (curettage) or burnt off (cautery). For melanomas in particular, surgery is often used to remove the skin cancer and a small area of skin surrounding it; for deeper, more severe melanoma a wide area of the skin may need to be removed, including local lymph glands (Cancer Council Australia, 2006b). Melanoma is also treated by radiotherapy and chemotherapy (Cancer Council Victoria, 2006b).

2.1.1 Levels of Incidence

Australia has the highest rate of skin cancer incidence in the world, with approximately 270,000 new cases of non-melanocytic skin cancer being diagnosed each year and a continual increased rate of 4% - 5% per year. There are around 400 Australian deaths each year from NMSC (Cancer Council Australia, 2006a). Non-melanocytic skin cancer is the most common type of cancer in Australia for both men and women between the ages of 15 and 44 years (Cancer Council Australia, 2006a), while melanoma is the third most common in Australian women and fourth in Australian men. Melanoma, as the more severe but rarer form of skin cancer, affects around 7,000 Australians each year, causing around 900 annual deaths (Cancer Council NSW, 2006b).

2.1.2 Forms of Protection

Overexposure to ultraviolet radiation is wholly attributed to the sun’s rays, or exposure to solariums, whereby the more an individual’s skin is exposed to the UV rays, even without resulting in burning, the greater their risk of skin cancer (Cancer Council Australia, 2006). While there are other risk factors that can increase an individual’s chance of developing skin cancer- such as fair hair, fair skin, red hair, and being freckled (Wetton, 1996), or a family history of skin cancer (Cancer Council Australia, 2006)- there are also numerous ways to protect one’s skin from UV damage. Following are the key recommendations from both The
Cancer Council NSW and The Cancer Council Australia in regards to how skin cancer can be prevented:

- Don’t sunbake or get sunburnt.
- Use shade whenever you can.
- Avoid outdoor activities/take particular care between 11am and 3pm daylight saving time (10am - 2pm Eastern Standard Time).
- Slip on a shirt with a sun protective neckline and longer sleeves and cover exposed skin with clothing.
- Slap on a broad brimmed or legionnaire hat.
- Use SPF30+ broad spectrum water-resistant sunscreen.
- Wear wrap around or close fitting sunglasses to protect against eye damage.

### 2.2 WHY TARGET ADOLESCENTS FOR SUN PROTECTION?

Most of the literature reviewed indicated that adolescents were the focus of studies because the majority of sun damage occurs during childhood and adolescence (Lower et al., 1998b; Cokkinides et al., 2001; Geller et al., 2002; Summerville & Watt 2003). A systematic review of epidemiologic studies of childhood sun exposure by Whiteman and associates (2001) concluded that a high level of sun exposure during childhood is a strong determinant of melanoma risk. This is further supported by The Cancer Council Australia (2006) who report that most cases of skin cancer in Australians are as a result of overexposure in childhood. This is largely because between 50 and 80% of an individual’s lifetime sun exposure occurs during childhood and adolescence (Weinstock et al. 1989; Banks et al., 1992; NSW Health Department & The Cancer Council NSW, 2001). While actual occurrence of melanoma in the childhood and adolescent years is rare, it has been estimated that up to two thirds of a person’s overall risk of melanoma is acquired in the first 15 years of life (NSW Health Department & The Cancer Council NSW, 2001). Moreover, the Australian Institute of Health and Welfare (2000) state that one in every three people who spend their childhood or adolescence in Australia will develop skin cancer later in life.

This high level of sun exposure during childhood and adolescence is attributed to the greater amount of time children and adolescents spend in the sun in comparison to adults (Buller & Borland, 1999) which takes into account school activities and the characteristics of their holidays and recreational activities (Norman, 1998), and the more sensitive skin of young
children (NSW Health Department & The Cancer Council NSW, 2001; World Health Organisation, 2001). Interestingly, it has been claimed that reducing sun exposure during childhood and adolescence, by using sunscreen alone, could decrease an individual’s lifetime risk of developing non-melanoma skin cancers by up to 78% (Stern et al., 1986).

2.2.1 Childhood (Pre-adolescent) Sun Protection Behaviours

In this instance ‘childhood’ refers to pre-adolescents, who are primary school age (approximately 4 – 12 years) rather than pre-school aged children (under 4 years). In comparison to adolescents, children’s sun protection behaviours are largely governed by their parents, and this group often has tighter regulations and/or more policies at educational facilities (i.e. primary schools). Factors that contribute to parental influence include parents’ knowledge of sun protection practices, attitudes to sun protection, and own sun protection behaviours. The influence of educational facilities is in the form of policies and provisions of sun protection practices that encourage and govern the protective behaviours of children.

2.2.1.1 Parental Influences

Sun protection is regarded by parents as an important health priority to avoid the risk of skin cancer in the future, as well as the more immediate effects of pain and guilt associated with sunburn. Overall, research has consistently found that parental knowledge about the importance of sun protection for children is high (Smith et al., 2002; Department of Health & Ageing, 2006). Despite this, the sun protection of Australian children remain at levels much lower than optimum (Johnson et al., 2001).

An instrumental reason for this inadequate level of positive protective behaviours is that parental vigilance regarding sun protection is highest for activities that take place away from home, particularly if they are of long duration and/or involve water (e.g., the beach). Parents are more likely to adopt multiple strategies (e.g., sunscreen, hat, shade) for activities such as going to the beach than for general play when a single strategy of hat or sunscreen is regarded as adequate (Department of Health & Ageing, 2006). These behaviours lead to children being notably protected when at the beach on a warm sunny day, but lacking in protection for many other occasions and when it is cold and/or overcast. Of course, damage to one’s skin can occur at any outdoor location and with any weather type.
Many parents also report that complying with all the recommended sun protection guidelines for children is challenging. Some of the principle obstacles outlined are that children object to re-application of sunscreen throughout the day; are becoming increasingly fashion conscious about what they like to wear at a younger age and are difficult to keep in the shade when playing (Department of Health & Ageing, 2006). Additionally, parents also have conflicting knowledge about the health benefits of sunlight. Some parents still believe in the therapeutic benefits of the sun for their child (Harrison, Buettner & MacLennan, 1999); however, while most parents are aware of the importance of vitamin D, there is still uncertainty as to how much exposure to sunlight a child needs for healthy levels (Department of Health & Ageing, 2006).

2.2.1.2 Educational Facilities

The fact that students can spend up to eight hours per week outdoors during school hours, in particular between the hours of 11 am and 3pm (Schofield et al., 1991), has long since led to heavy involvement of teachers, principals, support staff and the general community in promoting sun protection within, and outside of, the school facilities. In fact, most government primary schools now have written policies in place under the school’s Student Welfare Policy that outline the actions a school will take to address sun protection (Cancer Council Australia, 2006). This duty of care has thus meant that primary schools are expected, and even required, to provide shade facilities and sunscreen to their students, and not schedule sporting activities for midday in an effort to prevent unnecessary sun exposure (Schofield et al., 1991; Randle, 1997). Early childhood centres and schools are in fact regarded as an important partner in the provision of sun protection especially in relation to shade and “No Hat No Play” policies (Randle, 1997).

2.2.3 Child v Adolescent Protection

A survey of 133 Queensland mothers found that despite mothers having a high level of sun protection knowledge, one third of children had been sunburnt by six months of age and 82% had been sunburnt by the age of three (Stanton et al., 2000). This reiterates the point that sun protection among children is below optimal levels (Johnson et al., 2001). In spite of this, however, children’s level of sun protection is consistently shown to be much higher than that of adolescents. In addition, previous research has reported that while primary school children have positive sun protection behaviours and attitudes, these attitudes and behaviours become less positive when children enter adolescence (Stanton et al., 2004).
2.3 UNDERSTANDING ADOLESCENCE

2.3.1 What is Adolescence?

Adolescence is the name given to the developmental stage in which the body and brain transform from the immature state of childhood to that of adulthood (Steinberg & Morris, 2001; Boyd, 1997; Weiten, 1998; Peterson, 2004). It has been further defined by Cavaiola and Kane-Cavaiola (1989) as “the psychological response to the biological event of puberty within a particular social, environmental and cultural context” (p 12). Furthermore, beyond the transition of puberty, the process of adolescence is also often viewed as a series of developmental tasks relating to the development of one’s sense of identity (Cavaiola & Kane-Cavaiola, 1989); this, of course, involves the advancement of numerous life aspects such as peer relationships, independence from one’s family, vocations, values and the development of sex-role identities (Spooner et al., 1996). Adolescence is also associated with physical and biological changes (Peterson, 2004) as traditionally, the adolescent transition is associated with noticeable changes to secondary sexual characteristics during puberty (Kelley, Schochet & Landry, 2004).

2.3.2 Who are Adolescents?

The exact boundaries of when an individual is considered an adolescent is a highly subjective area. In fact, a review of the academic literature highlights that adolescence has been defined in a number of ways, including age ranges, year of schooling, or attendance at an educational institution. Adolescence has been defined as the period from approximately 12 to 18 years of age (Boyd, 1997; Peterson, 2004); however, the specific age boundary classifications differ within the academic literature and between organisations. Boyd (1997) suggests that adolescence can include young people up to the age of 20 years old, while Weiten (1998) states that adolescence begins approximately at the age 13 and ends around 22. The World Health Organization (WHO) defines adolescents as those aged between 10 and 19 years (World Health Organization, 2005).
2.3.2.1 ‘Adolescence’ in Sun Protection Literature

To narrow the overwhelming disparity between definitions of what is an adolescent, attention was paid to literature that focused on adolescent sun protection. In the sun protection literature, many have used age boundaries when defining adolescents. Again however, the lack of conformity in age range is clear with studies defining adolescence as commencing at age 11 (Cokkinides et al., 2001; Lower et al., 1998b), age 12 (Richards, McGee & Knight, 2001; Lowe et al., 2000), age 14 (Boldeman et al., 1997), and age 15 (Boldeman et al., 2003); and ending at age 16 (Lower et al., 1998b), age 17 (Lazovich et al., 2004; Richards, McGee & Knight, 2001), age 18 (Cokkinides et al., 2001; Lowe et al., 2000), and even age 19 (Robinson et al., 1997; Boldeman et al., 1997; Boldeman et al., 2003).

2.3.3 The Adolescent Journey

While the exact nature and definition of ‘adolescence’ appears to be varied in terms of age-range and circumstance, numerous researchers believe that it is the grade at school that should be used to categorise adolescence rather than the exact age of the individuals (Jones et al., unpublished). It is believed that the grade at school can help to outline stages of social and mental development as well as outline important life events such as the school certificate and the HSC. Rob Marjenburg, a director of the Australian market research company Heartbeat, has spent decades working with adolescents in different areas of both commercial and health benefit market research, and from this experience has been able to develop the foundations for ‘The Adolescent Journey’ (Marjenburg, 2006). This framework allows each stage of adolescence to be grouped and identified by grade at school, as well as providing an overview of the dominant characteristic of each of these groups. The journey is as follows:

2.3.3.1 Grade Seven and Eight:

Acceptance: The individual is still on the basic level of a child. This stage is based on group acceptance and it stresses a social norm of not going against the majority. The individual group members are generally afraid to speak out against the group and there is generally a level of ‘leadership’ by the more dominant members of the group, or the ‘cool’ people. This generates a level of repressed individualism and is an extremely difficult environment to develop a group discussion. This group tends to buy into anything big, such as fads and phases as their consumerism is based on competing in a popularity contest.
2.3.3.2 Grade Nine and Ten:

*Expression:* The individual moves away from mass general acceptance and more to a level of personalisation. They are still reliant on groups but have the ability to express individual characteristics within those groups. They express themselves through clothing, music, art, products, brands etc. as they push the limits of the rules in an attempt to discover their own individuality. They are better able to verbalise themselves than those individuals in years 7 and 8, and they enjoy learning about the adult world. Brands and brand images become increasingly important.

*Obsession:* This is more common in males than it is in females. This characteristic sees the individual becoming engulfed by a particular sport/activity (e.g. surfing). They have an overwhelming desire to better themselves and discover their talents, as a method for finding their place in the world. In doing this, they are not only able to display their own personality, but also compare themselves to others. This characteristic is highly based on earning respect from peers. Often, the chosen activity becomes extremely important to them and they will religiously dedicate their time and efforts to it.

*Chaos:* Also more common in males and often simply referred to as ‘randomness’. Chaos involves committing a stunt or creating a scene that is unexpected or out of the ordinary. They try to gain attention by ‘pulling pranks’, as well as to give themselves an energy outlet. Often done in groups, this characteristic is existent because this stage of development is in a sense trapped between two worlds. While they are maturing, their life is not very serious as yet and they are still young enough to have fun and not be expected to behave as adults.

2.3.3.3 Grade Eleven and Twelve:

*Sophistication:* The HSC is looming, and many individuals in this stage take up part time jobs. Relationships begin to transcend the groups, as girls in particular, are maturing and developing a desire for sophistication. Their taste in brands changes to those that are perceived to be aimed at an older target audience, and they consider themselves to be fairly adult. The inclusion of workplace interactions also changes their mindset and money becomes an important issue.
2.3.4 The Gender Divide

In trying to understand this cohort, it must be made clear that there are some major differences evident during this time between genders. As mentioned in the Adolescents Journey (Marjenburg, 2006), females are more likely to show traits of ‘Sophistication’, while ‘Obsession’ and ‘Chaos’ are more common in males. Furthermore, adolescent females tend to worry more about family, personal adequacy, personal health, and ornamental issues than adolescents males (Brown et al, 2006). Males display more risk taking behaviours than females (Pat-Horenczyk et al., 2007; Kelley, Schochet & Landry, 2004; Alberts, Elkind & Ginsberg, 2007) as well as different risk preferences (Gardner & Steinberg, 2005).

2.4 ADOLESCENTS AND RISK TAKING

Risk taking has been defined by Wyatt and Peterson (2005) as “the participation in potentially health-compromising activities with little understanding of, or in spite of an understanding of, the potential negative consequences” (p 1). It is widely accepted that while young people have knowledge and understanding of the risks involved with a particular behaviour, they will still pursue this behaviour when there are strong motivations and drivers in play (Whitehead, 2005; Kelley, Schochet & Landry, 2004).

Overall, adolescents as a collective group display risk taking behaviours in numerous areas, including sun protection (Galileo Kaleidoscope, 2003). Risk taking behaviours have also been widely documented in tobacco use (O’Loughlin & Tarasuk, 2003; Cohen et al., 2003; Scal et al., 2003; Baillie et al., 2005; Eaton et al., 2006; Duberstein Lindberg et al., 2000; Kulbok & Cox, 2002; van der Rijt et al., 2002); sexual activity (Taylor et al., 2003; Eaton et al., 2006; Duberstein Lindberg et al., 2000; Kulbok & Cox, 2002); nutritional i.e., bulimia, anorexia and excessive dieting (Eaton et al., 2006; Croll et al., 2002) as well as the excessive consumption of unhealthy foods (O’Loughlin & Tarasuk, 2003); substance use including alcohol (Zapert et al., 2002; Eaton et al., 2006; Duberstein Lindberg et al., 2000; Kulbok & Cox, 2002; van der Rijt et al., 2002); physical inactivity (O’Loughlin & Tarasuk, 2003; Cohen et al., 2003; Eaton et al., 2006); and dangerous driving (Eaton et al., 2006).

Adolescent risk taking has received a great deal of attention from researchers, for not only can they compromise the health and well-being of the individual during adolescence, but can also directly or indirectly compromise the future life-course of the young person (Jessor,1998;
Steinberg & Morris, 2001). While many adults also engage in risk behaviours, the adolescent cohort perform these behaviours more frequently and often more excessively than their adult counterparts (Steinberg, 2007; Gardner & Steinberg, 2005).

The health behaviours of adolescents have thus been described as a transitory health journey (Whitehead, 2005), as negative behaviours are usually resolved by adulthood (Steinberg & Morris, 2001, p 86). During this adolescent journey, many adolescents regard risk taking as their primary right to participate in new experiences (Whitehead, 2005) and/or use negative behaviours for novelty seeking (Kelley, Schochet & Landry, 2004).

2.4.1 Cosmetic Motives and Risk Taking Behaviours

There are a number of risky behaviours in adolescence that stem specifically from cosmetic and social motives, such as excessive dieting (Eaton et al., 2006; Croll et al., 2002) and smoking for weight management (Lowry et al., 2002). Takriti, Lee and Mann (2001) report not wearing bicycle helmets as another area of adolescent risk taking. Even though helmets are proven to be effective in reducing head, brain and severe brain injuries (Takriti, Lee & Mann, 2001) and wearing one is a legal requirement when riding a bike in Australia, the usage rates significantly decrease within the teenage years. In large part because the cosmetic appearance of wearing the helmet has more importance to the adolescent than the safety it provides and the legal risks of not complying with the law (Takriti, Lee & Mann, 2001).

2.4.2 Peer Influence and Risk Taking Behaviours

The peer group becomes increasingly important during adolescence as individuals are spending less time with their families and more time with their friends. The peer group are able to influence each other, not necessarily through coercion but via admiration and respect (Steinberg & Morris, 2001). In general the presence of peers can increase risk taking behaviours among teenagers (Steinberg, 2004; Steinberg, 2007; Gardner & Steinberg, 2005). In a study conducted by Gardner and Steinberg (2005) that assessed risk taking behaviours exhibited whilst participating in video driving computer games, the results showed teenagers were twice as likely to display risk taking behaviours in the presence of peers. Importantly, individuals not only took more risks, but also evaluated risky behaviour more positively when with peers rather than when by themselves.
2.5 ADOLESCENT SUN PROTECTION

2.5.1 Adolescent’s Sun Protection Behaviours

Australian adolescents are reported to have low adherence to sun protection guidelines. A study involving a random sample of 972 Australian secondary students aged 13 through 15 years found that these students on average spent more than two hours outdoors during peak UV periods over two consecutive weekends, and that neither sunscreen nor hats were used for more than half of the time spent outdoors (Fritschi, et al., 1992).

Lowe and Associates (2000) stated that over two-thirds of Australian high school students (68%) reported being sun burnt in the prior summer, and 36% of these students reported being burnt to the point of blisters at least once in their lifetime. This finding was supported by a survey of 277 secondary school students in Sydney where students used a self-report scale of one through five, where one represents ‘never’ and five represents ‘always’, to indicate their personal use of sun protection methods. The results indicated that adolescents used sun protection less than ‘usually’, demonstrating a low adherence to current recommendations (Summerville & Watt, 2003).

The low levels of compliance by Australian adolescents to sun protection guidelines are further confirmed by the 2003-04 National Sun Survey (Dobbinson et al., 2005) where 669 adolescents aged 12-17 years answered questions on their sun protection behaviours and incidence of sunburn on summer weekends, as well as on attitudes and behaviours related to tanning, solaria and other sun related health beliefs. The results showed poor adherence to sun protection generally, and highlighted two areas of particular concern:

- The use of sunscreen, previously the most favoured sun protection measure used by adolescents, has decreased significantly.
- The gap between adolescent and adult sun protection behaviour is even wider than the researchers anticipated

For example, while 80% of adolescents interviewed for the National Sun Survey 2003-04 reported being outdoors on summer weekends during peak UV times for more than 15 minutes, only 19% sought shade (Dobbinson et al., 2005). Approximately 38% of respondents wore some form of headwear, but only 5% wore a wide brimmed hat. Only 37% reported that
they had used 15+ sunscreen when outdoors and 11% wore a three-quarter-length or long-sleeved top (Dobbinson et al., 2005). Sunburn rates remain high and are indicative of the overall poor sun protection behaviours practiced by this age group. One in four adolescents reported being sunburnt when outdoors on summer weekends; adolescents were 1.6 times more likely to sunburn than adults (Dobbinson et al., 2005).

In a New Zealand study conducted over one weekend in the summer of 1997, over a quarter of the respondents aged 12-17 years reported getting sunburnt (Richards, McGee & Knight, 2001). International literature also supports adolescents’ low adherence to sun protection guidelines. For instance, a US telephone survey of 2,192 youths reported that less than one third of adolescents practice effective sun protection behaviours (Cokkinides et al., 2001).

While the use of SPF 15+ sunscreen is the most common form of sun protection by Australian adolescents, the level of use is also slowly declining over time (Livingston et al., 2001). Overall, the use of sunscreen and sun hats by adolescents is well below optimal, and for those that do apply sunscreen, levels of reapplication are exceptionally small (Richards, McGee & Knight, 2001). The use of clothing as a means of sun protection has also been found to be extremely low (Lowe et al., 2000).

In terms of gender, males exhibit higher levels of hat wearing when outside on a sunny day (Summerville & Watt, 2003) as well as using protective clothing (Lowe et al., 2000). Sunscreen use, wearing sunglasses, and staying in the shade are higher among females (Lowe et al., 2000; Livingston et al., 2001; Summerville & Watt, 2003). Lower and Associates (1998b) reported that male adolescents were more likely to follow adequate sun protection than female adolescents, such as wearing a hat and protective clothing.

Previous studies have also found that sun protection behaviours decrease as age increases. For example, in terms of secondary students’ reported use of clothing as a means of sun protection, levels of use are highest in male students in lower years, and slowly decrease as the grade increases (Lowe et al., 2000). They also reported that 65% of Australian school adolescents reported wearing a hat in year 7 while only 43% wore a hat in year 12. The 2003-04 National Sun Survey found that younger adolescents (12-14 years) were more likely to wear a hat and apply sunscreen but less likely to wear sunglasses than older adolescents (15-17 years) (Dobbinson et al., 2005), Lower and Associates (1998b) reported that teenagers aged 11 to 13 years were more likely to follow sun protection guidelines, and a study
conducted in the United States found that as teenagers got older their use of sunscreen decreased (Hall et al., 2001).

Many other factors have been associated with adolescent sun protection practices. For example, adolescents have been reported to follow sun protection practices if they receive information regarding sun protection from family and friends (Cokkinides et al., 2001). Conversely, poor sun protection behaviours are associated with lower perceived parental sun protection practices (Balanda et al., 1999), and are also correlated with the adolescent’s participation in other risk related behaviours such as drink-driving, smoking cigarettes, being sexually active and being physically inactive (Hall et al., 2001).

2.5.1.1 Intentional Exposure

With a decline in the use of protective behaviour comes an increase in consciously exposing oneself to the sun in order to gain a tan. According to Shoveller and Associates (2003) adolescents are actively attempting to obtain a tan using two distinct methods; intentional tanning and incidental tanning. The first, intentional sun-tanning, encompasses deliberate attempts to obtain a tan. This includes purposely laying in the sun, and the use of artificial tanning methods such as solaria and tanning creams. Incidental sun-tanning, on the other hand, is the process of getting a tan while engaging in an outdoor activity (other than lying in the sun). In this situation, a suntan is seen as a natural outcome of participation in outdoor activities. Despite the fact that an incidental tanner is also consciously avoiding sun protection in order to gain a tan, this method of obtaining a tan is perceived by adolescents as more acceptable and healthier than intentional tanning (Shoveller et al., 2003). Although these two methods for tanning are completely different, they are not necessarily mutually exclusive (i.e. not necessarily one or the other).

2.5.1.2 Use of Indoor tanning

It is important to consider not only the current protective behaviours of adolescents, but also identify further risky behaviours that they may exhibit, such as the use of indoor tanning facilities (i.e. solariums). Several Australian and international studies have investigated adolescents’ use of indoor tanning facilities. Boldeman and Associates (1997) surveyed 1,502 Swedish adolescents regarding solarium use and found that 57% had used a solarium four or more times during the previous year, with a marked increase in use among teenagers between the ages of 14-15 years. Encouragingly, a survey of Swedish adolescents conducted
in 1993 and then again in 1999, found that solarium use had decreased by half over this time period (Boldeman et al., 2003).

Fortunately there are currently only a small number of Australian adolescents using indoor tanning facilities. Recent data indicates that 3% of adolescent males and 4% of adolescent females have ever used a solarium. Females aged 15-17 years reported highest usage with 7% of these respondents having accessed solariums (Dobbinson et al., 2005). This is unlike the use of solariums by adolescents in the United States, where approximately 10% of adolescents had used solariums in the one year. Furthermore, in the US solarium use increased from 7% for 14-year-old girls to 16% by the age of 15, this figure then doubled again by the age of 17, where a total of 35% of 17-year-olds reported use of solarium (Geller et al., 2002). Further research in the US found that teenage girls were more likely to have used indoor tanning than teenage boys, and that those who used, or intend to use indoor tanning, were less likely to use sun protection, less knowledgeable about skin cancer risks, more likely to agree that tans are attractive, and more influenced by social factors (Lazovich et al., 2004). This difference between the United States and Australia may be due to the greater levels of skin cancer awareness and greater amounts of organised skin cancer/sun protection education that exists in Australia (Randle, 1997), as well as higher UV radiation levels recorded with the Australian climate compared to the United States (The Cancer Council Victoria, 2006), which makes it easier to obtain a tan naturally.

However, knowledge relating to the safety of solaria is also low amongst Australian adolescents. In a study involving 300 13-17 year olds, up to 50% of females and 38% of males perceived solaria as safe (Galileo Kaleidoscope, 2003). So although Australian adolescents’ usage of solaria remains low (Dobbinson et al., 2005) the large-scale perception of safety may result in increased usage later, especially among young women. This has the unfortunate possibility of growing to mirror the alarming statistics of solarium use in the United States. However, this increase usage in Australia may never eventuate, particularly due to the recent death and wide spread media coverage of anti-solarium campaigner and skin cancer sufferer Clare Oliver, followed by governmental promises of improved regulation and education regarding solarium use in Australia.

While there has been no definite agreement that tanning equipment increases the development of malignant melanoma, a link has been established with its role in increasing non-melanoma skin cancers, moreover, it has been suggested that the overall increase in skin
cancer cases may be linked to the increased popularity of indoor tanning (Murray & Turner, 2004). Solaria generally use ultraviolet light type A (UVA), rather than ultraviolet light type B (UVB) (as UVB causes burning) so users do not have a red burn after use. However UVA light still causes melanoma, to the extent that 15 minutes in a solarium is comparable to providing as much radiation as half a day spent on the beach (Australian College of Dermatology, 2003).

2.5.2 Adolescent Sun Protection Knowledge

2.5.2.1 Common Misconceptions

Evidence has been found to outline several areas where knowledge levels are low, such as research conducted for the Cancer Council NSW which found that 94% of surveyed respondents acknowledged that it is unsafe or very unsafe to sunbake in the middle part of the day, but 70% thought it safe to sunbake in the morning or the afternoon with this figure rising to 75% outside the Sydney metropolitan region (Galileo Kaleidoscope, 2003). In reality, while the period between 10am and 1pm is considered the most dangerous part of the day to be exposed to the sun, the danger of exposure does not disappear outside of these hours.

The misconception that certain skin types are not at risk is also an area of concern. As previously indicated, skin type is a known risk factor, however, this means that darker complexions have less risk of cancer than their fairer counterparts, but the possibility still exists for darker skin types to develop skin cancer. People with olive skin often perceive that they are not at risk (Heartbeat, 2003). This argument is often used to justify tanning behaviours (Heartbeat, 2003).

The lack of use of appropriate protection is also attributed to the perception that sun protection is associated with water, and long periods of time in the sun. Galileo Kaleidoscope’s (2003) report to The Cancer Council NSW found that 73% of adolescents in a study of 300 13-17 year olds were not at all/not very likely to put on sunscreen when outside for under 30 minutes. This is due to the perception that only extended periods of time spent in the sun can cause damage to the skin, but in fact, any exposure to the sun can cause damage.
2.5.2.2 General Knowledge

Adolescents’ lack of avoidance (sun protection) behaviour is nonetheless not attributed solely to a lack of general skin cancer knowledge (despite the specific misconceptions identified above). Although targeting a younger demographic (5-11 year olds), a comparison of European children with Australian and New Zealand children found that the latter had significantly higher sun awareness than that of their European counterparts (Wetton, 1996). It is justifiable to assume that this knowledge would be carried through to adolescence.

Numerous studies have shown adolescents to have good knowledge about the general principles of sun protection. In 1996, over 80% of adolescents were reported as having adequate knowledge of the issues related to skin cancer prevention, frequency of burning and burning on a cloudy day (Livingston et al., 2001). Nearly half of the 23,915 Australian secondary school students surveyed for a study by Lowe and Associates (2000) thought they were likely to develop skin cancer at some point in the future (45% of males and 47% of females), with the lowest level of perceived risk being for those students in Year 7 (36%) and increasing to 51% with Year 12 students (Lowe et al., 2000).

While protection behaviours are low, only 10% of secondary students thought that there was little or nothing they could do to avoid getting skin cancer and 39% actually thought there was a great deal they could do in order to lower their risk levels. From this we can see that adolescents are aware of protection options. The Cancer Council NSW study of 300 adolescents aged 13-17 years also found that 95% of those surveyed knew they should apply sunscreen before going outdoors. However, only 85% reported actually applying sunscreen prior to outdoor activity, and dropped sharply to 27% applying sunscreen for outdoor activity of less than 30 minutes (Galileo Kaleidoscope, 2003). The most recent national data available shows that adolescent use of sunscreen has dropped even further with 61% of the 699 adolescent respondents reporting that they do not use sunscreen at all despite having adequate knowledge levels (Dobinson et al., 2005).

2.5.3 Adolescent Sun Protection Attitudes

As stated above, adolescents have a high level of knowledge of the causes of skin cancer and appropriate sun protection practices, but this knowledge does not result in the adoption of appropriate sun protection practices (Robinson et al., 1997; Lower et al., 1998b).
Researchers must therefore address the attitudes within the adolescent age cohort that may be instrumental in understanding their behaviours.

An extremely important issue that needs to be understood when delving into the rationale behind adolescents’ lack of appropriate sun protection methods is their attitudes towards tanning. Suntanned skin remains highly desirable, especially for females, with 60% of adolescents stating they like to get a tan and 32% reporting trying to get a suntan compared to 15% of adults (Dobinson et al., 2005). Additionally, a reported 83% of students desire at least a light suntan, with a slightly higher proportion of females (86%) exhibiting this response (Lowe et al., 2000).

Adolescents are shown to believe that tanned skin is desirable (Lowe et al., 2000; Lamanna, 2004); and that tanned people are healthier (Dobinson et al., 2005; Douglas, McGee & Williams, 1997); sportier; more attractive (Douglas, McGee & Williams, 1997; Galileo Kaleidoscope, 2003) and more popular (Galileo Kaleidoscope, 2003) than paler skinned people. This is supported by attitude factors identified in a regression analysis by Richards, McGee and Knight (2001): “I feel more healthy with a suntan”, “a suntan makes me feel more attractive to others”, “a suntan protects you against melanoma”, and “most of my friends think that a suntan is a good thing”. Geller and Associates (2002) found that US adolescents’ lack of (or sporadic) sun protection use, more frequent sun burns and the use of solariums, was associated with a preference for tanned skin, having friends who were tanned, and placing value in burning in order to obtain a tan (Geller at al., 2002, p 1012).

This positive attitude towards tanning is highly prevalent in, but not exclusive to, adolescents. Today, the perceived need for a tan is so overwhelming that even the threat of skin cancer is not enough to decrease the desire. In a British survey, 14% of the sample population of 1000 reported that they would still want a tan even after experiencing the worry of skin cancer (Anonymous, 2001). Also, while 70% of respondents reported that people with suntans take risks with their health, a similar percentage of respondents think that people with suntans look healthy (Anonymous, 2001). This conflict of attitudes is manifested in dangerous behaviours despite knowledge of risk, to the point where Galileo Kaleidoscope (2003) reported that 37% of the 300 Australian adolescents surveyed will intentionally sun bake in the early morning or late afternoon and 18% will intentionally sunbake in the middle of the day. Furthermore they found that 12% still use tanning oils to speed up the tanning process.
2.5.4 Understanding the Knowledge/Behaviour Gap

2.5.4.1 Lifestyle

One explanation given for this pattern of inadequate levels of protection is that it could be that adolescents are only selecting sun-protection behaviours that fit their lifestyles. For example, the higher use of sunscreen in females can be attributed to its similarity to the use of make-up, moisturisers and skin care products, most of which now come inclusive of SPF 15+ sunscreen (Lowe et al., 2000). Additionally, the higher use of hats by males is likely to be based more around fashion and appearance motivations than as a means of protecting oneself against the sun (Lowe et al., 2000); hats are more acceptable as a fashion item for males than females. Adolescents appear to be adopting behaviours that take minimal efforts on their part, which can also be seen by the lack of reapplication of sunscreen. This indicates that adolescents hold a certain level of laziness, or complacency, in regard to skin protection (Mikati, 2005).

2.5.4.2 Australian Culture

The Australian culture encompasses a stereotype of an outdoors lifestyle, the beach and bronzed bodies. This stereotype has developed an attitude that these aspects are part of being an Australian, or in other words, they are ‘Lifestyle Rights’ (Cancer Council NSW, 2003) and therefore are considered both desirable and the social norm for symbolising and identifying with being Australian. The beach, sun and sand have long been considered an integral part of the Australian culture, particularly when the post-WWII period saw a new focus on leisure (Booth, 1994) and the ‘national type’ moved towards a concept of the ‘Australian way of life’. The beach was a central image of this life, as it began to replace the images of the outback that had long since been a representative of Australia (White, 1997), and came to represent the ideals of Australian culture. With these images came the development of beach subcultures, including the surfing sub-culture (Booth, 1994) and the formation of images of national identity such as the iconic ‘bronzed- Aussie lifesaver’ (White, 1997) and the stereotyped tanned surfer. As the beach became an integral part of being an Australian and the associated images were developed, so did the sun-worshipping and tanning behaviours that were amalgamated with it (Anonymous, 2001).
2.5.4.3 Body Image, Appearance and Fashion

The ‘tan for beauty’ culture is not exclusive to adolescents. The trend began after World War II when the racially based need to remain pale to stress superiority and style was replaced by one to obtain a tan (Anonymous, 1990; Randle, 1997). American sociologist Thorstein Veblen’s ‘Theory of the Leisure Class’ explains that tanned skin had become a symbol of conspicuous leisure (Anonymous, 1990). According to Goldensohn (2001) a suntan has become the twentieth century symbol for relaxation and success, for often physical beauty is tied to symbols of prosperity and leisure, and having a tan implies that you have nothing more to do with your time than laze in the sun and have the means to enjoy leisure activities in sunny climates (i.e. travel) (Glodensohn, 2001; Randle, 1997).

Tanning truly hit mainstream popularity when fashion designer Coco Chanel made the practice fashionable in the 1920s (Volk, 2005; Randle, 1997) making statements such as “The 1929 girl must be tanned” (Randle, 1997, p 462). This view has become internalised to the point now where having a tan is overwhelmingly associated with being a ‘fun, happy person’ who lives an outdoor lifestyle, while the pale person is associated with spending lots of time indoors. Tanned skin is characterised as being attractive, normal and acceptable, while pale skin is characterised as being abnormal and socially inappropriate (Lupton & Gaffney, 1996).

Concurrent with this behaviour and attitude, we must acknowledge that fashion and appearance are extremely important for adolescents. As an individual reaches the adolescent stage, their bodies begin to physically change, they begin to experience increased physical attraction to others, become more aware of body image and experience increased self-evaluation (Rosenblum & Lewis, 1999). With this comes an increased concern about one’s own appearance (Shoveller et al., 2003). Shoveller and Associates (2003) state that for most adolescents the first stage in developing sun-tanning behaviours is when feelings of physical attraction towards others emerges, as well as the increased desire to be physically attractive for others, which create motivation for tanning (p 306).

Cosmetic motives as well as social acceptance powerful factors in risk taking, especially for adolescent girls, and those more concerned with their appearance are more likely to be interested in tanning (Sjoberg et al., 2004). In fact, Randle (1997) stated that amongst adolescents, body image and self esteem were more important factors to teenagers than the knowledge of risks associated with harmful UV exposure. Overall, the concept of self image
and the influence of fashion have been reported by young people as issues that have a significant impact on the decisions they make when in the sun (Mikati, 2005).

Researchers have begun paying greater attention to the role of parents, peers, and the media (sociocultural influences) on body image and behaviour of adolescents, these factors clearly help to construct and influence attitudes and behaviours through the messages they deliver (McCabe & Ricciardelli, 2003). The media has the ability to create and set standards of beauty within a society; as “fashion provides the means by which images of the self can be created and displayed, and the mass media are the vehicle for its dissemination” (McDermott, 2000. p 39). In generating and distributing these standards of beauty and fashion, the media encourages individuals to attempt to comply with the standards in order to fit the social norm of beauty. It is stated that “both the awareness of societal pressures and the internalisation of social standards of appearance were extremely significant predictors of body-image, eating dysfunctions, and self-esteem in young people” (McCabe & Ricciardelli, 2003. p 3). Shoveller and Associates (2003) state that adolescents begin to experiment with tanning when external influences such as the media, become greater than the influence of their parents. Additionally, the peer pressure to conform to these influences is inevitably stronger than the influence of both parents and health education (Norman, 1998).

McDermott and Associates (2005) believe that overall the media is becoming generally supportive of sun protection issues. Unfortunately in today’s society, although showing improving signs of being proactive regarding the images they portray, the media is still responsible for a pro-tan message. In fact, according to Norman (1998) the fashion industry and the media continually undermine the efforts of sun protection campaigns, largely because the media is constantly bombarding youth with images of celebrities and models with perfect tans, which unbeknownst to the viewers are generally fake. Furthermore, the media presents “images of scantily clad and suntanned young people as desirable role models” (Norman, 1998, p 22). As mentioned previously, the images of tanned fashion designer Coco Channel in the mass media set about creating a whole new desire for having a tan (Volk, 2005; Randle, 1997) - such is the power of the media and celebrities that they have the ability to sculpt and reinforce even the unhealthiest of habits. A similar negative modeling situation reported is that of smoking; where the influence of celebrities has been criticised for encouraging adolescents to take up the habit. In fact, a survey of over 5000 12-17 year old in NSW found that seeing celebrities smoke encouraged young people to smoke (Anonymous, 2006). Other research
shows that favourite movie stars can influence smoking trial and uptake in adolescents (Distefan, Pierce & Gilpin, 2004).

Commercial magazines are deemed to be one of the most significant sources of both character and image formations in female adolescents (Duke & Kreshel, 1998) and are seen as "vehicles for the early socialisation of young adolescent girls into the traditional appearance-based and sexual standards of femininity" (Duke & Kreshel, 1998, p 48). McDermott (2000) conducted a content analysis of both Dolly and Girlfriend (the two most popular teen magazines in Australia) which included assessment of images of models and celebrities in regards to physical characteristics and sun protection measures. The results found that the most common tan level portrayed by female adolescent models was that of a light tan (51%), followed by no tan (25%), medium tan (18.5%) and dark tan (4.5%). Furthermore, she found that there was minimal portrayal of sun protection measures such as models being placed in the shade (15%); only 17% of models were portrayed as wearing ‘sun safe coverage’ clothing on the upper body, only 3% of models wore wide-brimmed hats, and there was no sunscreen portrayal in any of the outdoor settings (McDermott, 2000).

In a study conducted by McDermott and Associates (2005) the researchers studied magazines, television programs and movies that were the most popular among the 14-17 year old demographic. They found that a light tan was the most common tan level portrayed in magazines (55%); and that television characters were likely to have a light tan (56%), with approximately 10% of the television sample portraying medium tans. Fortunately, only 1% of the sample had a dark tan. Similarly, the analysis of movies found that 59% of the sample portrayed light tans (McDermott et al., 2005). In addition, there was a significant association between the level of tan portrayed and gender. Females were more likely to be portrayed with medium tans, but notably, they were also more likely to be portrayed with no tan. The sun protection message was confined to 6% of models wearing hats, and 13% being in a shaded setting in magazines; 8% hat wearing and 12% in the shade for television; and movies were found to have 17% of characters wearing a hat and 17% using shade. The wearing of protective clothing when outdoors was found to be the most common form of protection portrayed in these vehicles (McDermott et al., 2005).
In the current media climate, the topic of skin cancer and anti-solarium media coverage has been prominent in the Australian media. This pro-protection buzz has been created by anti-solarium campaigner Clare Oliver, who at age 25, was diagnosed with melanoma and passed away not long after. The high profile story saw media coverage in countless media channels and created national discussion on both the importance of sun protection, and the need for regulation regarding solarium use. While the tragic story of Clare Oliver has changed the climate of complacence regarding sun protection within Australia, and has increased positive messages within the media, for how long this will be sustained is unknown.

2.5.4.4 Unrealistic Optimism

While the overall risky behaviours of the adolescent group have been outlined, it is still possible that a reason for these behaviours could be the high levels of unrealistic optimism reported in this cohort. Unrealistic optimism causes individuals to understand the risks involved, but to ignore them, or under-estimate their own individual risk compared to others (Sjoberg et al., 2004); as Clarke and Associates (2000) stated, “unrealistic optimism occurs when people perceive their own personal outcomes as being more positive than those of other people in similar circumstances” (p 368).

Extreme levels of unrealistic optimism have been found in adolescents (both male and female), and have been linked to anxiety reducing behaviours (Sjoberg et al., 2004) which can lead to the high levels of risky behaviours in numerous health areas exhibited by this group. This concept implies that while individuals may understand the risks involved with their behaviour, they can subconsciously reduce their own levels of anxiety and technically live in a form of denial to the consequences of their actions. For example, a Swedish study conducted by Sjoberg and Associates (2004) it was found that adolescents perceived their personal risk levels from tanning to be smaller than the risk to others.

This characteristic can be compared to other risky activities that offer short term gains with long term consequences, such as smoking. Some adolescent smokers (and sometimes smokers in general) use cigarette smoking as a form of weight management (Paxton, Valois & Wanzer Drane, 2004; Lucas & Lloyd, 1999) as well as a moderator for negative moods (Lucas & Lloyd, 1999). This occurs in spite of their knowledge of the long term health impacts that smoking has. The perceived positive effects on their mood, appearance and self-perception in
the short term are additional contributions to levels of unrealistic optimism that allow them to disregard the threat of the long term effects.

2.6 CHANGING THE BEHAVIOURS

Tanning is considered a risky behaviour that is extremely hard to change, especially in the adolescent age cohort (Sjoberg et al., 2004). Douglas, McGee & Williams (1997) state that the adolescent perception of tanning is that it increases levels of attractiveness, is healthy and overall boosts their self esteem, and that this positive attitude is held in spite of numerous health promotion programs. Of concern to researchers is that adolescence is also a critical time in the development of sun tanning habits and the perceived norms of the suntanned body image, and that “interventions to prevent the adoption of sun tanning among teens represent an important strategy for reducing the risk of developing skin cancer later in life” (Shoveller et al., 2003. p 300).

2.6.1 Adolescent Sun Protection Campaigns/Interventions

Despite adolescents being in a high-risk group for poor sun protection behaviours, few intervention studies available in the published academic literature have focused on changing adolescent sun protection behaviours. Such efforts have largely been school based programs and mass media campaigns that have focused predominantly on awareness and education. For example:

- Kristjansson and Associates (2003) evaluated a Swedish school based intervention program based on an education kit which was administered by teachers. The kit consisted of a manual for teachers, overhead transparencies, a short video and recommendations and instructions for sun protection behaviours which aimed to raise the students’ consciousness of skin cancer risks, which they believed could lead to a progression in the stages of change. The intervention was administered to 184 adolescents in years 7 and 8 (aged 13-15 years). The results indicated an increase in knowledge of skin cancer risk factors, although attitudes of students relating to abstaining from sunbathing and tanning remained relatively unchanged.

- Geller and Associates (2003), an Australian research project, evaluated the Environmental Protection Agency’s SunWise school program. The program is a national environmental and health education sun safety program aimed at primary and secondary students (K-8)
to promote positive sun protection habits. Results of the evaluation indicated a significant increase in knowledge, increase in intention to play in the shade and modest changes in the intentions to use sunscreen.

- Lowe and Associates (1999) used a RCT to evaluate a school-based program trial in Australia. Students in grades 8, 9 and 10 in the intervention group received a program that addressed issues such as the need to protect yourself from the sun, behavioural strategies, personal and social images of having a tan and changes in the school environment. The results indicated an improvement in the intervention group’s knowledge, but minimal changes in sun protection behaviour in grade 8 and 9, which were not maintained through to grade 10.

- Norman and Associates (2007) conducted a two year intervention study with 819 Californian adolescents aged 11 to 15 years who were recruited through their primary care providers. The intervention was based in the primary care settings and included brief counseling from the primary care providers, computer sessions, telephone assessments, individualised printed feedback, printed manuals, tip sheets mailed to participant’s homes and free samples of SPF 15 sunscreen. The intervention was implemented at 3, 6, 15 and 18 months. The results indicated that sun protection behaviours were positively associated with the intervention sessions.

With the exception of Norman and Associates (2007) who used a multicomponent counseling approach, all of the aforementioned campaigns relied on the principles of health promotion to dictate their direction, as well as taking a mass media approach and/or choosing to focus solely on education. By choosing to educate rather than focus on direct behaviour change, the interventions/campaigns have limited their capacity to impact on the actual sun protection behaviours of adolescents.

Norman and Associates (2007), on the other hand, directly targeted behaviours through counseling and initiated their intervention via primary care physicians rather than a school based program. While this study produced positive results, as a large scale intervention program it lacks feasibility in terms of cost (in terms of finance and time) to both the intervention provider and the primary care physicians. That is, the number of expensive and individualised components may prove prohibitively costly on a larger audience and it relies heavily on the time of physicians. As Norman and Associates (2007) acknowledged in their study conducted in the United States, their findings would be limited to those adolescents who have health insurance and, “It is likely that the impact of individual-level interventions is
constrained by the broader policy and environmental contingencies existing in communities” (Norman et al., 2007, p 151). The issue of access is important as the assumption is that all adolescents would in fact have a regular primary health care physician and/or that all would have physical and financial access to one, and to the program itself. Furthermore, it assumes that most physicians would be willing to participate.

To evaluate previous mass media messages targeting adolescents, Paul and Associates (2003) conducted 17 focus groups with high school students in three public high schools in NSW. The purpose of the focus groups was to examine teenagers’ perceptions of sun protection messages in the mass media. The majority (14 of the 17) of focus groups recalled the ‘slip slop slap’ message, 11 of the 17 groups recalled the Seymour the Snowman’ and half the groups (8/17) recalled the ‘Me No Fry’ campaign. Teenagers perceived the messages from these campaigns to be instructional and overly directive, and believed that such campaigns were more appropriate to pre-teens because they were simplistic, boring and lacking realism. Some teenagers expressed the desire for campaigns which were fun and humorous, while others indicated that they would prefer a campaign with strong graphic images and messages similar the National Tobacco Campaign and Roads and Traffic Authority Campaigns. The results of this study suggest that adolescents require sun protection messages which are specifically targeted to them or differ significantly from those aimed at children.

It is interesting to note that there appear to have been little to no documented risk reduction strategies initiated with adolescent sun protection found in the literature (or with any cohort for that matter); this may be due to the fact that a risk reduction approach implies that the strategy would in some way have to condone the behaviour of obtaining a tan. This risk reduction strategy is therefore believed to be perceived as a controversial and risky approach due to the fear of reinforcing the cultural acceptance of having a tan.

2.6.2 Missing the Point?

As previously stated, many past campaigns/strategies have been primarily based on education and/or mass media and that while mass media can have positive consequences—such as helping put issues on the public agenda, reinforcement and raising awareness—there are some severe limitations associated with its use (Wellings & Macdowall, 2000). These limitations include that mass media is less effective in delivering complex information, in addressing and altering attitudes, beliefs and behaviours, and lastly, in teaching skills
Therefore, while mass media can be used in conjunction with other initiatives, it should not be the sole message vehicle when behaviour change is on the agenda.

In terms of the education approach, education focused health promotion continues to hold a prominent position in real world practice, despite the criticism from many academics who report it as being an unrealistic and narrow strategy, particularly with young people (Whitehead, 2005), and one of unproven effectiveness (Steinberg, 2007). In fact, Steinberg (2007) noted that the efforts to provide adolescents with information regarding the risks of such behaviours as substance use, sexual activity and reckless driving, generally do not result in actual behaviour change, even if they are able to improve the young person’s thinking about the behaviours. The example given by Steinberg (2007) is that “more than 90% of American high school students have had sex, drug and driver education in their schools, yet large proportions of them still have unsafe sex, binge drink, smoke cigarettes, and drive recklessly” (p 58). Health promotion/education strategies are also deemed inadequate if they choose to ignore the meaning of the targeted behaviour to the young person (Whitehead, 2005).

Still, many researchers are undaunted and believe that further education (Robinson et al., 1997; Steinberg, 2007) and parental and school support are the keys to altering the current behaviour of adolescents (Robinson et al., 1997). While these factors are necessary in augmenting the possibility of behaviour change, they are obviously not the deciding factors. Adolescents are already knowledgeable about the dangers and risks of their actions, therefore further education may be deemed inadequate. As Arthey and Clarke (1995) concluded, “knowledge gains should be seen as a first step towards behaviour change, rather than as the main tool to alter behaviour” (p 272). They believe that in situations such as this where the knowledge levels are now high, it is time to begin exploring avenues to directly alter people’s behaviours (Arthey & Clarke, 1995).

### 2.6.3 Potential Future Directions

Due to the nature and complexities of adolescence and thus adolescent interventions, some researchers believe that policies and environmental changes are key to behaviour change. Steinberg (2007) states that risk taking behaviours during adolescence are inevitable and it may be more logical to simply limit opportunities for adolescents to make bad choices and thus their risk taking behaviours, rather than attempt to directly change attitudes and/or behaviours. As Steinberg (2007) suggests, raise the price of cigarettes, raise the driving age,
and give away free condoms to create the desired behaviours. For sun protection, this could simply be wider free access to sun screen, stricter secondary school regulations and the provision of more public outdoor shade facilities.

On the other hand, Robinson and Associates (1997) believe that a message which emphasises the short-term consequences of the risky behaviours (such as the pain and embarrassment of sunburn) would be better suited to an adolescent audience, and would have a greater chance at behaviour change. Furthermore, as people are motivated to tan because they believe it enhances their appearance and attractiveness to others, an intervention that stresses the potential health risks is likely to be ineffective, because the audience would already be aware of the risks and the beautification motivation will outweigh the risks (Jones & Leary, 1994). Jones and Leary (1994) also believe that the message should focus on the negative effects of tanning on physical appearance; to counteract the appearance based motivation to tan in the first place. As tanning is motivated by concerns over how others view you, Jones and Leary (1994) reasoned that people may therefore be persuaded by a message that informs them of the negative impact on appearance rather than one that informs of the overall risk it places on their health. Lovato and Associates (1998) recommends that intervention messages for adolescents should address sex differences and focus on multiple methods of protection.

There is of course no clear, singular intervention or message that will directly address the many issues involved in deterring adolescents from establishing themselves as tanners. Some researchers thus believe that a multi faceted strategy is in fact required (Mikati, 2005; Norman et al., 2007). Norman and Associates (2007) believe that environmental initiatives (such as providing shade in public areas) as well as media campaigns aimed at changing the perception of social norms should work together with individual-level interventions. Norman (1998) argued that the adolescent group needs to be targeted in two ways; firstly, that the media used needs to portray sun protected images that are acceptable to adolescents and, secondly, that further school education targeting the enhancement of self esteem should also be a priority. A recent study conducted by Mikati (2005) at the University of Adelaide, in conjunction with The Cancer Council South Australia, provided a number of recommendations for strategies they believe would ultimately be effective in increasing the sun protection behaviours of young people (Mikati, 2005, p 2). These recommendations include environmental initiatives, media and education strategies as well as increased product access. Their specific recommendations include;
Advocate to local governments and outdoor sporting associations to create safer environments.

- Provide widespread prompts and reminders to protect oneself.
- Develop effective media campaigns for young people encompassing realistic and graphic images and emotive cases.
- Encourage sun protection education in secondary schools.
- Aim to increase the affordability and accessibility of sun protection items.
- Increase the saturation of sun protection messages.

It must be noted that although the latter points are insightful and useful, the study by Mikati (2005) was conducted with an extremely small and homogenous participant sample of 26 participants, 81% of who were university students and 69% were female. Thus the recommendations should only be used as a frame of reference. Additionally, the research was focused on young people (aged 18-24 years) rather than adolescents.

Norman (1998) conducted a comprehensive review of factors associated with the failure of past skin cancer prevention programs and highlighted a number of areas that should be addressed to increase positive behaviour uptake:

- Welfare policies should consider compensating low-income families for product expenses.
- Sporting and cultural events organisers should develop policies concerning high risk time slots for events.
- Sun protection products should be displayed at the scene of sun exposure, or enroute, such as beach, pool or snow fields.
- Mass media should be challenged on inappropriate messages in popular TV shows and magazines.
- Communities should take further action to develop policies that can impact on the community environment (i.e. provision of shade).

Whitehead (2005) also concurs that there are limitations in utilising a singular process when attempting to deal with young people, in particular school age adolescents, as “narrow behaviour parameters do not usually meet the needs of the young people who are targeted” (Whitehead, 2005, p 214). These suggestions, in line with this thesis, indicate that multi faceted strategies may be the key to altering complex behaviours. It is the belief of this
researcher that a more comprehensive intervention (or even risk reduction) strategy is needed in order to encompass a broader range of issues that are involved with both accepting and rejecting a complex behaviour.

2.6.4 Research Intentions

Clearly there is no documented, comprehensive intervention campaign to be found in previous literature. Campaigns/interventions that have previously been developed all display limitations in effectiveness. Thus it is the intention of this current research to take the first step in generating a truly tailored, holistic sun protection campaign aimed at Australian adolescents. The theory of Social Marketing (to be later explained in Chapter 3) is the crutch of this effort, as it allows practitioners to address the current attitudes and behaviours of a cohort and effectively match an offering to counteract, or complement, such attitudes and behaviours.

2.7 SUMMARY

Skin cancer is a very real and prominent health problem for Australians and of particular concern is that a large portion of skin damage occurs during childhood and adolescence. While the literature on adolescents is in agreement that individuals in this cohort exhibit large levels of risky behaviours across numerous areas, a number of which are cosmetically motivated, it is of great concern that despite adequate knowledge levels, they are continuing to have negative sun safe behaviours. This is believed to be largely due to attitudinal and social factors overpowering health promotion efforts. Such negative influences on positive sun protection behaviours are current lifestyle, the Australian culture, fashion, media and body image, as well as high levels of unrealistic optimism. Previous intervention strategies have predominantly focused on education and mass media approaches, which have proven to be inadequate in addressing or changing this complex behaviour. Due to the overall absence of a previous holistic campaign, this research aims to develop the foundations for a new and comprehensive intervention strategy. By developing the foundations, this research will not provide tactics for behaviour change, but instead develop a launching pad for segmentation and practical campaign tactic development.
3. FRAMEWORK

This chapter identifies and reviews the theoretical background for the current research, specifically the foundations of social marketing. This is achieved by firstly identifying and defining the concept of social marketing, including its origins, as well as how it differs from commercial marketing, and how it differs from health promotion. The chapter then provides an overview of the specific benefits associated with social marketing; namely its focus on customer orientation, that it defines specific target markets (audience segments), its use of market research, and that it relies on a mutually beneficial exchange. A key tool of importance to this particular research is then identified, specifically, the marketing mix which includes the product, price, place and promotion components. Lastly, the chapter identifies previous applications of social marketing theory to promote behaviour change specifically with young people and adolescents, and the success of such applications.

3.1 A NEW DIRECTION

The behavioural issue of adolescents and sun protection is a prime example of where mere education and exposure to promotion activities alone are not substantial enough to create a behaviour change. Thus, rather than concentrating on merely promoting good health practices by increasing knowledge levels, or creating awareness through mass media campaigns, health professionals should take heed of social marketing which allows the intervention developers to take a more personalised and in-depth strategy in development and implementation. Social marketing holds substantial potential for changing health behaviours (Andreasen, 1994), yet is not widely used. This research will take the first steps in developing a comprehensive Social Marketing campaign – by generating the initial exploration and understanding of current attitudes and behaviours, which leads to the segmentation of the cohort.

3.2 SOCIAL MARKETING

“We health educators are also in the behaviour change business…… If we are serious about helping people, we don’t just need to constrain commercial marketers, we need to learn from them. Indeed we need to become better at marketing than they are.” (Hastings, 2006. p 7)

Most health promotion and communication theories draw in some part from numerous other schools of knowledge such as marketing, management, consumer behaviour, sociology, and
psychology (Nutbeam & Harris, 2004) and of course, social marketing is no exception. In essence, social marketing is a knowledge discipline which utilises behavioural and communication theory, and is derived from commercial marketing theory. Kotler, Roberto and Lee (2002, p 5) referred to social marketing as the “the use of marketing principles and techniques to influence a target audience to voluntarily accept, reject, modify, or abandon a behaviour for the benefit of individuals, groups, or society as a whole”. Social marketing was later more simply defined as a body of knowledge that is “concerned with helping to achieve and maintain a desirable social change” (Donovan & Henley, 2003, p 1).

In order to create an understanding of social marketing as a practice, a basic understanding of ‘marketing’ must thus firstly be established. In a brief explanation provided by Donovan and Henley (2003, p 3), “marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organisational goals”. In social marketing, the change agents (social marketers) often have objectives to improve health, prevent injuries, protect the environment and/or contribute to the community, and this can be done through direct behaviour change, education and information, and/or belief change (Kotler, Roberto & Lee, 2002).

3.2.1 Social Marketing Origins

While social change and education campaigns have been recorded as far back as the ancient Greek and Roman slave freedom campaigns, to the numerous attempts by government across the globe to both mobilise public opinion and educate the population (Donovan & Henley, 2003), these early campaigns, are critised for lacking the general characteristics of a comprehensive social marketing campaign as they were primarily media-based (Donovan & Henley, 2003). The actual term ‘social marketing’ was introduced by Philip Kotler and Gerald Zaltman in 1971 in an attempt to describe how marketing principles could and were being used to improve social causes. Over the years, the use of this concept and its principles grew to encompass both the public health sector and environmental and community advocates (Kotler, Roberto & Lee, 2002). In the 1980’s, the World Health Organisation, World Bank, and Centres for Disease Control and Prevention began to use the term and assisted in increasing interest in the area (Kotler, Roberto & Lee, 2002). The 1980’s then saw a rapid expansion of public education campaigns utilising marketing concepts across Australia and internationally (Donovan & Henley, 2003). Since then, an abundance of text books and journal articles dedicated to social marketing topics have been written (Kotler, Roberto & Lee, 2002).
3.2.2 How Social Marketing differs from Commercial Marketing

There are obviously fundamental similarities between social marketing and commercial marketing such as the application of a customer orientation to understand the target audience, and the use of marketing research and the exchange theory, target market segmentation principles, and tools such as the marketing mix (to be discussed in following section). Both social and commercial marketing rely on setting clear objectives and goals, and follow up their efforts with monitoring and evaluation (Kotler, Roberto & Lee, 2002).

However, the two frameworks are not identical. Some of the key differences are outlined by Kotler, Roberto and Lee (2002):

- An obvious difference is that unlike commercial marketing, social marketing is not used for financial gains. Social marketing’s objectives are generally behaviour based rather than initiated for profit, and thus the beneficiaries are the individual, a group or a society rather than the corporate shareholders.
- This leads to another key difference in the type of product sold. Social marketing is generally trying to sell a behaviour change, which often lacks tangible qualities, while commercial marketing is focused on selling physical goods and services.
- The competitors are also uniquely different between social and commercial marketing. The competitors in commercial marketing are other brands or substitute products, while the social marketer must compete against current or preferred behaviours, beliefs and attitudes.

3.2.3 How Social Marketing differs from Health Education

Health promotion has proven to be a valuable intervention and education strategy; however, it is generally used to communicate information and educate rather than to alter complex behaviours. Social marketing views education as one of many tools to be utilised in creating a sustainable behaviour change (Kotler, Roberto & Lee, 2002) and also, in doing this, health promotion will generally only make use of the promotions component of social marketing (Kotler, Roberto & Lee, 2002).
3.2.4 Benefits of Social Marketing

Social marketing is designed to positively alter behaviours and includes a number of core, interconnected concepts (Black, Blue & Coster, 2001); this includes its customer orientation, the use of market research, audience segmentation and the aim of a mutually beneficial exchange. The overall benefit of using social marketing in comparison to basic health promotion/education is that social marketing views behaviour as a product to be sold to an individual and aids in developing the best possible way to do so. It has a customer focus, whereby it addresses a specific target audience and the needs of the individual, so as to make the behaviour change easier and more appealing. Obviously these benefits become increasingly important when addressing complex negative behaviours such as adolescent sun protection.

3.2.4.1 Customer Orientation

The fundamental principle of customer orientation is that the social marketer identifies its customers (those needing behaviour changes) and the needs of those customers and recognises that the offer will need to appeal to this target audience (Kotler, Roberto & Lee, 2002). The change agent’s available resources are then directed to meet those needs (Donovan & Henley, 2003). This allows the offering to be made more appealing by not just knowing what to tell the customer, but more importantly, what, how and where to offer it. According to Hastings and Hayward (1991, p137), this means a social marketer must understand and sympathise with the “perceptions, motivations, behaviour, and above all, needs of the consumer in order to produce effective health communication”. This customer orientation/focus is largely achieved through the use of market research and audience segmentation and targeting (Buchanan, Reddy & Hossain, 1994).

3.2.4.2 Use of Market Research

An integral aspect of social marketing is its use of market research. Market research can be, and is, used throughout all stages of social marketing from customer identification, segmentation and analysis, marketing mix examination, campaign/strategy development and implementation, through to campaign evaluations. Kotler, Roberto and Lee (2002, p 11) stated that “only by researching and understanding the specific needs, desires, beliefs, and attitudes of the target adopters can the marketer build effective strategies”. 

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Black, Blue and Coster (2001, p263) state that there are three unique phases of research when applying social marketing, and that both qualitative and quantitative research can be utilised in all three phases;

1. **Preproduction/Prepromotion phase.** This includes the planning and selection of strategies and channels of communication, and establishing how to attract customers to accept the offering.

2. **Media development and testing.** This is based on the results on phase one and includes testing media for aesthetic appeal and appropriate message content.

3. **Application and evaluation.** This includes the implementation of the actual campaign/strategy and its later evaluation to ascertain if the desired outcomes were achieved.

The current research is the first step in research phase 1, and will gather evidence through research to support and guide future strategy selection.

### 3.2.4.3 Audience Segmentation

As social marketing takes a customer focus, it thus helps to define and pursue a specific target audience. According to Bloom and Novelli (1981, p 81) segmentation is fundamental to modern marketing and is defined as the “process of dividing the market into homogenous segments and then developing unique marketing programs for individual target segments”. The use of segmentation also creates a strategic focus for the marketer(s), by taking a realistic approach towards its offering and potential consumers (Cahill, 1997). Using segmentation is generally viewed as being more productive and viable than treating an entire market as a whole (Bloom & Novelli, 1981; Burgess et al., 1985). Segmentation recognises that serving all the diverse needs of the global market is impossible as the drain on resources would cause the overall quality of the campaign/program to be diminished (Burgess et al., 1985). Specific to social marketing, segmentation allows social marketers to target their efforts and resources towards a target segment that is in most need of, or served best by, the offering. It also allows them to tailor the offering to specific needs and wants, thus elevating barriers to adoption, and providing greater satisfaction. Lastly, it allows them to tailor communication and distribution strategies more effectively to suit the target segments (Kotler & Roberto, 1989. p 147).
There are countless ways to segment a population, Kotler and Associates (2003) however, state that majority of segmentation strategies can be divided into one of four main categories: geographic, demographic, psychographic and behaviourial. Schiffman and Kanuk (2004, p 53) then expand on these four categories to state that there are nine popular categories for segmentation, these being “geographic factors, demographic factors, psychological factors, psychographic (lifestyle) characteristics, sociocultural variables, use-related characteristics, use-situation factors, benefits sought, and hybrid segmentation such as demograph- psychographic profiles, geodemographic factors and values and lifestyle”. These extended categories encompass greater levels of lifestyle and product usage characteristics.

When conducting segmentation, offerings must be specifically tailored to the wants, needs, resources and current behaviours of the target segment(s) (Kotler, Roberto & Lee, 2002). For social marketers, the desired target segment is generally that which consists of the consumers with the most negative behaviours, and thus those who are most in need of the behaviour change (Bloom & Novelli, 1981), however, they must also be a target segment that is amendable to change, and accessible via communication channels. Overall, the chosen target segments must hold characteristics that indicate to the marketer(s) that the segment can be strategically targeted. According to Kotler and Associates (2003) there are in fact four commonly accepted requirements for effective segmentation. These being:

- **Measurability**: is the segment measurable to determine size.
- **Accessibility**: is the segment accessible via media and distribution channels.
- **Substantiality**: is the segment large enough to justify resources.
- **Actionability**: is there a program or offering that can be designed for the segment.

Thus, if a segment displays positive characteristics for all four of these requirements, then they would be considered a viable segment for targeting. However, numerous segments can display these promising characteristics and thus this should be used as a guide and not as a law of practice. The final decision on which segment to target should be based on the project objectives, resources and overall the final decision of the marketer(s). In the case of sun protection, we would expect a positive segment for targeting to be one that is not only large and accessible, but also one that is also open to change. By targeting a group that does not completely reject the notion of sun protection, or that is not extremely brand loyal to tanning, then this group is actionable.
3.2.4.3.1 Brand Loyalty Segmentation

In using segmentation, it not only allows us to identify/segment on general characteristics of a population based on demographics such as age and/or gender, but also allows us to further define this strategic targeting by looking more specifically at such things as the level of willingness/readiness an individual has towards changing a specific behaviour (i.e. the stages of change model) and even the level of compliance (or in marketing terms, level of loyalty) that may already exist within a particular segment.

Brand loyalty, a use-related segmentation strategy (Schiffman & Kanuk, 2004) is of particular interest to this research, and is a framework that is often used in both commercial and social marketing and allows us to further analyse our target audience by identifying their degree of brand loyalty (Rossiter & Bellman, 2005), based on their awareness of and preference for a brand, or in this case a behaviour, and thus the potential market for that behaviour (Rossiter & Percy, 1997; Rossiter & Bellman, 2005). This expanded segmentation is done by dividing the target market into one of five groups that are based on levels of awareness and preference. As defined by Rossiter and Percy (1997) and Rossiter and Bellman (2005), these five groups are:

1. **Brand Loyals** (BL’s): Currently use the brand/behaviour almost exclusively.
2. **Favourable Brand Switchers** (FBS’s): Currently have a moderate preference for the brand/behaviour.
3. **Other-Brand Switchers** (OBS’s): Currently do not use the brand/behaviour, or do so minimally.
4. **Other-Brand Loyals** (OBL’s): Currently loyal to a competing brand/behaviour.
5. **New Category Users** (NCU’s): Currently a non user of both the brand/behaviour and the competitor, but have the potential to be either.

In this particular instance, while adolescents are our target audience, using this model we can further segment this cohort based on current behaviours in regard to their sun protection behaviours. Johnson (unpublished manuscript) has previously applied the Brand Loyalty Segmentation framework to sun protection and the results are shown in Table 3.1.
Dividing our population into these categories allows us to determine which target group has the most potential for change and/or which groups are in greatest need of change. Furthermore, the framework also helps us to determine the characteristics of each of these sub groups and thus, how and to what extent a behaviour needs to be altered.

### 3.2.4.3.1.1 Brand Loyalty & Transtheoretical Model

The Transtheoretical model, also referred to as the Stages of Change model (explained in greater detail in chapter nine), while not as traditional or common in its use for market segmentation, also divides populations of interest into set categories based on behaviours and attitudes. The Transtheoretical model is based on individuals being divided into one of six stages dependent on their current behaviours and behaviour intentions to participate in a particular behaviour. This theory is complementary to brand loyalty segmentation. By establishing an individual’s position in the Transtheoretical model, this can then feed the development of brand loyalty segmentation. Simply because the behaviours and intentions developed in this method are perfect indictors of current or potential brand loyalty.

### 3.2.4.4 Mutually Beneficial Exchange

Social marketing, like its commercial counterpart, relies on the theory of a mutually beneficial exchange between the marketer and the target audience, or the notion of creating value in exchange for the customer’s costs. At the heart of this exchange theory is that the customer must perceive benefits that exceed or are equal to the perceived costs (Kotler, Roberto & Lee,
Even though a social marketer can attempt to shape and reinforce the purchase of a particular behaviour, the consumer ultimately can make the choice not to buy it (Andreasen, 1994). Therefore value must be created to encourage the exchange process to take place, and encourage the consumer to purchase the behaviour.

This does however provide a major challenge for social marketers (Kotler, Roberto & Lee, 2002), as it relies on voluntary compliance, which means the social marketer needs to create a benefit that the target audience will perceive as being worth the transaction. With complex and entrenched behaviours, this is often a difficult task and in most cases the social marketer is unable to provide direct or immediate compensation for the behaviour change (Kotler, Roberto & Lee, 2002).

3.2.5 Social Marketing Tool: The Marketing Mix

An important tool of social marketing is the use of the 4P marketing mix. The promotion, product, price and place components allow for the development of holistic intervention and communication strategies. Overall, a social marketing campaign must have a full balance of the marketing mix components to in fact be considered social marketing (Andreasen, 1994). Social marketing uses market research to address all four components to allow for thorough investigation and design. By developing an understanding of these tools, this research is able to gather information from adolescents with the four elements in mind. This makes it easier to appropriately address the elements at later strategy development stages. The 4P marketing mix is defined as follows:

3.2.5.1 Marketing Mix: Product

The product component is the offer made to the target audience and, according to Kotler and Roberto (1989, p 44), this includes such things as the services provided, features, options, styles, brand names, the type and packaging design, sizes, warranties and returns. More specifically, the product component works on the three levels of products from traditional marketing, which are the core, actual and augmented products and refer to both the tangible and intangible aspects of the offering. The core product is the underlying benefit that an individual will obtain if they adopt/purchase the product; the actual product is the exact physical behaviour/product that the social marketer is trying to ‘sell’. Lastly, the augmented product is the additional services or benefits that are supplied which complement the actual product (Donovan & Henley, 2003). In the case of sun protection, the core product is the
health benefit of reducing the individual's overall risk of developing melanoma or non melanoma skin cancer, while the actual product is the behaviour of wearing sun protection, seeking shade or even reducing intentional tanning. Lastly, the augmented product is the tangible products that assist in the actual behaviour adoption. In this case being the sun protection products themselves, such as sunscreen, hats, sunglasses and rash vests.

**Figure 3.1: The Three Product Levels**

A major issue for social marketers is the fact that often the ‘products’ that are being offered are unpopular and/or have low appeal to the customer (yet can provide improved health, wellbeing, etc.), also that accepting the product could result in being placed in an undesirable social category (Black, Blue & Coster, 2001); for example, cool people do not protect themselves from the sun. Furthermore, often these products have long term rather than short term/immediate benefits, and often the competition is a complex and difficult to change behaviour (Black, Blue & Coster, 2001; Bloom & Novelli, 1981).

For adolescent sun protection, the author believes that the use of augmented products is an extremely important issue, as branding and fashion are proven to be exceptionally important with adolescents (Grant & Stephen, 2005; Taylor & Cosenza, 2002; Beaudoin et al., 2003) and thus the perception of these products has the potential to increase or decrease an individual’s willingness to wear them.

### 3.2.5.1.1 Harm Minimisation Products

While most of the attention in this research has been given to actual sun protection products, it is beneficial to acknowledge harm minimisation products such as fake tan, that give the user the appearance of having a tan without having to expose themselves to the dangers of the
sun. There are numerous types of fake tan products currently available in the form of gel, lotions and sprays. These fake tans contain a chemical (dihydroxyacetone) that interacts with dead cells on the upper layer of the skin which produces a colour change (Scenta, 2005). While in the past fake tans have resulted in an orange or streaky look, the advanced developments in this area have resulted in realistic and natural looking tans (Scenta, 2005). Currently there are no dangers associated with the use of fake tans which thus makes it the only safe way to obtain a tan (Federation of Holistic Therapists, 2004). However, the actual use of fake tan products in Australia, and more specifically by Australian adolescents, has yet to be quantified.

3.2.5.2 Marketing Mix: Price

The price component considers the various tangible and intangible costs associated with accepting a product and can include monetary, opportunity, psychological and time costs (Kotler & Roberto, 1989; Black, Blue & Coster, 2001). As with any product or service, there are a number of associated tangible and intangible costs; monetary costs (tangible) refer to the actual dollar amount spent when a person purchases the product/adopts the behaviour, while non-monetary costs (opportunity, psychological and time costs) are far more complicated. They refer to the intangible, psychological, physical and environmental costs that are associated with this action (Donovan & Henley, 2003) as well as the time devoted to the behaviour (Black, Blue & Coster, 2001).

Addressing these price issues is a difficult task as, unlike commercial marketing where pricing strategies generally consist of determining an appropriate monetary price to charge for an offering, social marketers need to recognise that by understanding and attempting to adjust/minimise associated monetary, psychological, opportunity, environmental and time costs associated with adopting a behaviour, they can minimise any barriers that may prevent the desired behaviour (Bloom & Novelli, 1981). However with social marketing, often the overall cost to the consumer may be greater than the perceived benefit they receive (Black, Blue & Coster, 2001) and social marketers often have less control over a number of the consumers’ costs (Bloom & Novelli, 1981).

We must understand that adolescents’ sun protection is largely governed by non-monetary costs due to the social desirability of the alternate behaviour (having a tan) and the socially conspicuous nature of the augmented product’s consumption. There is of course still a level
of monetary burden placed on this behaviour and a subsequent behaviour adoption. While
the actual cost of not tanning is largely governed by non-monetary costs, the actual use of
protective practices to prevent burning does have a financial value attached. The augmented
products themselves will cost money, and as many adolescents are price sensitive due to
their dependence on parents and after school employment, this is an area of great
importance. It must be established what value specific products have to adolescents as
consumers, and how much they would be willing to pay for them.

3.2.5.3 Marketing Mix: Place

The place component addresses how the product is delivered to the target audience (Kotler &
Roberto, 1989) and takes into consideration the assessment and selection of appropriate
channels for distributing the product(s) or offerings (Black, Blue & Coster, 2001; Bloom &
Novelli, 1981), including where the intended behaviour will take place and/or the channels for
delivering a service (Kotler & Roberto, 1989; Andreasen, 1994). This includes factors such as
the distribution channels for tangible products (i.e. location or retailer selection) as well as
message distribution to the audience.

The social marketer must understand the issues surrounding where, and the ways in which,
tangible products, information and persuasion techniques will interface with the individual and
the best way of reaching their target segment. Thus a social marketer must develop an
understanding of their consumers’ media usage and general consumer behaviours, as well as
the ways in which they interface with the place in which the desired behaviour will occur
(Andreasen, 1994). For adolescent sun protection, this may be addressing retail issues for
the actual purchase of sun protection products, or even place based strategies, such as
providing free sun screen at the actual point where the negative behaviour (exposing one’s
skin to the sun) is likely to take place, the beach or pool for example.

3.2.5.4 Marketing Mix: Promotion

Kotler and Roberto (1989) defined the promotion component as the way in which the social
product is promoted to the target audience. The promotion component addresses issues
surrounding the strategies and tactics for attracting the audience (Black, Blue & Coster, 2001)
and involves communication and persuasion techniques which are designed to make the
product “familiar, acceptable, even desirable to the target market” (Burgess et al., 1985, p36).
This can include advertising, public relations, personal selling and sales promotions (Kotler &
Roberto, 1989). The promotion component also focuses on considerations of the theme, type, structure and source of the message, creative aspects, as well as rewards/incentives for engaging in the desired behaviour.

3.2.5.4.1 The Message

The message refers to the actual words or communication of a campaign, or the actual information that the social marketer intends on conveying to their audience, and what they hope the audience to comprehend from the promotions. This of course can be informational or emotionally driven, positively or negatively framed, positively or negatively motivated, etc. However, the actual message that a social marketer uses is of course highly dependant on what their objective is, and what would be most effective in reaching their target customer (of course this should be determined by market research). According to Kotler and Roberto (1989) there are three notable factors to be considered when making message decisions: firstly, should the message be universal or varied; secondly, how should the message be selected; and, lastly, how should the message be presented.

For example, with the current research, if a message could be created that accurately addressed an issue(s) that caused concern for adolescents, the possibility exists to change attitudes towards tanning and sun protection on an individual level.

3.2.6 Previous Use of Social Marketing

While social marketing is currently not widely used in health campaigns/interventions, and no documented sun protection campaign has been developed, social marketing strategies have previously worked to help change other complex behaviours in adolescents. Following are a number of examples of comprehensive campaigns that have successfully utilised social marketing when targeting adolescents and young adults.

The *Truth* campaign was the U.S.A’s largest national youth-focused anti-tobacco campaign to date. This campaign was launched by The American Legacy Foundation in early 2000, and was designed to expose the marketing and manufacturing practices of tobacco companies to convince and empower teens to become anti-tobacco. Overall, the campaign showed good recall, was convincing to its target audience and was followed by a dramatic decline in smoking rates among 8th, 10th and 12th graders for which the campaign was cited as a major contributing factor, with the rates of smoking in high school students falling by more than one million in two years of campaigning (Protect the Truth, 2007).
While aimed more so at young adults (18-24 years) rather than specifically adolescents, the Healthy Talk campaign from the Massachusetts Department of Public Health (MDPH) in the United States addressed the psychological barriers to sexual health. It used social marketing to design and deliver a mass-media public health campaign to promote inter-couple communication in regards to sexual health practices, in an attempt to reduce unintended pregnancy and sexually transmitted infections. While only pilot evaluations were conducted, it was concluded that a positive association had developed between exposure to the campaign message and perceptions, intentions and self-reported behaviours (Cho et al., 2004).

An Australian example is that of the Dope EFX U Campaign designed and implemented in 2004 by Youth Solutions (a non-government, not-for-profit organisation that aims to prevent and reduce drug use and related harm among young people in Macarthur, Wingecarribee and the wider community of New South Wales) and funded by the Australian Government National Illicit Drug Strategy under their Community Partnerships Initiative. The campaign, aimed at 15-18 year olds, sought to address adolescent attitudes towards cannabis consumption and aimed to use social marketing to “develop a campaign message about young people and cannabis that did more than just speak to the community – rather for the message itself to be spoken by young people” (Youth Solutions, 2005. p 6). When campaign evaluations were conducted in 2005 it was found that 97% of the 60 respondents recalled the message, and that promisingly, 62% of respondents stated that the campaign message changed the way they felt about young peoples’ cannabis use and that one quarter of the remaining respondents said they already agreed with the message prior to the campaign (Youth Solutions, 2005).

3.3 SUMMARY

Social marketing originates from the principles of commercial marketing, but with several unique differences, such as the objective of its application (financial vs. behaviour change), differences in the product being sold, and the nature of the competition. It also offers a number of benefits such as the customer focus, use of research and segmentation, as well as a focus on the concept of a mutually beneficially exchange. An important tool of social marketing is the use of the marketing mix’s 4 P’s, namely the product, price, promotion and place components. The products component includes the core, actual and augmented levels of products, while the price component considers the tangible and intangible costs associated
with the desired behaviour. The place component considers how the product is delivered to the target audience and, lastly, the promotion component considers the way in which the product is promoted to the target audience.

To date, social marketing is not yet widely used for health and/or behaviour change campaigns, despite holding great potential. A number of examples of comprehensive social marketing application with an adolescent target audience prove it to be successful. The Truth campaign, the Healthy Talk campaign, and the Dope EFXU campaign all found positive behaviour and/or attitude results. The absence of a previous documented social marketing campaign that addresses sun protection in adolescents leads to the belief that the current project will be filling a definite gap in the literature. This research may prove to be extremely valuable for the development of both future sun protection campaigns and other social marketing campaigns alike. This research will not only close an existing knowledge gap in both social marketing and sun protection literature, but can perhaps act as a template for future social marketers who are unsure how to take the first step in campaign development.
4. METHOD OVERVIEW

This research is a multi-stage project that combines both exploratory qualitative research, along with quantitative data collection. Like many research projects before it, the overall objective of the research, and thus the methodology, altered throughout the literature compilation and initial research stage.

The initial intention was to explore adolescent sun protection behaviours within the framework of social marketing, and identify strategies that could potentially be used to alter negative behaviours. The exploratory nature of this research project warranted the use of qualitative research techniques. After careful consideration of the countless options available, it was decided that focus groups with the target audience would be ideally suited to the research objectives. This stage consisted of 12 focus groups conducted with New South Wales High School students. Full details of the rationalisation and implementation of the focus groups can be found in Chapter five. The results of these groups are provided in Chapters six, seven and eight.

From the results of the focus groups – a number of unexpected themes emerged which altered the direction of the research. Specific behaviour segments had displayed themselves in the focus group data. These behaviour groups had thus far been undocumented in any previous research and could prove to be extremely valuable to future behaviour change initiatives with the adolescent audience - and it was decided to further explore this finding. The groups would be explored within the context of Social Marketing’s segmentation element, using the Transtheoretical model to feed brand loyalty segmentation. With this in mind, quantitative research techniques were introduced to the methodology.

A large scale survey was conducted with the target audience, with the intention of the survey being two-pronged. Firstly, to design a data collection tool that is able to accurately categorise participants into one of the segment groups developed in the focus groups stage and secondly, to determine if this tool would hold up under large scale testing. In the process of testing the larger sample, we are able determine the size and scope of the behaviour groups within a representative sample of the target segment.
With this initial objective in mind, great attention was paid to the structure and algorithm used within the survey to ensure the tool was as reliable as possible. Full details of the survey development stage can be found in chapter nine. To test the data collection tool prior to any large scale deployment – a pilot study was also conducted. The exact method and results of the pilot test are provided in Chapter 10. The aim of the pilot was simply to ascertain if the categorise appear to hold up under initial testing. The pilot was conducted with a small group of high school students, across two different modes.

The pilot study was deemed successful and the algorithm appeared to accurately determine behaviour categories. The second stage of the quantitative research stage and tool testing was then able to move forward. A large sample of the target segment of New South Wales High School students were recruited to complete the survey – the results of which can be found in Chapter 11.
5. FOCUS GROUPS

Focus groups are identified as an important tool for investigating people’s attitudes, behaviours and perceptions. The use of focus groups specifically in health and behaviour research, as well as with adolescents, is well documented. This chapter introduces the sample population in question and exactly how and from where they were selected and recruited. This includes information on school types; the geographical areas that were included in the sample; and the recruitment strategy. The actual group compositions and rationales for these are provided (i.e. the grade(s) at school, justification for gender segregation and the intended group size), followed by details on the training provided to the moderators for the current research. Information on sample size as well as the ethical implications, cost, timing and compensation to participants are also addressed. A detailed description of the actual structure of the group discussion is also outlined. This includes the framework and themes employed; the concept of projective techniques; and structure of the discussion guide developed for this research.

5.1 DATA COLLECTION TOOL: FOCUS GROUPS

As defined by Stewart and Shamdasani (1990, p10) a “contemporary focus group interview generally involves eight to 12 individuals who discuss a particular topic under the direction of a moderator who promotes interaction and assures that the discussion remains on the topic of interest”. The technique uses group dynamics to stimulate discussion and allows a researcher to examine topics in-depth, particularly in areas where the research is attempting to understand people’s behaviours and attitudes towards a specific issue (Kruger, 1994; Stringer, 2004).

While there are a number of different qualitative data collection tools that could be utilised (such as in-depth interviews or observational studies), focus groups have been specifically selected for this research as they are an effective (and among the most widely used) research tool (Stewart & Shamdasani, 1990) for gathering qualitative data. There are a number of advantages of using focus groups as a data collection tool. Firstly, they are flexible and can be used to examine any number of topics and areas of interest (Stewart & Shamdasani, 1990). They are also an excellent means of collecting a large amount of data in a short period of time as a researcher is able to gain numerous responses simultaneously as the participants
interact and respond with each other (Sloan, 1998; Stewart & Shamdasani, 1990). The data obtained is generally rich due to the fact that: it is in the participants’ own words; the participants have the ability to interact and respond to other group members (Kennedy, Kools & Krueger, 2001; Stewart & Shamdasani, 1990) and that the group interactions can provide valuable insights and raise topics previously not included by the researchers (Mitchell & Branigan, 2000). Furthermore, the group moderator is able to interact with participants and thus clarify, follow-up, build on and probe for further information (Stewart & Shamdasani, 1990), develop original lines of enquiry, allow for behavioural insights; and allow for salient topics to develop (Eadie & MacAskill, 2007).

5.1.1. Focus Groups and Health/Behaviour Research

According to Mitchell and Branigan (2000) the focus group method was used almost exclusively in a market research role up until and during the 1980’s, and has since diffused more widely into a number of other research areas such as public health. While focus groups are now a common and popular tool in many research areas, they are more importantly a well-known qualitative method of gathering information in health research (Kennedy, Kools & Krueger, 2001). As focus groups are an excellent way to obtain data that is concerned with a person’s reactions and behaviours to a particular issue, they are especially useful when the topic concerns individuals’ health and wellbeing (Stringer, 2004) and are often used to understand health relevant motivations, feelings, attitudes and opinions (Kennedy, Kools & Krueger, 2001). More specifically, according to Mitchell and Branigan (2000), focus groups are useful in the planning, design and implementation stages of health promotion interventions.

5.1.2. Focus Groups and Adolescents

Peterson-Sweeney (2005) states that focus groups are an excellent methodological approach to conducting research with children and adolescents, particularly in health care, and can also assist in including youth perspectives on the design of health programs. Furthermore, according to Heary & Hennessy (2002), focus groups are an appropriate methodological choice for young people when wanting to understand the shared meaning of behaviour in a peer group. As the peer group is an extremely important factor in the lives of young people, it is important to understand that most of their behaviours are performed within a group context, and thus a group setting represents a familiar and encouraging situation for young people (Heary & Hennessy, 2002).
5.2 SAMPLE POPULATION

Given that the target group for this research project was adolescents, and they can be classified by grade at school, participants were recruited from NSW high schools. High schools were specifically targeted due to the volume and simplicity of access to potential participants. Furthermore, the fact that students are already grouped by grade, and then further by class, made accessing the desired groups much easier. It also allowed the researcher to easily construct homogenous groups based on grades.

5.2.1 School Type Inclusions

NSW schools, like those in all states in Australia, are divided into public and private sectors. The private school sector in NSW is largely controlled by the NSW Catholic Dioceses\(^1\), while the public school sector is controlled by the Department of Education and Training (DET). It was the intention of this research to include both public and private schools; however, due to time constraints encountered in the research approval process, only private schools were included in the focus groups. More specifically, while the initial research application was lodged to the DET in March of 2006, approval was not granted until the 21\(^{st}\) of July, 2006.

5.2.2 Geographic Divisions

Using high schools where respondents are grouped by geographic location allows the research to specifically target the recruitment to encompass a variety of different demographics. While it is acknowledged that it would be extremely valuable to ascertain the input of inland and coastal Australians from both city and rural locations, for this study, economic, geographic and time factors prevented the researcher from including all geographic profiles in the focus group recruitment.

The focus of the recruitment was thus to maintain a coastal based population sample. This decision was made because research shows that people are more likely to get sunburnt when they are engaging in any kind of water sports or activities, in particular at the beach and pool (The Cancer Council Australia, 2006), and that sun protection, in large part, is associated with aquatic activities (Heartbeat, 2003).

\(^1\) A Diocese is the name given to the controlling body of parishes that have responsibilities for schools, churches and members within their given regions.
The actual geographic divisions selected for this research were the Sydney region, Wollongong/Illawarra region, and the North Sydney region, all located on the east coast of New South Wales. These three coastal regions include a diversity of different economic, education and class structures.

The Sydney region, which includes Sydney, the largest city in Australia, is Australia's chief port and main cultural and industrial center (Columbia Electronic Encyclopedia, 2007). The region has an estimated population of 3,566,873 with a 6% unemployment rate, and majority of those employed being both professionals (21.7%) and intermediate clerical and service employees (17.2%) (Dictionary of Sydney, 2007).

The Illawarra region, including Wollongong, the eighth largest city in Australia, is situated directly south of the Sydney region. Wollongong city has an estimated resident population of 192,402 as of June 2005 with a median age of 37.2 years (Australian Bureau of Statistics, 2005), while the Illawarra region as a whole has an estimated population of 409,734 (Australian Bureau of Statistics, 2006a) with an 8% unemployment rate (Australian Bureau of Statistics, 2006b).

The area of North Sydney is located directly to the north of Sydney city and includes both the Northern Sydney suburbs as well as those of the Northern and Central Coast beaches. North Sydney has a population estimated at 60,694 (Australian Bureau of Statistics, 2006c) and a 3.3% unemployment rate (Australian Bureau of Statistics, 2006d), while the Northern Beaches has a population estimated at 34,221 (Australian Bureau of Statistics, 2006e) and a 2.6% unemployment rate (Australian Bureau of Statistics, 2006f). The urban area of the Central Coast has a population estimated at 316,000 (New South Wales Department of Infrastructure, Planning and Natural Resources, 2005).

It must be acknowledge that while the research attempted to include representative geographical areas in focus group recruitment, the representative nature of each individual school could not be concluded. Thus this is a limitation of the sample recruitment. The focus group recruitment resulted in a total of 124 participant with 29% from the Wollongong/Illawarra region (n=36), 39.5% from the Sydney region (n=49), and 31.5% from the North Sydney region (n=39).
5.2.3 Boundary Definitions

The defined boundaries of these three areas were developed using the regional diocese divisions of the NSW Catholic Dioceses (note that North Sydney region in the Catholic Diocese divisions is referred to as Broken Bay).

5.3 FOCUS GROUP METHODS

5.3.1 Group Composition

Peterson-Sweeney (2005) stated that when conducting focus group research with children and adolescents, it is important to consider the composition of the groups themselves in terms of demographic factors such as age, gender and grade at school. Furthermore, it is important to have these factors similar within a focus group (particularly with young people) to allow for the most advantageous group discussion. In fact, previous research suggests that the focus group participants should be relatively homogenous in order to maintain adequate interaction and discussion (Peterson-Sweeney, 2005; Heary & Hennessey, 2002; Hoppe et al., 1995).

5.3.1.1 Grade at School

Kennedy, Kools and Krueger (2001) suggest that when working with children, age groupings are a critical factor, and if not used, can negatively impact on the group dynamics displayed in a focus group. Furthermore, they suggest that when working with young people there should only be a 1-2 year age difference in participants due to the impact that levels of comprehension, style ability, abstraction and maturity can have on the group interactions (Kennedy, Kools & Krueger, 2001).

Thus, this research limited its student inclusion to those students in grade 9 and grade 10. These adolescents were specifically targeted for a number of reasons. Firstly, those students in grades 7 and 8 are less able to verbalise themselves than older adolescents (Marjenburg, 2006) and it has also been reported that younger adolescents are more likely to follow sun protection guidelines (Dobbinson et al., 2005; Lower et al., 1998; Lowe et al., 2000). Secondly, grades 11 and 12 have a maturing mindset (i.e. make more responsible decisions) and are perceived as being more independent of group conformity (Marjenburg, 2006), thus better able to resist the pressure to tan or to not wear sun protection.
The characteristics of the grade 9-10 group, on the other hand, indicate they are better able to verbalise themselves than those in grades 7 and 8 (Marjenburg, 2006); are still heavily reliant on peer group acceptance; and have the ability to express individual characteristics within those peer groups. They increasingly express themselves through clothing, music, art, products, and brands and brand images become increasingly important during this stage (Marjenburg, 2006).

5.3.1.2 Gender Separation

Kennedy, Kools and Krueger (2001) stated that in their research with children, both single sex and mixed gender focus groups involving children have been successful in the past without any consistent differences. However, they do note that it is reasonable to assume that potential differences may possibly surface with older children (i.e. adolescents) and with gender-specific topics. Peterson-Sweeney (2005) agreed that school-aged boys in particular may be resistant to discussing certain topics in the presence of girls the same age, while Heary and Hennessy (2002) stated that with increased interest in the opposite sex (such as with adolescence) mixed gender groups may have a negative impact on group productivity.

Therefore, in order to maintain the overall integrity of the data collection process and account for the inclusion of some gender specific topics in the current research (such as appearance concerns and use of fake tan products), the focus groups were divided by gender to ensure the comfort and honest response of the participants by limiting the impact of embarrassment and social desirability. The focus groups were also divided by gender not only in an attempt to minimise additional social pressures, but also because previous research shows that sun protection practices differ between genders (Summerville & Watt, 2003; Lowe, et al., 2000; Livingston, et al., 2001; Lower, et al., 1998).

5.3.1.3 Focus Group Size

In terms of the size of the focus groups (i.e. number of participants in each group), Stewart and Shamdasani (1990) suggest that while the number of participants involved in a focus group can vary, each group should consist of between eight and 12 participants. However, when conducting focus groups with young people, it is common practice to have a smaller number of participants than when conducting research with adults (Heary & Hennessy, 2002). In this instance, each group was limited to no more than 10 participants, which resulted in between six and 10 participants per focus group.
5.3.2 The Moderators

The role of the moderator is to direct the focus group discussion (Kennedy, Kools & Krueger, 2001). More specifically, the moderator needs to direct the discussion, without appearing to control it (Klein, 1989) and this role becomes increasingly important in situations such as this when research is being conducted in pre-established settings, which can mean the presence of existing hierarchies (social hierarchies in this particular case) which have the capacity to cause problems. This is largely because during the group discussion, the views of some individuals are likely to be subdued by the more dominant individuals (Mitchell and Branigan, 2000); thus the moderator must take care to minimise the impact of the more dominant individuals’ opinions. The moderator’s role can impact on the success or failure of the focus group (Klein, 1989), and thus he/she must be adequately trained to ensure the quality of the data (Kennedy, Kools & Krueger, 2001).

Therefore, the research utilised trained researchers as moderators/group facilitators. Furthermore, in line with the gender segregation of the participants themselves, a female moderator conducted the female participant focus groups, while a male moderator conducted those with male participants.

5.3.2.1 Moderator Training

Prior to commencement of data collection process, Heartbeat, a commercial market research company was employed to design a training program for the moderators, with specific attention being paid to how to work with adolescents, to ensure each moderator was equipped with the skills and knowledge to complete their task.

This training included a half day theoretical workshop, which involved a background on working with adolescents, as well as general focus group techniques. The first two focus groups were then conducted by the Heartbeat professionals, and the research moderators were given opportunity to observe these groups to gain an understanding of the interactions expected from them. The second two focus groups were then moderated by the researchers, and observed by the Heartbeat professionals to further ensure the integrity of the data collection and to provide feedback. All proceeding focus groups were facilitated independently by the research moderators.
5.3.3 Number of Groups (Sample Size)

For quantitative research, statistical methods are usually used for determining the required sample sizes; however for qualitative research, the exact measure is not as easy to compute. Other recent focus group research in health areas (including health intervention development and evaluation) conducted specifically with adolescents, have in fact had a variety of total group numbers (sample size), ranging from four groups (Kefford, Trevena & Wilcock, 2005; Bourton, 2006; Thorsen, Aneblom & Gemzell-Danielsson, 2006; Watkins et al., 2006) through to 30 groups (Messerlian & Derevensky, 2007).

Due to the varied nature of sample sizes in focus group research, this research followed the recommendations of Kennedy, Kools and Krueger (2001) who studied methodological considerations of conducting focus groups, with specific interest in children. They state that the number of actual focus groups required in qualitative research will always vary dependent on the nature of the research and its complexities. More importantly, the ultimate sample size goal should not be a specific number, but rather to obtain repetition and/or saturation of results (i.e. no new themes are emerging). This recommendation is also reinforced by Messerlian and Derevensky (2007) who conducted research with adolescents on the role of social marketing in youth gambling, and engaged in data collection until such time as saturation was reached. For this research, a total of 10 focus groups were conducted.

5.3.4 Ethical and Privacy Issues

Ethics approval was sought and received from the University of Wollongong’s Human Research Ethics Committee, the Wollongong Diocese, the Broken Bay Diocese and the Sydney Archdiocese. Furthermore, in line with guidelines for conducting research in NSW Government Schools and that of the relevant Catholic Diocese, no child was allowed to participate in the study unless their consent was obtained, along with the written consent of the parent/guardian.

All participants were informed that participation was entirely voluntary, and that the child and/or the parent/guardian could chose to discontinue participation at any stage. Precautions were taken to ensure the anonymity of the data, whereby no names were recorded on the surveys and, once returned, the consent forms were kept separate to any data obtained in focus groups in order to ensure that individual participants could not be identified.
Furthermore, although all groups were audio taped for transcription, the transcriptions did not identify participants by name. Lastly, all information was stored securely at the university, and will continue to be stored for a period of five years.

5.3.5 Agency Recruitment

Participants for the first four focus groups (two all-male and two all-female) were recruited by a paid marketing research company (Tallygate Research Services) from the Sydney area using a research database. These groups were conducted in qualitative research facilities in Sydney, NSW. Following this series of four groups, which acted in part as a training and refinement exercise, all other participants were recruited from NSW High Schools.

5.3.6 School Recruitment

Once the appropriate approvals were obtained, principals of secondary schools in the Illawarra, Sydney and North Sydney areas were sent letters asking for their participation. If they agreed to allow their school to participate, letters were sent home with those students who displayed an interest in participating. These letters contained information sheets and consent forms for both the student and the parent/guardian. Once these consent forms were read and signed, they were returned to the school and then an appropriate day and time for each school was scheduled.

5.3.6.1 Potential Limitations

There are several limitations to be taken into account when recruiting from schools. Firstly, although the researchers may desire to select specific schools due to their specific demographic construction, they are once again limited by the willingness of the school authorities to participate. Secondly, while the researchers can request a random audience for recruitment, the researcher is bound by the confines of the school authorities in regards to which potential participants they are given access to. The school principals or teachers may in fact take it upon themselves to pre-select students to participate in order to make a good impression (e.g., based on academic standing). Lastly, government schools were not included in the sample due to recruitment constraints, thus placing further limitation on the sample.

5.3.7 Costs & Timing

The first four focus groups were recruited by a market research agency (Tallygate Research Services) who were employed by the Centre for Health Initiatives using funding from an ARC
Linkage grant. The focus groups were held in a leased facility in the Sydney CBD that was designed specifically for conducting qualitative research.

The school focus groups were held on school grounds to minimise any participant travel costs, and they were organised at a time that did not cause undue disruption to the educational programs at each school. Times were decided on by the individual school principal/teacher(s) and all costs were met from the ARC project budget allocation for formative research.

Each group ran for approximately one hour; to minimise the time burden on each individual school, and where possible, the two groups (male and female) were conducted simultaneously.

5.3.8 Compensation

Each participant recruited by Tallygate Research Services received a cash payment of $50. This payment is inline with standard company recruitment payment policies and was issued in cash at the end of each group session.

Each of the students who participated in focus groups recruited from schools were provided with a $20 gift voucher from Surf Dive & Ski (an Australian surf/clothing chain store) as compensation for their time and contribution to the research. Providing this compensation for the students who participated in the focus groups was reasonable as they were being asked to give up personal time and divulge information about personal beliefs and behaviours. Each school was also offered a $200 gift voucher as a thank you for its participation; these gift vouchers were provided from a location of the individual school's choice in order to make it a more personalised thank-you. A 'thank you' gift for the school(s) was important as it acknowledged their effort in recruitment and participation in the study and also maximised the chances of establishing a relationship which could be utilised in the future for a follow-up study (i.e. brand loyalty survey).

5.4 FOCUS GROUP DISCUSSION DESIGN

5.4.1 Research Themes

As this research centered on the principles of social marketing, the marketing mix was employed in the design of the data collection. More specifically, in order to capture the current and potential product usage as well as perceived costs and barriers, the Products and Price
components were used as a foundation for the focus group discussion. Therefore, during the focus groups, participants were invited to discuss sun protection products in regards to product use, preference and brands, the consequences of both sun burn and skin cancer, and the nature and use of fake tans.

5.4.2 Use of Projective Techniques

According to Shoveller and Associates (2003) conducting research with adolescents can be difficult, largely due to the fact that they often struggle to reflect on and articulate their experiences. Thus, this research placed an emphasis on using projective techniques within the focus group discussions. Projective techniques allow participants “to express their feelings in pictures and in other ways (other than verbally) that aren’t threatening” (Klein, 1989. p 28), and are designed to measure a respondent’s attitudes, feelings and motivations that they may be unable, or unwilling, to communicate otherwise (Hawkins et al., 1994).

Projective techniques were originally used as psychological assessment techniques to better understand personality and individual character traits (Rabin, 1981). These techniques were later adapted by researchers to better understand general perceptions, core concerns and motivations, rather than being a mere personality evaluation technique. These techniques have long since been used by market researchers in an attempt to tap in to underlying issues (Kay, 2001; Klein, 1989; Hollander, 1988) and to combat problems associated with many individuals finding it hard to express themselves verbally (Klein, 1989).

Projective techniques such as drawing pictures, photo sorting, third person technique (Schiffman & Kanuk, 2004), role-playing, puzzles and completing activity sheets (Kennedy, Kools and Krueger, 2001), word associations, sentence completion, and cartoon techniques (Hawkins et al., 1994) are part of the larger area of motivational research, which is used to “delve into the consumer’s unconscious or hidden motivations” (Schiffman & Kanuk, 2004, p 113). Kennedy, Kools and Krueger (2001), who conducted methodological research with children, believe that interweaving topic questions with activities (such as those mentioned previously) allows young people to communicate their thoughts in a number of different ways while simultaneously responding to the topic at hand.
5.4.3 Focus Group Discussion Guide Structure

There are a number of structural considerations to be noted in the development of a focus group discussion guide. Firstly, guides should include introductory activities, such as a welcome to participants, an establishment of the scope of questioning, a round the table turn of giving names, age and other information about themselves (such as a hobby, etc.); and an establishment of ground rules such as ‘no wrong answers’, ‘try and let others speak’ and ‘no put downs’ (Kennedy, Kools & Krueger, 2001).

In terms of the actual format of a discussion guide, it can be either a ‘topic guide’, which is a list of key words or phrases which serve as cues to the moderator, or a guide with a sequence of full sentence questions (Mitchell & Branigan, 2000). The latter was preferable for this research as, although it takes more time and effort to prepare than a topic guide, it is more beneficial for projects that employ more than one moderator and ensures that all questions intended by the research are adequately addressed (Mitchell & Branigan, 2000), while still allowing for unique contributions. Overall, the recommendations for focus group questions are that they be clear and open-ended, and of course, unbiased (Mitchell & Branigan, 2000). Furthermore, the focus group discussion guides should always begin with broad, general questions, and proceed on to the more specific and more sensitive ones (Peterson-Sweeney, 2005). This allows for establishing foundations for each participant’s experience with the topic area, as well as establishing a level of comfort with the group members (Peterson-Sweeney, 2005).

The focus group discussion guide for this research was thus designed to open with general discussion on sunburn and sun protection. The discussion then focused on more specific topics concerning actual product use and the motivations behind lack of sun protection use. A number of projective techniques were included in the discussion guide. The first was a card sort activity that required the participants to divide 20 different image cards of different forms of sun protection into those they would and would not wear. This was designed to enable discussion on product types, brands and fashion. In the second, participants were asked to imagine they had been asked by their favourite designer or label to design a form of sun protection that people their age would wear/use. This could be done, working in pairs, by changing an existing product, or by designing something completely new. This allowed the participants and the researcher to creatively consider what things may actually affect protective behaviours.
The discussion guide was also designed to cover outdoors activities where sun protection may be needed. Lastly, participants were shown different pictures of celebrities that appealed to their demographic (for example, Mischa Barton and Chris Hemsworth) and were then asked to discuss fake tans and their relevance to celebrities and to themselves. In doing this, they also discussed the pros and cons of using fake tan. A copy of the actual discussion guide employed in the focus groups can be found in Appendix 1.

5.5 DATA ANALYSIS

All focus groups were recorded on digital recorders, and the audio files were wholly transcribed. The focus group data for this research was analysed manually, where by the researcher manually looked for common themes between the different focus groups. Following the format set out by Dunne and Somerset (2004), these transcripts were then analysed and coded to identify any recurring themes between the groups. As each group transcription was completed, the coding was refined to allow for any new developments. While the area of interest was predetermined, these transcripts were inductively analysed, whereby “codes and themes were developed from the data rather than being predetermined, as concepts and themes begin to emerge, it is possible to develop figures to display the central findings and demonstrate possible patterns and associations between them” (Dunne & Somerset, 2004. p 362).

After the core themes were identified, the ‘cut-and-paste technique’ was applied. The procedure for this technique requires coded copies of group transcriptions to be dissected and sorted into relevant topics (Stewart & Shamdasani, 1990). By cutting and pasting the transcripts, the process as used by Messerlian and Derevensky (2007) in their research with adolescent gambling, allowed the transcripts to be reformatted by question (or theme) rather than by group, so that all data pertaining to a specific topic area could be viewed as a data set rather than individually (Messerlian and Derevensky, 2007). Once this was completed, a holistic view of the themes was obtained.

5.6 SUMMARY

Focus groups are introduced as an effective data collection tool that produces valuable data through group interactions. The importance of focus groups is specifically noted with adolescents due to the importance of group dynamics and shared meaning that are included in focus group interactions. The sample population for recruitment in these focus groups was
NSW high school students from the Sydney, North Sydney and Illawarra regions, and while the first four focus groups were recruited by a paid recruitment agency, the proceeding ten groups were recruited directly from NSW high schools. The focus groups themselves were conducted with grade 9 and grade 10 students, divided by gender, had between five and 10 participants per group, and were conducted by trained moderators. The discussion utilised in the focus groups were based around the product and price components of the social marketing mix (discussed in chapter three), and included a number of projective techniques, and lastly, all participants were asked to complete a short demographic survey. Once all focus groups were completed, they were wholly transcribed and inductively analysed to allow for any emerging themes.
6. PRODUCT & PRICE-CORE AND ACTUAL

The following chapter is the second in a series of focus group result chapters. Firstly, the chapter outlines what themes are included in the product and price (core and actual) results. This chapter provides details of the general themes that emerged from the coding process in relation to the competing behaviours, and current burning behaviours. The impact of the transitional nature of the adolescent’s life stage is also outlined as reasoning for participation in the competing behaviour of burning. The perceived costs associated with the competing behaviour and its consequences are also identified. The chapter then introduces factors to be considered with the desired behaviour, such as what reminds adolescents to utilise sun protection behaviours, as well as factors that can influence their behaviours (e.g. friends and celebrities).

6.1 PRODUCT & PRICE (CORE AND ACTUAL) THEMES

As discussed in chapter three, the product component for this research is based on the behaviour of protecting, or not protecting, oneself from the sun. The marketing mix components in this instance are interconnected and themes relevant to the product and price components are often found to overlap. Hence, the themes for these two components have been grouped together by the product level type (core, actual, and augmented). Themes coded as product and price components in this chapter include those associated with the core product of reducing the individual’s overall risk of developing melanoma or non melanoma skin cancer, as well as issues surrounding the actual product (the behaviour of protecting or not protecting). These themes include those associated with the perceived risks and repercussions associated with the desired behaviour change, as well as perceived costs of the competing behaviours.
6.2 COMPETING BEHAVIOURS

6.2.1 Perceived At-Risk Groups

The participants acknowledged that everyone needs to protect themselves from the sun; however, several factors were identified by the participants as to who needs to be more vigilant in protecting themselves. These were:

- Older people
- People with pale skin or red hair
- Young children
- Those with a family history of skin cancer.

It was also widely acknowledged that repeated burning was a major risk factor for skin cancer.

“Old people, who didn’t have sunscreen around when they were young” (Male, Group 5)

“Really fair people” (Female, Group 8)

“I guess more little kids. Little kids aren’t used to the sun” (Male, Group 5)

“Well if you get burned too much or over a long period of time, you went to the beach every day and got burned every time, it increases your chances” (Female, Group 6)

“If you get burned often its pretty bad” (Female, Group 8)

While these are genuine risk factors that were also identified in the literature, the participants appeared largely unaware of the need for protection in their own age group. The adolescents in general do not focus on themselves as an at risk group. Instead, they focus on older people and younger children as the ones who really need to be protected. They seem to believe that they can change their behaviours later in life (and counteract previous bad behaviours) if anything negative was to happen to their health. On very few occasions did they address their own need for protection, and this was attributed to spending more time outdoors and in the sun than other age groups.

“Well if you see effects when you are older you can change, but if nothing goes wrong......” (Female, Group 6)

“It is for me, at this age, maybe not long term (doing enough to protect yourself)” (Female, Group 6)
While not seeing themselves necessarily as an at risk group, they do in general, display a relatively realistic idea of the chances of developing skin cancer later in life. While there is a level of concern over developing skin cancer in the future, the consequences are not real enough to motivate any substantial change in behaviour (as they assume it can just be ‘removed’).

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“When I go to the beach I do put sunscreen on, just not as often as mum would like me to. I do worry about it and I am conscious of it”  (Female, Group 12)

“I think about it because my mum has had heaps of skin cancers cut out. So I’m scared of it, but sometimes I’ll forget to put on the sunscreen, then when I get really burnt I’m scared I’ll get skin cancers”  (Female, Group 12)
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A major factor in not wearing sun protection is the perception that people with skin that tans, or are naturally darker, are not at risk of skin cancer. In fact they appear to believe that if a person has the ability to tan (rather than just burn and peel), then they naturally have minimal chance of developing skin cancer and thus will intentionally not wear sun protection.

### 6.2.2 Sun Burn Behaviours

Almost every participant admitted to being sun burnt at some point in their lives, with many reporting fairly severe burn at some point in recent years. This is in spite of the participants being abundantly aware that sun burn is dangerous to their health.

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“I don’t get burnt a lot but when I do I get heaps bad burn, and it’s usually its like – one time I was out in the surf for um, like five hours with – it was in the hot part of the day and I got burnt heaps bad and couldn’t sleep for like a week. My neck was heaps bad”  (Female, Group 10)

“Yeah, I’ve only been burnt a couple of times in my life, but when I did it was heaps bad. I wore Sunscreen after that and I still do”  (Male, Group 9)
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One of the main reasons participants gave for why they continue to get burnt is not due to an intentional effort to gain a tan, but instead simply that they do not use enough sun protection, generally through forgetfulness or laziness. This means that although they often start out with good intentions, they fail to continue with positive behaviours.

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“Because I forgot, having too much fun”  (Male, Group 7)

“Because I usually put on sunscreen but then it wears off and then I don’t worry about it and then I get burnt”  (Female, Group 10)
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On a number of occasions the participants attribute the lack of re-applying sunscreen/wearing sun protection to spending long periods of time in the water and their inability to access sun protection without having to stop what they are doing.

“Because you have better things to do than running and putting on sunblock, I really should because I do get badly burned, because fair skin, but I just don’t” (Female, Group 2)

“Yeah because like if you’re at the beach and you’re swimming its kind of the last thing you want to do is get dry and have to reapply it” (Female, Group 2)

“It’s like a hassle to reapply like three hours. I usually spend a lot more than three hours in the water so I usually forget and then when I come out I’m burnt already. I just put it on then” (Male, Group 7)

In general, they do not think about sun protection or the long term consequences of their actions until it is too late and they have already been burnt. Even when/after experiencing the consequences of being sun burnt (such as pain and peeling), this is still not enough to motivate or remind them to apply sun protection the next time they are in the sun. Often they are only prompted to consider the consequences of burning when they are reminded by family, see advertisements, or actually feel themselves getting burnt. Generally the motivation to protect themselves that is generated by a previous burn or even an advertisement is short lived when the message is not reinforced.

“You don’t think about it at the time. You think about it afterwards. You think about it if you see it on TV” (Male, Group 3)

“I never even think about it, not until the next day when I’m sunburned” (Female, Group 6)

“Is it true that you get ninety nine percent of wrinkles from the sun and only one percent from aging? I’ve read that somewhere. After I heard that I wore sunscreen everyday for like a month and then I forgot” (Female, Group 6)

“After I got burnt I tried to convince myself to wear sunscreen but it just takes too long” (Male, Group 7)

6.2.2.1 Transition Phase

Similar to previous research (Cavaiola & Kane-Cavaiola, 1989), the current results also reveal the transitory nature of adolescents as they develop their own sense of identity. This transition is evident within their sun protection behaviours. With the incidence of sunburn being attributed to forgetfulness and laziness among many of the adolescents, an important issue to acknowledge is the obvious problem with the transition between relying on their parents to assume the responsibility of reminding them to wear sun protection, and being
responsible for themselves. When young people enter adolescence they begin to spend more time away from their family, and more time socialising with their friends. From these focus groups, it has become abundantly clear that when they are with their parents, they are generally responsible, and this is in large part due to their parents reminding, or forcing them to do so. Parents were described as both ‘nagging’ them to wear sun protection, and getting mad at them if they end up sun burnt.

"Yes, mine are always on my back" (Male, Group 3)

“My parents remind me” (Female, Group 6)

“When I go to the pool or something, like every hour they get you to put it on again, just keep on hammering you about it” (Male, Group 1)

However, once the parental figures are removed, the adolescents are not assuming the responsibility of sun protection for themselves. They are still heavily reliant on outside factors to remind and motivate them and thus in many cases they are not wearing appropriate sun protection, and are getting burnt. This is where the main problem occurs, as once they are away from the positive influence of their family, they begin to display negative behaviours. Often these negative behaviours are not intentional, but are instead a result of unfamiliarity with having to consider and assume responsibility for their own sun protection.

“My mum doesn’t allow me out in the sun without sunscreen, a proper t-shirt and a hat, but when I get down the beach with my friends I forget to put sunscreen on and that’s when I get burnt” (Female, Group 12)

“Like when I went to the beach I wasn’t with my parents, I was with a whole heap of friends, that’s when I got burned, some people didn’t get burned but lots did, its because you didn’t have your parents there to tell you, and its not really high on your list to do, you just want to have fun more” (Male, Group 1)

In addition to spending more time independent of parents/family, they are also making a conscious shift to identify themselves as no longer being children. They willfully distance themselves from anything that could be associated with ‘childhood’, and in many cases, this causes them to avoid certain forms of sun protection due to its association with younger children. An example of this distancing behaviour is the negative reactions to products such as the legionnaires hat (which is part of the uniform for most Australian primary schools), rash vests (which many are forced to wear in childhood by their parents), or even the general concept of wearing/applying sun protection being associated with parental control (and thus childlike).
6.2.3 Perceived Costs of Sunburn

When the focus group participants were asked to identify what the worst thing about being sunburnt was, rarely was skin cancer ever mentioned as a factor. Instead, the more direct effects of pain and embarrassment were seen as the more severe consequences. Sunburn was associated with pain, difficulty sleeping and discomfort in clothes. It was also greatly associated with peeling, and the embarrassment that comes with either having peeling skin, or being bright red.

“And you can’t do anything because it hurts too much when you move” (Female, Group 4)
“Like when your back gets sun burnt, that's hard as you can’t sit up against anything” (Male, Group 7)
“Touch it, and it hurts” (Female, Group 4)

“You can’t sleep, yeah at night because when it peels” (Male, Group 3)
“Makes you look stupid” (Male, Group 1)
“I went out once and I was peeling and it was kind of embarrassing, trying to hide” (Female, Group 2)
“Everyone tells you that you’re burnt and you don’t tan and they laugh at you” (Female, Group 12)

In addition to this, when discussing long term consequences, generally (for the females in particular) the concept of getting wrinkles later in life was seen as the primary negative consequence, rather than cancer. Only on very few occasions was cancer discussed as a negative consequence of sunburn

“The realisation that you can get wrinkles” (Female, Group 8)
“It ages your skin” (Female, Group 8)

This is consistent with previous literature provided in chapter two on young people’s perceptions of health risks, such as smoking (Lowry et al., 2002), where long term health effects (such as the notion of skin cancer) are perceived to be irrelevant for people their age. Furthermore, the importance placed on appearance during this life stage explains the heavier weighting of the appearance based (wrinkles) consequence.

“There are just no big consequences” (Female, Group 12)
“It’s not about what is happening long term” (Male, Group 11)
6.2.4 Perceived Costs of Skin Cancer

As previously mentioned, the seriousness of skin cancer does not seem to have any deterrent on the participants. In most cases, they do not even consider cancer to be a factor when thinking of the negative consequences of sun burn. Often they only consider the long term consequences of skin cancer when prompted (by advertisements for example).

"You don't think about it at the time, you think about it after it. Like when you see shows on TV" (Male, Group 13)

In regards to considering the actual consequences of skin cancer, those participants who have had family members or friends die from skin cancer appear to be the only participants with a realistic view of the severity of skin cancer, and this obviously stems from their personal experience of the consequences.

Most others see it as an easily treated inconvenience with no severe consequences. In fact, when discussing the impact of skin cancer, the common response was that it would be burnt or cut out, and you would be left with a scar. The fact that people die from skin cancer was never really addressed.

"You’d go and get the little mole things cut out or something" (Female, Group 8)
"Then go to the skin place and they can burn it or whatever they call. They have that laser, zapper thing" (Female, Group 8)

Interestingly, males appeared more realistic as to the long term consequences of skin cancer than females. The fear of needles was also addressed as a negative point when discussing the consequences of skin cancer in reference to the treatment.

"I haven't had needles and all that but it would really- it takes me a while to get um, you know make up my mind I’ll do it so it’s really annoying to get skin cancer" (Female, Group 8)

“Oh I’m terrified of needles” (Female, Group 6)
6.3 IMPLICATIONS FOR DESIRED CORE & ACTUAL PRODUCT

6.3.1 What Reminds Them

When examining the lack of responsibility shown during this transition phase, we need to understand what actually reminds young people to wear/apply or re-apply sun protection. In the case of these participants there were four main factors:

- **Parents**: Their parents/family remind them, either before they leave the house, or during exposure when actually with their family. In this instance (actually in the presence of family), they rely on parents to provide sun protection and remind them to apply/reapply.

- **Friends**: Through friends’ influence, either by seeing a friend using sun protection, or by being told by a friend to apply/use sun protection. This is usually in cases when a friend sees they are getting red from the sun, and is looking out for their best interest.

- **Observation**: Witnessing the impact of sun burn on someone else prompts sun protection behaviours. By seeing the impact (redness) the sun is having on someone else’s skin (either friend or stranger), they are reminded to protect their own skin to avoid the same consequences.

- **Sensation**: They feel they are actually being burnt by the sun. This is a dominant theme when discussing reminders. Often, they will not remember sun protection until they can actually feel the impact of the sun, and are thus reminded to protect themselves.

The majority of participants believed that if there were reminders other than these four (e.g. advertisements) at locations such as the pool or beach, this would also serve as an appropriate prompting.

“If there was a hot chick to put on sunscreen in a bikini” (Male, Group 7)

“Billboards or advertising at the beach, reminding you” (Female, Group 8)

“There’s not much at all at the beach and there should be” (Female, Group 8)
6.3.2 Outside Influences on Behaviours

As already stated, parental figures are generally a positive influence on sun protection behaviours. However, we must also acknowledge other outside influences that have an impact on adolescent sun protection behaviours, such as friends and celebrities.

6.3.2.1 The Influence of Friends

As parental controls diminish, friendship groups develop more influence on the individual and can be responsible for reinforcing positive or negative behaviours. In large part, the friendship group or other peers are responsible for supporting, or discouraging, sun protection behaviours. It is already stated that friends serve as a reminder to apply sun protection, but they also have influence over the actual behaviours of adolescents by accepting, rejecting or encouraging sun protection behaviours. Some of the participants in this study actually admitted to, at times, wanting to wear sun protection, but not doing so because their friends were not. In other cases, positive behaviours have been influenced by the participant seeing a friend applying/wearing sun protection and thus feeling confident to do so themselves. Overall, in regards to sun protection and adolescents, the friendship group is an extremely important factor to be aware of.

“You’re influenced by your friends. So if your friend doesn’t wear it, you’re not going to wear it” (Female, Group 6)

“You just sort of forget. So if you were at the beach and your friend pulled out sunscreen and started putting it on you sort of say “oh can I have some of that” (Female, Group 4)

“No, you see one person putting it on and think oh yeah I should put it on too” (Male, Group 5)

6.3.2.2 The Influence of the Celebrity

It is widely recognised that celebrities can be responsible for creating fashion trends and are in many ways responsible for what young people will and will not wear. There were in fact several references to fashion trends started by famous people that included sun protection, or discussing the possibility of developing a fashion trend using their celebrity status.

“I think sometimes it’s a bit of a negative stigma attached to um, wearing – I don’t know maybe rash shirts or hats or things that bulk you up, I don’t know whether - like maybe if it was popular to do these things and Paris Hilton was sporting a rash shirt” (Female, Group 6)

“They are cool sunglasses, all the celebrities are wearing them, and they’re big like Nicole Ritchie’s” (Female, Group 4)
6.4 SUMMARY

The participants appear to have adequate knowledge of risk factors associated with developing cancer, yet they do not necessarily see themselves as a current at risk group who is in need of the desired behaviour change. The majority of participants have experienced sun burn, but they do not directly attribute this to purposely attempting to obtain a tan, rather, it is a result of simply not utilising sun protection methods appropriately, and that often they do not follow through on behaviour intentions. Understanding the transitional nature of this life stage is of great importance to understanding adolescent sun protection behaviours, that is, the fact that they are becoming more independent of parental figures and taking more responsibility for themselves, as well as trying to purposely move away from being associated with childhood. The most severe cost associated with negative sun protection behaviours is not the fear of developing skin cancer later in life, but instead, the immediate pain and embarrassment associated with the redness and peeling of sun burn. In regards to influencing behaviours, sun protection can be encouraged by friends, family, observation or sensation.
This chapter, the third in the series of focus group results, reviews those themes identified which relate to the augmented aspects of the product offering. The chapter begins by firstly establishing the nature of the themes identified; it then continues to review the current sun protection product (augmented product) usage. This includes perceptions, preferences and analysis of product types, with particular interest in sunscreen (the most favoured sun protection product type). A number of interesting product issues are established, such as the desire for invisible protection, as well as the conflict of fashion over function as the participants attempt to avoid appearing ‘uncool’ by wearing appropriate sun protection. Potential augmented product designs are also discussed, as well as the role of branding, both current and future, in the sun protection product decisions for adolescents. Lastly, the chapter outlines the perceptions towards, and current and potential use of, fake tanning products.

7.1 PRODUCT & PRICE (AUGMENTED) THEMES

As discussed in chapter six, the product and price components in this instance are interconnected and thus have been divided by the product level type (core, actual, and augmented). The augmented product component is concerned with the tangible products that assist in the actual behaviour adoption. In this case these are the actual sun protection products themselves, such as sunscreen, hats, sunglasses and rash vests. Themes coded as augmented product components include those associated with the specific sun protection product usage, preferences and perceived risks. This also includes associated aspects of these products, such as the use of brands and the use of harm minimisation augmented products (fake tans).

7.2 AUGMENTED PRODUCT USE

The focus groups indicated that sunscreen is the most favoured form of protection for both genders, which is in line with previous literature on sun protection product preferences (Dobbinson et al., 2005); this is followed by wearing sunglasses. Males are more likely to wear hats than females; these hats are, however, baseball cap design rather than wide
brimmed. Females will also wear makeup with added sunscreen, and often they refer to their lip balm as a form of protection.

7.2.1 When Are They Protecting Themselves

Protecting themselves from the sun is largely associated with summer, and the beach or pool, which is in agreement with the general concept brought forth in the literature that sun protection is fundamentally associated with being in or near the water (Galileo Kaleidoscope, 2003). In most cases, the participants will not take sun protection to other activities, particularly in winter. If they are participating in an outdoor sporting activity they will often rely on applying sunscreen before leaving the house as the only form of protection throughout the day. If they do get burnt during this activity, this is still not enough to remind them the following week to take sun protection. Taking sun protection to sporting activities is only considered necessary by the participants if it is a hot summer's day, and even then it is not perceived as entirely necessary because, unlike the beach, they are wearing more clothing and will be outdoors for less time.

There were some more proactive participants who do take sunscreen with them for outdoor activities, but generally, levels of reapplication are still low. Lack of protection is attributed to several reasons, such as, forgetting, relying on others to provide the protection, and not wanting to reapply sunscreen when they are sweaty from sport. They also perceive that it’s unrealistic to expect to play most sports while wearing a hat and/or long sleeved shirt, as this would both hinder their ability to participate and is generally not part of the required uniform.

Additionally, taking sun protection with them was essentially associated with taking a bag or backpack with them. This means that outdoor activities that do not require them to ‘pack a bag’ (e.g. going to the park or for a walk) will generally lead them to wearing no sun protection.
at all. This also shows females being more proactive with taking sun protection with them, as they will naturally take a handbag with them on most occasions when leaving the house.

### 7.2.2 Protecting the Face

The participants reported that they place much more importance on protecting their face from the sun than any other part of their body. In many cases, if wearing sunscreen alone, they will apply it to only their face and disregard protecting the rest of their skin. While this trait is exhibited in both males and females, it is further reinforced by the use of makeup by females who perceive having SPF makeup on their face as being adequate sun protection. This is solely due to not wanting to ruin their appearance, either in the short or long term. In the short term they are trying to avoid having a red or peeling face which would be ‘embarrassing’, and in the long term they are trying to avoid both wrinkles and cancer scars later in life.

> “I usually just put it on my face, because that’s what I’m worried about, because I usually get burned on my shoulders, but they are usually covered, so I don’t really care about that, so I usually put it on my face” *(Female, Group 2)*

> “Yes, it’s different if you have marks over your arm, compared to your face, because your face is different” *(Male, Group 5)*

> “If I’m ever lying out in the sun trying to get a tan, no matter what way I’m lying I always have my neck and face covered because they’re the worst spots I get burnt. Every single day I always come home really pink and because it’s my face, that’s where I’m really conscious of skin cancers, so I always have my face covered” *(Female, Group 8)*

### 7.2.3 The ‘Invisible Protection’

The participants were very obviously caught in the struggle between wanting to look after their own health and the pressure to conform to fashion and peer pressure. This is also evident from an extremely common theme of wanting sun protection to be invisible. This desire is in line with rationalising why sunscreen is the most favoured form of protection (as it is generally invisible). This also strengthens the results that indicate the participants are not entirely fussy about brands etc. when it comes to purchasing sunscreen; they do however, place a lot more importance on the purchase decision of the more visible objects such as hats and rash shirts.

> “Things like hats and stuff where it’s more visible it’s a bit more important” *(Female, Group 6)*

> “I don’t think it matters about the sunscreen, but the clothes he was wearing, like the hat, you wouldn’t judge him on the sunscreen, only the clothes” *(Male, Group 1)*

> “Make an invisible one (what would make you wear a rash vest)” *(Female, Group 10)*
The desire for invisibility of sun protection even goes so far as not wanting to be seen applying sunscreen, or even have it mentioned in public. Additionally, they want sunscreen to be clear or tinted rather than white to further minimise its visibility.

| “You look stupid at the beach when you pull out the sunblock.” (Male, Group 5) | “When the parents yell out "put the sunscreen on" when you're at the beach (it's embarrassing).” (Male, Group 5) |

7.2.4 Perceptions of Others

There are three main perceptions that emerged when discussing peers who are wearing appropriate sun protection (e.g., a wide brim hat, rash shirt and sun screen). These were that they are either under the influence of their parents; a very strong willed and independent person; or a tourist. What is not clear from these focus groups is what exactly makes the participants distinguish between one and the other.

7.2.4.1 Nerd with Strong Parental Control

Someone who wears appropriate levels of sun protection is seen as being a ‘nerd’ or a ‘loser’ and a person whose clothing is largely controlled by their parents (which is not a positive thing to this group). This person is not generally considered ‘cool’ or ‘acceptable’ and may be considered immature. While they would not say anything to the person’s face, they would certainly laugh at them and comment to their friends. It was the basic presumption that they would be young, geeky and have few friends.

| “If it was kids our age then I'd just think they were like a nerd” (Male, Group 7) | “Ahem, like who has protective parents?” (Female, Group 14) |
| “Someone who doesn’t know fashion” (Male, Group 1) | “Bit of an outcast, with not many friends” (Female, Group 2) |

7.2.4.2 Confident & Strong Willed (and a Jokester)

At the other end of the scale is the concept that an individual wearing what adolescents consider to be excessive sun protection (but is otherwise adequate and the recommended levels) could be perceived as strong willed and independent. This is due to the fact that they
are able to make their own decisions regardless of what the majority norm is. In many cases, this person is perceived as wearing the sun protection as a joke, or to gain attention in the crowd.

“Someone with self confidence, who doesn’t mind looking like an idiot” (Male, Group 1)

“I respect them because they’ve got the guts – yeah be different” (Male, Group 5)

“Wearing it to be silly, to act stupid” (Female, Group 6)

7.2.4.3 The Tourist

Interestingly, the last assumption made of people who wear appropriate levels of sun protection was that they are possibly a tourist. They perceive that someone from overseas would not understand Australian fashion, and perhaps not be familiar with the beach and the sun and thus would need to be extra vigilant.

“A tourist might want to wear like things that we would not wear. Especially an English group” (Female Group 6)

“You see them with the zinc on their nose and they reckon they look cool (tourists)” (Female, Group 6)

7.2.5 Social Risks

7.2.5.1 Protect Your Image or Your Skin?

In the eyes of the participants, sun protection should be fashionable before it is functional, and they still want to look good when at the beach, pool, outdoors etc. In large part, sun protection- such as unfashionable wide brim hats and rash vests- is negatively received and the wearing of such products is perceived to be more appropriate for younger children and/or older people, and thus embarrassing for people in their age group. In fact, a main cause of adolescents not wearing appropriate sun protection appears to be that they have an overwhelming desire to ‘look good’ and avoid embarrassment, which outweighs the perceived need for protecting their skin.

“Sometimes you want to look good” (Female, Group 4)

“No, I couldn’t wear it, too embarrassing” (Female, Group 6)

The participants appeared torn between protecting themselves and protecting their image. When asked if it was a really hot day and they had no other forms of protection except for an ‘uncool’ hat, would they wear it, there was in fact a mixed reaction. Many believed that they
would wear the hat but only if it was really hot, while others believe that they would not wear it no matter what. The embarrassment of being seen in something that is considered unfashionable or ‘uncool’ was considered the main motivation for this decision.

| “No, I wouldn’t wear it” (Female, Group 4) |
| “Only as a joke” (Male, Group 9) |
| “That is definitely social suicide” (Male, Group 1) |

7.2.5.2 Critical Males

Interestingly, while being fashion conscious is generally perceived as a more feminine characteristic, the male participants appeared extremely conscious of what they wear, and furthermore, openly criticise each other at far greater levels than females. In most cases, their choice in wearing/not wearing sun protection is based on the perceived consequences from other males.

| “People sort of get paid out or something if they would come like wearing like a Go-Lo T-shirt” (Male, Group 1) |
| “They would probably get beaten up” (Male, Group 5) |
| “I want to protect myself from the sun because I know it’s harmful for you, bit its pretty daggy to turn up to school with a white sunscreen face and a wide-brimmed hat!” (Male, Group 5) |
| “Yeah. It’s more important to have friends now than to worry about cancer you might get later.” (Male, Group 7) |

7.2.5.3 Friends Vs Strangers

An interesting finding with these focus groups was that if they happen to be already friends with someone who is wearing what would be deemed ‘uncool’ sun protection, then that person is more accepted. A stranger on the other hand, would be subjected to judgment.

| “If they were my friend already and turned up in that I would be like oh ok but if they were a random person just walking up I would probably laugh at them” (Female, Group 6) |
| “If they were my friend already and they turned up in that I’d talk to them” (Female, Group 8) |
| “I guess it would be weird (wearing appropriate sun protection), especially with your friends, and it really depends on what kind of friends, good friends wouldn’t care, they might make a joke out of it, that’s it” (Male, Group 1) |
It also emerged that in regards to what the participants will or will not wear and why, that if they are not near their home, they will actually wear more sun protection. For instance, if they are on holidays with their family they will wear appropriate levels of sun protection, including sun protection products that may be considered uncool or unfashionable, simply because no one will recognise them. As there is no one there who they know, they do not care so much about how they appear.

> “If I’m down the coast surfing, I don’t care as long as it doesn’t burn me. They don’t know me down there as well as they do here” (Female, Group 12)

Although it has been brought up that good friends will not necessarily judge or criticise what they wear, there is also a sentiment through these groups that leads the researcher to believe that while the participants do not care what their family thinks of their fashion choices, they are still concerned with their friend’s reactions and opinions as to what they wear. This creates an interesting complication in that while adolescents do have some level of concern over what close friends think, they care more so what strangers think of them, specifically when they are out with their friends. Furthermore, when referring to caring what ‘others’ or ‘strangers’ think, this is generally a reference to people who they may have regular contact with, but do not consider to be a ‘close friend’, or who they believe they may come in to contact with again in the future. It is also generally a reference to other people in the same age group.

> “If I was with my family it would be OK, but if I was with my friends I wouldn’t wear it, if I was going to run into anybody” (Female, Group 2)

### 7.3 PRODUCT ANALYSES

#### 7.3.1 Sunscreen Analysis

While there were a small number of participants who simply do not like sun screen, the vast majority are pro-sunscreen, and it is quite clear from these groups that this is still the most

> “I put sun block all over when I go to the beach, not just on my face” (Female, Group 4)

A number of females will wear low SPF sunscreen on their faces most days, usually in the form of moisturiser or makeup. Additionally, some females have a sunscreen specifically designed for faces, as well as a regular sunscreen for the rest of their body.

> “I wear sunblock everyday; it’s in most of your moisturisers, in Olay, stuff like that” (Female, Group 2)
However, in general, the majority of males and females will only apply sunscreen if it is a hot/sunny day, or if they are going to the beach or pool. In addition, in most cases, they will only take sunscreen with them if they are going to the beach/pool. In most cases, the participants are relying solely on sunscreen to protect themselves from the sun, rather than multiple forms of protection. This in turn appears to be a major factor in the continual burning of adolescents.

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“I put on sunscreen every two and a half hours and I still managed to get a huge burn” (Male, Group 3)
“I go to the beach and I put sunscreen on and I still get burnt in places even though I reapply” (Male, Group 9)
```

7.3.1.1 Negative Aspects of Sunscreen

Despite being the most favoured form of protection, there are still a number of attributes of this product category that are disliked by the participants.

7.3.1.1.1 Sunscreen is Annoying and Difficult to Apply

This annoyance with applying sunscreen largely includes the time cost of actually having to physically apply the product, the effort required, and that it is sometimes difficult to rub in.

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“I don’t really like wearing sunscreen, it’s really annoying to put on and stuff” (Male, Group 5)
“I don’t want to be fussing on the beach, I just want to go out and have fun” (Male, Group 5)
“I like wearing sunscreen but it’s really annoying to put on” (Female, Group 14)
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The fact that sunscreen is hard to apply when you are by yourself was raised as an important issue. It is considered difficult to apply to your back, which results in not being completely protected. In addition, this situation is worsened for the male participants because, unlike their female counterparts, males are not willing to have other males apply sunscreen for them.

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“Having to ask a mate to rub it on your back” (Male, Group 9)
“Putting it on your back (is a hassle)” (Male, Group 11)
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7.3.1.1.2 Sunscreen Washes Off

The fact that sunscreen can wash off when they go in the water has several negative aspects: firstly that the product generally burns their eyes when it washes off their face; secondly, that it goes into their mouth which results in a disgusting taste; and lastly the fact that they need to wait after applying sunscreen before they go in the water (to prevent the previous situations) creates additional costs in time and effort.

“IT burns your eyes” (Male, Group 3)

“With sunscreen when you go to wash your face, it goes into your eyes” (Male, Group 7)

“Whenever I put it on my face and go in the water, it stings my eyes so badly” (Female, Group 12)

7.3.1.1.3 Sunscreen is Oily, Cluggy and Sticky

The product is perceived to be extremely oily which makes it annoying both to wear and to apply. They do not like the way the product feels on their skin and the oily feeling their skin retains after using the product. In most cases, the participants believe that even the products that claim to have a non-greasy formula are still uncomfortable to apply and wear. In addition to this dislike of the oily feel to the product, the fact that the oily residue can stain clothing is definitely a negative product attribute.

“Oily. Even if it's non-oily the sunscreens are oily.” (Female, Group 8)

“Because I reckon sometimes those sunscreens are really oily like it sticks to you and so I don't like putting sunscreen on.” (Male, Group 3)

The sticky feel of sunscreen is also negatively perceived. Examples of attempting to use it at the beach and having the sand stick to both the individual and the sunscreen bottle were provided. This is an annoyance because they get sand through their belongings and stuck to their person. The fact that sometimes sunscreen mixes with sand, and can dry out and become cluggy is also an issue. Examples were given of sunscreen bottles having the application nozzle clogged up and thus application made even more difficult and frustrating.

“With the sunscreens, sometimes they get all cluggy and bitty, and that’s only 15+” (Female, Group 6)

“At the beach it’s sticky. I mean the sand sticks to it.” (Female, Group 2)
7.3.1.4 Sunscreen Smells Bad

The smell of the product was discussed as a negative feature. Both males and females dislike the chemical smell of sunscreen, and additionally males tend to dislike those that are fragranced. Females on the other hand prefer coconut, lemon and frangipani fragrances.

“It’s the smell that bugs me. I hate the smell and when it gets in my mouth I hate.” (Male, Group 7)

“The smell gets to you” (Female, Group 6)

7.3.1.5 Sunscreen Makes You Look Paler

As most sunscreens are white in colour, they perceive that applying it makes them look paler than they really are. The participants noted that if they do not rub the product in completely, then their skin will appear whiter than it usually does, and that some thicker creams will give a paler appearance no matter what. This of course is of concern to them due to the negative perceptions of being pale. In order to combat to this, they did offer the advice of providing clear and tinted sunscreens.

“Pasty, makes your skin look paler.” (Male, Group 7)

“You can get brown zinc. Maybe a sunscreen that colour so it’s not white when you put it on.” (Female, Group 4)

“You can get tinted moisturizer so why not tinted sunscreen?” (Female, Group 12)

7.3.1.2 Sunscreen and SPF Rating

As already mentioned, there was a small group of the participants who participate in risk reduction tanning, whereby they wear low SPF rated sunscreen while they intentionally tan. The majority of the participants, however, do place an importance on the SPF rating of the sunscreen. There appears to be a sentiment that if they are going to bother putting sunscreen on, then it may as well be a strong one. Additionally, they appear to think that the higher the SPF rating a sunscreen has, the less they have to reapply it.

“ Anything lower than 30+ is not worth putting on” (Male, Group 9)

“If sunscreen is only 15, wouldn’t protect you much so you would have to keep applying it” (Male, Group 1)

“If I’m at the beach I’ll use nothing lower than 30” (Female, Group 12)
7.3.1.3 Sunscreen Types

The spray on sunscreens is often preferred, with the application type believed to be quicker and easier to apply, with no real need for rubbing in. The participants believe that because of these reasons they would most likely reapply more often, as it obviously takes away some of the time and effort costs associated with wearing sunscreen.

“Because it’s easier to apply, it gets absorbed into your skin, like the cream stays on your skin for ages and put a shirt on and it sticks to it and it doesn’t feel comfortable” (Male, Group 7)

“I think the spray on is easier to apply and it’s good. You don’t get a big chunk and it’s quick to apply” (Female, Group 10)

“The spray one is so much easier and it doesn’t get the sand to stick to you like the cream one. It soaks in and the sand doesn’t stick to you” (Female, Group 12)

Like the spray on sunscreen, roll-on sunscreens are looked upon favourably, as they are also considered easier to apply.

“In summer I buy a bottle of roll-on which I keep in my school bag” (Female, Group 10)

7.3.1.4 Sunscreen Ownership & Product Engagement

While sunscreen is obviously still the most favoured form of sun protection, there does appear to be a level of disengagement with the product category. There are of course specific product dislikes and preferences which have been previously outlined, but in terms of ownership, in comparison to other sun protection products, it appears that they are complacent about obtaining the product. In most cases, the participants are merely provided with sunscreen and never really actively take a role in choice or purchase. They will usually ‘just grab what is around the house’ and rely almost wholly on their parents to make the purchase decision.

“At the moment I could probably count about 13 different brands of sunscreen lying around our house” (Female, Group 12)

“I have sunscreen in every different bag I have because my parents get it from work. They work for a company that sponsors surf lifesaving so they get all that stuff free” (Female, Group 2)
While they appear to have no real brand loyalties when discussing sunscreen, they do however have preferences for the perceived quality of sunscreen in terms of its effectiveness, reliability and SPF rating.

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<thead>
<tr>
<th>Quote</th>
<th>Source</th>
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<tbody>
<tr>
<td>“Doesn’t really matter (which brand), so long as it has been approved”</td>
<td>Female, Group 8</td>
</tr>
<tr>
<td>“Some are not as good as others, you get the ones like from the Cancer Council that are approved- then it’s a good quality”</td>
<td>Male, Group 1</td>
</tr>
<tr>
<td>“Any brand will do, so long as it is 30+”</td>
<td>Female, Group 4</td>
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Major advertised brands are perceived as having higher quality than lesser known brands.

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<th>Quote</th>
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<tbody>
<tr>
<td>“If they are advertised then you know they are from a big brand”</td>
<td>Female, Group 8</td>
</tr>
<tr>
<td>“I use Banana Boat. I remember the ad”</td>
<td>Female, Group 12</td>
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If they perceive the product to be low quality, they would be inclined not to use it. Interestingly, in some cases ‘no name’ brands would not be used due to the negative perception of using them (i.e. that you couldn’t afford a better one).

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<th>Quote</th>
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<tr>
<td>“Because if you go to the beach with no frills its like chronic............”</td>
<td>Male, Group 1</td>
</tr>
<tr>
<td>“It’s like you can’t afford decent sunscreen”</td>
<td>Male, Group 1</td>
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Although the perception of ‘cheap’ brands is something that they will consciously try and avoid, adolescents do not believe too much money should be spent on the product. In this situation, they would prefer to have mid-range, well known and trusted brands that are relatively inexpensive compared to the more expensive designer or surf brands.

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<th>Quote</th>
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<tbody>
<tr>
<td>“The brand ones are expensive; they just get extra money off you”</td>
<td>Female, Group 10</td>
</tr>
<tr>
<td>“Not really (purchase an expensive brand), just paying for the name”</td>
<td>Female, Group 6</td>
</tr>
<tr>
<td>“I use the Coles one, it’s probably no frills, but that’s fine, but if it’s the black and white packaging, then no way”</td>
<td>Male, Group 3</td>
</tr>
<tr>
<td>“I wouldn’t go and buy Billabong sunscreen, just the usual”</td>
<td>Male, Group 5</td>
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7.3.1.5 Sunscreen Purchasing

For sunscreen, the participants rely almost solely on their parents to provide the product, if they did have to make their own purchase they would most likely shop at a supermarket.
In general, adolescents believe that a new type of sunscreen needs to be developed that addressed all the current problems that sunscreen exhibits.

Following are basic product recommendations discussed in the focus groups;

- High SPF rating
- Well known/trusted brand
- Easy to apply (preference for spray and roll on)
- Non-fragranced (males) and flavour fragranced (females)
- Lasts longer in the water
- Tinted
- Non greasy
- Appealing bottle
- Easy to access
- Convenient size

7.3.2 Zinc Analysis

As sunscreens’ highly visible colleague, zinc is believed to be an excellent protector but, once again, there are several downfalls to the product category that hinder its increased usage. Zinc as a product is largely associated with surfers, and it is perceived that the product should only be worn in ‘appropriate’ situations; they believe it can/should only be worn at the beach, and that it basically works to identify yourself as a surfer or lifeguard (generally using white zinc). It is also heavily associated with sports carnivals and other such events where coloured zinc is a form of celebration and barracking.
For product specifics, zinc is believed to be difficult to remove, but easier to apply than sunscreen as it is not entirely necessary to rub it in. Additionally, it is less likely to wash/rub off in the water.

In general, zinc is more favoured among males than females; however, females discussed an interest in the clear and tinted versions that are now on the market.

### 7.3.3 Sunglasses Analysis

Second only to sunscreen, sunglasses are a preferred method of protection for females and are also highly favoured among males (alongside hats). However, for females, the actual protective nature of the sunglasses is seen as a bonus rather than a motivation for purchase. They would much prefer to purchase cheaper fashion glasses that may or may not have protective lenses. They do not tend to base their purchases on brands or protective rating, but rather on appearance and price. The sunglasses would have to be ‘trendy’ and relatively inexpensive (under $50). This is mainly due to the disposable nature of fashion trends and their desire to keep ‘in fashion’.
Sometimes females will buy a pair of more expensive protective glasses, but often these will not be their ‘everyday use’ sunglasses, instead they are reserved for the beach and other such occasions. For the more expensive purchases, they still put appearance above protection, but are far more brand focused. In this case, they are not very price sensitive; in fact they are willing to pay up to a few hundred dollars for a decent pair of sunglasses.

Males on the other hand prefer to purchase sunglasses which are more expensive and from well known brands. Due to the more expensive nature of their product choice, male’s sunglasses are more likely to have protective qualities; however, like the females; this is inadvertent as they are primarily motivated by fashion. Males base their decision on style and brand. In terms of protection, they did discuss trying to reduce glare when they are outdoors, but no real attention is paid to the actual protection levels of the glasses.

Sunglasses appear to be a largely independent purchase item. While they still rely on their parents for financial assistance, they do however prefer to have control over product choice. Often the participant will also go shopping by themselves, or with friends to purchase these items. Generally these items will be purchased from surf shops, fashion stores and sunglasses shops.

7.3.4 Hat Analysis

Hat wearing is clearly more popular among males than females, as the females do not like having their hair messed up. They will however wear them at the beach if it is a hot day.
While males are more prone to hat wearing, they do admit that in many cases this is a result of fashion rather than sun protection. It is an acceptable fashion accessory for them more so than females. Another benefit and/or reason for hat wearing given was that it is also a way for them to hide messy hair.

“75 percent is probably the fashion side of it; the rest is probably........not." (Male, Group 1)

“Some people might wear it, because of their hair, or it makes their hair look better, I'm not sure” (Male, Group 1)

“Some people it's like 100% fashion, because they wear their hat backwards and no protection” (Male, Group 1)

Hats that cover the back of the neck, and wide brimmed hats, are perceived negatively. In general, there was a clear agreement that adolescents will never concede to wearing legionnaires hats (those with a flap that covers the neck). They believe that legionnaires hats are 'embarrassing' to wear, and are solely worn by young children and elderly people.

“It's embarrassing, I would never wear that” (Male, Group 3)

“Kindergarten hat” (Male, Group 13)

“Little kids, little like a two year old hat” (Female, Group 14)

“It's like something my grandmother would wear” (Female, Group 10)

However, for the wide brimmed hat, the female participants conceded that if it was fashionable, they would probably wear them. Once again this is not motivated by sun protection, but rather by appearance. In fact they do remember when wide brim hats were fashionable.

“It would probably have been in fashion about 2 or 3 years ago. But now it's not normal" (Female, Group 6)

7.3.5 Rash Vests, long-sleeved shirt Analysis

Like zinc, rash vests are principally associated with surfing and the beach. While it is acceptable for males to be wearing a rash vest, they are generally considered unfashionable or ‘daggy’ for females because they are unflattering and mask their bikinis. Often females like to wear board shorts, and they believe that wearing board shorts and a rash shirt is too covered and unflattering.
They are also considered relatively uncomfortable by both males and females as they are 'clingy' and have high necks and, other than surfers, are associated with older people (parents) and young children.

Interestingly, a major discussion point was often that wearing a rash shirt resulted in annoying tan lines.

Like most things with adolescents, the point was raised that if the rash shirt looked good on them, and was an acceptable style and colour, they would not have any major issues wearing it. Long sleeved rash shirts are less acceptable than short sleeved, and are almost wholly associated with surfing.

In general, long sleeved t-shirts are not a product that the participants will wear as sun protection. They believe they are too hot to be worn in summer, and are thus uncomfortable. They would wear them if it was a cold day or in winter.

These products (also including hats) are generally purchased through parent and adolescent consultation. Generally, the adolescent will go shopping with their parents and, even if the adolescent does not physically go with their parents to buy the item, they expect to be able to
take it back and exchange the product if they dislike it. Often the participant will also go shopping by themselves, or with friends, to purchase these items. Generally these items will be purchased from surf shops and other fashion stores. Despite at times not actively participating in the product purchase, they still expect it to be something fashionable and of good quality.

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“Its more of what you need, if you need a hat you want to get a good one, you are not going to get a crappy one” (Male, Group 1)

“It depends if I’m there or not, if I’m not there my parents will just buy it and if I don’t like they will just take it back” (Female, Group 6)
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**7.4 POTENTIAL PRODUCT DEVELOPMENTS**

During the focus group process, participants were involved in a number of projective and design techniques. One such technique required participants to design potential products to improve adolescent sun protection, either by altering a current augmented product, or designing an entirely new concept. In line with the themes of laziness, reminders and invisibility, much of the hypothetical product designs included more convenient packaging and application types for sunscreen, forms of reminders, as well as reducing the visibility of sun protection products. Following are some of the more interesting (and, in many cases practical) design ideas.

**7.4.1 Sunscreen and Zinc Ideas & Modifications**

When designing potential sun screen products there was a heavy emphasis on; compact and convenient product packaging; transparency in the sun screen itself or sun screen that makes you appear tanned (i.e. tinted); products that last a long time; and products that require minimal rubbing in when applied. The prices of such products were also kept realistic, but affordable (generally $10-$15).
There was also a consistent theme of designing sunscreen products that were completely invisible to others or that took little to no effort or lifestyle change – however unrealistic these ideas may be.

Some ideas were to have sunscreen attached to board shorts, wrists, body/surf boards, ankle straps, key rings, etc., to make access more convenient.
7.4.2 Reminders

During these design techniques, rather than designing actual augmented products, often participants developed advertisements or prompts that they believe would remind people their age to wear and reapply sunscreen (again showing their preference for wearing sunscreen only). Such reminders included loud speakers at the beach which sounded every hour with reminders to apply sunscreen; billboards depicting reminder advertisements with slogans such as “Reapply or you may die!”; or depicting young people who developed skin cancer. Other ideas were to have lifeguards patrolling with sun screen who encourage beach goers to apply the product, and personal alarms and reminders.

One design concept went so far as to design a sunscreen that would let you know when it needed to be reapplied.

“I came up with the idea of a sunscreen; you put it on and at a certain amount of time and when it starts to rub off it goes a green colour to remind you, so when you see it going green it reminds you. So it rubs into your skin normally at first and then after two hours or three hours or whatever, it changes colour to remind you to put it on again” (Male, Group 9)
7.4.3 Clothing, Rash Shirts & Accessories

Participants largely expressed a desire for more comfortable, fashionable and affordable rash vests which of course must display a surf brand of some sort. Additionally, rash shirts that could not be seen (although unrealistic), or that appeared like normal t-shirts.

“A rashie so you can wear a normal shirt, it’s like a normal shirt, but when you are in the water it acts as a rashie. You don't have to go to the beach and take off your normal shirt, and put on a rashie” (Male, Group 7)

“A basic shirt, looks like a normal t-shirt, that you can go in the water with and dries quickly, like a rashie, but it looks like a normal t-shirt. Doesn’t look like a rashie. You could wear it to the beach and wear it back and it would be dry” (Male, Group 3)

“We’ve got a rash shirt that covers your shoulders and your back but it’s not too tight around the neck. Its low cut. It comes in lots of brands and lots of styles, colours and sizes” (Female, Group 4)

“This is the invisible rash shirt so it doesn't exist unless you know that you’ve put it on but yet it still offers the same protection from the sun” (Female, Group 2)

Other ideas included waterproof sunglasses, fashionable kaftans and sarongs for females, and fashionable wide brimmed hats and baseball caps.

“We have this umbrella thing for a park because most parks, I like sitting in the shade, I would prefer to sit at a table something like that, some don't have shade, you press the button and the umbrella comes up” (Female, Group 10)

“We designed a floppy hat because you said you didn’t like the straight ugly brim. It's floppy, comfortable, and it flops down at the back and protects your neck. It also protects your ears and face. We’re selling it for $20 and its Roxy” (Female, Group 12)

7.5 BRANDING

It was overwhelmingly clear that brands pay an integral role in the consumer behaviour of these participants. Product preference is most often based on the brand that produces it.

“I reckon brands, just says like the Target brand. I don't know what the Target brand is Piping Hot or something. I reckon that teenagers would rather go for the Billabong. If you had them both there they will obviously go for the Billabong because it's more appealing to teenagers” (Male, Group 1)

“Billabong hat (would wear) – because of the brand” (Female, Group 14)

This preference went so far as a product with no label being deemed unsuitable to wear, but the identical product with a visual brand label would be acceptable.

“Just put a logo on it” (Female, Group 4)

“If it had a logo it might help” (Female, Group 4)
A natural association between surf brands and sun protection was clearly established with a preference for such brands as Billabong, Roxy, Rip Curl, and Quicksilver. However, there were other brands mentioned in regards to preferences which are associated with skateboarding such as Globe, Volcom and Element, and snowboarding brands, such as Von Zipper. Specifically related to sunscreen, the main brands mentioned were Banana Boat and the Cancer Council.

7.5.1 Product Appearance Overriding Brand

While there is a heavy emphasis on wearing/using branded products, it is important to note that appearance of the product is still important. In most cases, if it was a brand they didn’t really like but was an appealing product, and did not look like it was an inferior brand, then they would still use it. In this case, perceived inferior brands will only be worn if there are no obvious logos or markings that identify it as belonging to that brand.

7.5.2 Create a New Brand?

In regards to sun protection, a notion was raised that perhaps it would be beneficial to introduce a new brand that sold augmented sun protection products, and was specifically designed to be positioned along side surf brands, but to be available in a wider variety of outlets.

“I reckon not a typical surf brand thing cause if it’s just another thing coming out from a surf shop, people just don’t buy it, because they still sell costumes and stuff there. Maybe if they saw it coming from a label that wouldn’t do it, they think it’s new” (Female, Group 12)

“Something different, that’s not confined to surf shops” (Female, Group 12)

However, others argued that a well known brand could have more impact and an overall greater appeal to the majority.

“You get the well known ones that can make a difference” (Male, Group 11)

7.5.3 The Cancer Council Brand

As an industry partner to this current research, the Cancer Council brand was of particular interest. The participants were therefore asked to discuss their perceptions of the brand, and the focus groups indicate that the Cancer Council brand was very well received by this age group. They perceive it to be a trustworthy and reliable brand. Even if something is merely endorsed by the Cancer Council (rather than produced directly by them), the endorsed
product is automatically perceived as high quality. Overall, the Cancer Council is associated with knowledge and protection.

“*It’s from the Cancer Council, so it’s gotta be good*” (Male, Group 5)

“*Yeah Cancer Council they know what they're talking about*” (Female, Group 2)

“*The Cancer Council like its trustworthy … yeah, trustworthy*” (Female, Group 4)

The participants have a strong liking for the Cancer Council’s sunscreen, with particular reference given to the Cancer Council’s ‘Sunsense’ product (particularly by females).

“I use that Sunsense stuff” (Female, Group 4)

“Yeah that’s my favourite sunscreen brand” (Female, Group 4)

However, in a general sense, beyond the sunscreen products, most of the participants do not purchase or wear Cancer Council products despite having positive attitude to the brand. They also do not see Cancer Council products as being fashionable, therefore, despite perceiving it to be the best brand, they will not wear an obvious Cancer Council branded product, opting instead for fashion products and/or other brands.

“I would choose a Cancer Council product over a surf brand if it was a sunscreen but if it was like a rashie or boardies, I would probably choose the surf brand” (Male, Group 3)

7.5.3.1 Potential Cancer Council Endorsement

The focus group participants brought forth the discussion point of the Cancer Council combining with another brand to increase its appeal to their age group.

“Maybe if the Cancer Council brought out a hat and gave the style to billabong and said put your brand on it and put in association with the cancer council” (Female, Group 8)

“Maybe they could have a Cancer Council tag saying that it’s recommended by the Cancer Council” (Male, Group 3)

With this in mind, the products would thus have to be both functional and fashionable. These hypothetical products would have to protect them from the sun, but also be appealing and trendy.
However, with this, it was also acknowledged that the Cancer Council would have to be careful in this situation. They believe that if a product appeared not to represent the beliefs of the Cancer Council, then it would damage its reputation.

“If the Cancer Council brought out a rash vest that was really low cut, I don’t think that would be really good for them because their idea is to not get skin cancer” (Female, Group 4)

7.6 FAKE TANS

Overall, the trial and use rate of fake tans appears relatively low in the participant groups. In most cases, the actual use of fake tan was perceived negatively by both males and females. The majority of participants believe that a natural tan looks better than a fake one.

“Natural looks better as well” (Female, Group 6)

“Natural tan looks better” (Female, Group 10)

7.6.1 Product Problems

The adoption of these risk reduction products appears to be hindered by several perceived product downfalls. The main issue with fake tans is that the participants believe that they make people appear orange rather than tanned.

“It makes you look streaky and orange” (Female, Group 8)

“Because it like runs into like creases and you’re just like you got like bright orange” (Female, Group 4)

“Sometimes the fake tan looks orange, too dark” (Female, Group 6)

Another problem is that the participants believe that when the product is applied, it results in a streaky and blotchy appearance on their skin.
The good quality tans are generally professionally applied (i.e. spray tans) and only generally last for about a week. The financial and time cost of this upkeep is considered too great a burden. The participants would instead rather obtain a natural tan which takes less effort to acquire and maintain (regardless of the health risks).

7.6.2 The Conspicuous Tan

The use of fake tans is regarded as being relatively conspicuous by the participants. Obviously, the product downfalls previously mentioned hold a level of social risk associated with them due to their effects on physical appearance. In addition to the actual product downfalls that are associated with fake tanning, there are also a few perceived social risks that are associated with the use of fake tans and the conspicuous nature of its use.

Adolescents prefer the tan to look natural, and for it not to be obvious that they are wearing a fake tan. Having an obvious fake tan is associated with being ‘vain’ and ‘trying too hard’ and being obsessed with your own appearance, while having a natural tan is associated with being outdoors and healthy.

The transition phase between having a tan and not having a tan is also an issue when using fake tans products. The idea of being pale one day, and then tanned the next is believed to make it overtly obvious they are using fake tan products.
In understanding this, it must thus be acknowledged exactly what the target audience believes are the main indicators that a tan is fake. These being that often the wearer appears too tanned, or the tan may have a slight orange tinge to it.

<table>
<thead>
<tr>
<th>“Too tanned” (Female, Group 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Fake, orange” (Female, Group 10)</td>
</tr>
<tr>
<td>“Weird colour to what it’s meant to be” (Female, Group 12)</td>
</tr>
</tbody>
</table>

### 7.6.3 Gender and Fake Tans

For females, fake tans are considered more than acceptable, if they are quality tans that look natural. In most cases, fake tans will be used when they have a special occasion that they would like to look tanned for.

| “Maybe just one time, when you are going out” (Female, Group 8) |
| “For a special occasion” (Female, Group 14) |

girls with fairer skin are more hesitant about using fake tans because they believe that the change is too drastic, and they feel it looks ‘weird’. It is largely socially unacceptable to be wearing a ‘bad’ fake tan.

| “It also depends, if you are a fair skin, then you look pretty stupid, it goes orange” (Female, Group 4) |
| “I look really weird with a fake tan, with my fair skin” (Female, Group 10) |

It is also clear from these groups that it is not considered acceptable for males to use fake tans. Both males and females think it would be odd for males to wear fake tan. The male participants, once again, are afraid of their peer’s reactions to the product usage in regards to being socially ostracised.

| “I wouldn’t be scared of being embarrassed; I’d be scared of being beaten up” (Male, Group 1) |
| “I would just crack up laughing at them” (Male, Group 5) |
| “Why would you pay money to look silly?” (Male, Group 11) |
| “No guy is stupid enough in this school to get a fake tan” (Female, Group 14) |

This is due to the fact that the male participants do not like to be seen caring about how they
appear, because this would not be masculine. Additionally, females also enforce this characteristic by perceiving males who would use fake tans as being more feminine (or metrosexuals).

“If a girl got it it would be ok” (Male, Group 5)
“Because they’re girls” (Male, Group 13)
“Because men aren’t supposed to care what they look like” (Female, Group 12)

7.6.4 The Potential of Fake Tan

In large part, the participants acknowledge that using fake tans is a far healthier option than obtaining a natural tan from the sun.

“If it looked good” (Female, Group 2)
“As long as it looks natural” (Female, Group 4)

While it is clear that for the male participants, wearing fake tan in place of natural tanning is not a practice they are ready to adopt; the female participants are not completely closed off to the idea of using the products more readily in place of tanning. In fact, the female participants believe that if they were given access to an affordable and natural looking fake tan, then they would most likely use it.

“For a girl got it it would be ok” (Male, Group 5)
“Because they’re girls” (Male, Group 13)

7.6.4.1 Product Preferences

For those that do currently use fake tan, there is a strong preference for spray tans, as they appear more natural and are less blotchy, and for gradual tan creams, where the tan appears slowly over time to minimise the obvious transition period, and because it gives them more control over the depth and appearance of the tan.

“It’s like a gradual tan but it doesn’t look orange, when you moisturise your legs, it’s in the moisturiser it’s like a gradual change” (Female, Group 2)
“It builds up like natural” (Female, Group 6)
7.6.5 Celebrities and Fake Tans

It is largely acknowledged by the participants that majority of celebrities do use fake tans rather than natural tans from the sun. This practice by celebrities is highly acceptable for both males and females and, in comparison to the participants themselves, they believe that this acceptability stems from the celebrities’ ability to obtain and afford high quality tanning products on a regular basis, that they have to keep up their appearances at far greater levels than average people, and, lastly, they have the ability to ‘hide out’ in the event of a fake tan mishap, unlike themselves who would be forced to go to school looking orange.

“'They've got the money so they probably get a spray tan every day' (Female, Group 2)

“They don't have to go to the beach to get a tan, and they have the money to have like the perfect fake tan”
(Female, Group 8)

“If they um, stuff up, like they can basically hide under a rock for a few days until it dies down and stuff”
(Female, Group 6)

7.7. SUMMARY

A number of interesting and important factors relevant to the use of augmented sun protection products were established through the current focus group research. The participants largely associate the augmented product (sun protection products) with the beach and pool (aquatic environments). While sunscreen is clearly the most favoured form of sun protection, majority expressed a desire for improvements in these product areas. The participants feel that sunscreen can be oily, sticky, smelly and hard to apply. In general, adolescents find augmented sun protection products to be annoying to wear/apply and impractical.

The participants do not attribute lack of sun protection product use directly to attempting to obtain a tan; rather, it is associated with inadequate application, forgetfulness and laziness. However there is a social element that deems wearing sun protection products as ‘uncool’ or socially unacceptable. The conflict of protecting your image or your skin becomes very clear in these themes, with participants acknowledging that they should be using more adequate sun protection products; however, the socially undesirable nature of these products is a major barrier to their use.

Particular importance is placed on protecting ones face, and overall the participants expressed a desire for sun protection products to become ‘invisible’ so that they could both
protect themselves, and avoid the negative social consequences of appearing to be a ‘loser’ who is largely governed by their parents, or a tourist who is not aware of local fashions. An adolescent’s peers can have both a positive or negative impact on the use of these augmented sun protection products. Males in particular can be openly critical of each other in regards to ‘uncool’ sun protection products.

In large part, adolescents desire their own product range which can separate them from both adults and children, and that are designed specifically for their own needs, wants and lifestyles. The role of brands is very important to this cohort, and in some cases, product choice is based entirely on the brand that produces them. The Cancer Council brand, while trusted and well respected, was deemed ‘uncool’ and not appropriate for adolescents.

Lastly, in regards to fake tanning products, female participants are clearly more favourable to the use of such products. While levels of use are not currently high, there is definite consideration of potential product trial.
8. SEGMENTATION

This chapter, the third in the series of focus group results, reviews the issues of segmentation, specifically brand loyalty segmentation. Results of the application of brand loyalty segmentation to the focus group participants are then outlined. This includes details and descriptions of the six segments developed in terms of their brand loyalty status, attitudes and behaviours. The development of these groups indicates that adolescent sun protection behaviours are not homogenous.

8.2 BRAND LOYALTY SEGMENTATION

As previously stated in chapter three, segmentation is an invaluable tool of Social Marketing. Segmentation works on the strategy of ‘divide and conquer’ and allows us to generate groups within a cohort that display similar characteristics – such as Brand Loyalty. By segmenting a target group marketers to divide populations into groups based on homogenous characteristics, and can thus tailor marketing efforts towards specific segments rather than trying to reach the entire population at once (Bloom and Novelli, 1981; Cahill, 1997; Burgess et al., 1985). Brand loyalty was introduced as a method of segmentation based on current product usage, and in the case of adolescent sun protection, the brand of interest is the act of protecting oneself from the sun, while the competing brand is that of not protecting oneself and/or the acts of intentional exposure and tanning. It must also be reiterated that not all of the following brand loyalty segments will be viable segments for targeting, and that a segment must be measurable, accessible, sustainable and actionable to be considered worth targeting (Kotler et al., 2003). Throughout the coding process, a number of brand loyalty segments were identified in regards to adolescent sun protections behaviours.

The following table outlines the key behaviour segments identified in the focus groups and their classification into the five categories of brand loyalty segmentation; Brand Loyals, Favourable Brand Switchers, Other-Brand Switchers, Other-Brand Loyals, and New Category Users (Rossiter & Percy, 1997; Rossiter & Bellman, 2005). These loyalty segments have been renamed to characterise the dominant behaviours of each segment and are thus referred to as the Vigilant Defenders, the Forgetful Attempters, the Risk Reducers, the Consciously Lazy, the Tan Seekers, and The Unaffected. The attitude towards sun protection and the current behaviour are also provided in Table 8.1.
### Table 8.1: Brand Loyalty Segmentation focus group characteristics

<table>
<thead>
<tr>
<th>GROUP</th>
<th>BL SEGMENT</th>
<th>ATTITUDE</th>
<th>BEHAVIOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Vigilant Defender</td>
<td>Brand loyal</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>The Forgetful Attempter</td>
<td>Favourable-brand switcher</td>
<td>Positive</td>
<td>Generally positive</td>
</tr>
<tr>
<td>The Risk Reducer</td>
<td>Favourable-brand switcher, Other-brand switcher</td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td>The Consciously Lazy</td>
<td>Other-brand switcher</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>The Tan Seeker</td>
<td>Other brand loyal</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>The Unaffected</td>
<td>New category user</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

It must also be noted that the focus group results indicate that these six brand loyalty segments are not necessarily mutually exclusive, but instead, represent the primary behaviours of group members. This means that an individual may display secondary behaviour characteristics that may not be directly classified into their primary segment, and that in some cases, the brand loyalty segment an individual belongs to may alter depending on situation and location.

#### 8.2.1 The Vigilant Defenders

The Vigilant Defenders are a group of *Brand Loyal* who strive to protect themselves as much as they can. They report wearing multiple forms of sun protection when they are out in the sun (as opposed to just when they are at the beach/pool). They are also attentive to sunscreen reapplication and will often put protection before appearance by wearing highly visible protective products such as hats and rash shirts. In most cases, these vigilant defenders are those with paler skin that burns easily who have had negative experiences with sun burn. In addition, this segment includes those who have been personally effected by skin cancer (such as through the diagnosis of parents or grandparents), which in turn increases their own vigilance.

“I wear everything, sunscreen, hat, towel, rash shirt, invisible zinc for my face – it protects more but you can’t see that you’ve got it on – zinc and sunnies” (Female, Group 4)

#### 8.2.2 The Forgetful Attempters

While most of the literature previously examined had in large part attributed the lack of sun protection use by adolescents to having a desire for a tan, this was not wholly evident in the groups conducted for this research. In fact, a dominant theme that emerged quickly was that
most sunburn and overexposure was in fact a result of laziness and forgetfulness on the part of the adolescent.

It was evident from this that there were a large number of participants in the *Favourable Brand Switchers* category. This group, coined the ‘Forgetful Attempters’, are conscious of the need to protect themselves from the sun, and in most cases make an attempt to do so. However, overexposure does inadvertently occur due to forgetfulness—such as forgetting to take protection when leaving the house, or forgetting to reapply sunscreen before it’s too late.

|“Sometimes you forget and you’re halfway through the day at the beach and you think crap, but it’s too late to do anything” (Male, Group 3) |
|“Because you spend so much time in the sun and you forget” (Female, Group 11) |
|“If I get told I’ll do it, but otherwise I’ll forget” (Female, Group 14).|

Many of these group members believe that if they were reminded to apply and/or reapply sunscreen etc. then they would actually increase their usage.

|“Yes, you have to be reminded, because when you get to the beach with your friends you just go into the water straight away” (Male, Group 1) |

### 8.2.3 The Risk Reducers

It appears that risk reduction/harm minimisation is already being used by a number of the participants. For this group it is common practice that when they want to get a tan or to sunbake, they first apply sunscreen to minimise the burn factor of overexposure, despite intending on exposing their skin nonetheless. In many cases, the adolescents believe that this is a more responsible way to tan and while they will wear sun protection, they will also actively attempt to obtain a tan.

|“And if you are going to sunbake, you are better off using a low SPF than nothing at all” (Female, Group 2) |
|“If you have a lower number (SPF) you get a better suntan” (Female, Group 6) |

A prime example of this idea came from the design technique where participants were asked to come up with an idea on ways to get people their own age to wear more protection. The design of two female participants was called “The Key to Tanning”, and was a low SPF sunscreen (SPF 15+) that actually promoted safe tanning in an effort to get intentional tanners to wear at least some form of protection. A product such as this is specifically designed for individuals in this Risk Reducer segment.
Like the forgetful attempters, the Risk Reducers are also *Favourable Brand Switchers*, as they are conscious of the negative side effects of sun burn and thus wear sun protection, but they could also be considered *Other Brand Switchers*, as they will also purposely attempt to obtain a tan. Thus this group consciously switches between sun protection and the competing behaviour of tanning.

### 8.2.4 The Consciously Lazy

This group see the time and effort costs of applying/wearing sun protection as outweighing the benefits provided by the sun protection. Therefore, despite having the knowledge of the need of sun protection, and access to it, the Consciously Lazy choose not to use it because they simply “couldn’t be bothered”. This group is thus categorised as *Other-Brand Switchers*, as the costs of protection are being outweighed by the perceived benefits.

> “Because it's too much of a hassle sometimes” (Female, Group 6)
> 
> “Too much effort” (Male, Group 5)
> 
> “It takes a while … I mean it takes ten minutes to rub sunscreen say and people can’t be bothered to wait that long before they go in the water or the beach they can just can’t be bothered and so they just want to get on with life and not have to stop and think about it” (Male, Group 7)

However, it is important to note that this group is not necessarily intentionally exposing themselves in order to obtain a tan, and in many cases they are using sun protection. They are just merely too lazy and complacent to use effective levels of sun protection on a regular basis.

### 8.2.5 The Tan Seekers

This group of *Other Brand Loyals* is actively seeking a tan and purposely do not wear sun protection in order to do so. This is a conscious and deliberate behaviour and Tan Seekers display both intentional (sun baking) and unintentional (participating in outdoor activities while purposely not wearing sun protection) tanning practices, and do not really see the need or purpose for sun protection as it is a barrier to obtaining a tan.

> “I just want to get a tan” (Female, Group 6)
> 
> “But, if I wore a rash shirt, there’d be no way that I’d get brown” (Female, Group 6)
> 
> “Yeah you try and get a tan or you just you don't care you just want to go out, go out for surf you can't be bothered” (Male, Group 11)
8.2.6 The Unaffected

This group consists of those participants who have never had major concerns with sun burn or skin cancer, generally because they have darker skin and have less experience with sun burn. Because this group has yet to perceive any real need or concern for the product category (sun protection) they are thus considered to be New Category Users, for while they are at present non users of sun protection, they are also non tanners, but they do possibly have the potential to be either in the future.

“If you have dark skin, you don't really need 30+” (Female, Group 6)

8.3 SUMMARY

Segmentation, specifically brand loyalty segmentation was previously introduced in chapter three; however, in this instance the foundations of brand loyalty are actually applied to the adolescent focus groups. A total of six segments were developed based on sun protection usage. These being the Vigilant Defenders, the Forgetful Attempters, the Risk Reducers, the Consciously Lazy, the Tan Seekers, and The Unaffected. Each of these segments displays unique characteristics, and thus demonstrates that adolescent sun protection behaviours are not identical, and therefore should not be treated as so in adolescent interventions.
9. SURVEY

This chapter outlines and justifies the methods used in the second stage of the research process. This stage of research was designed to quantify the brand loyalty segments developed in the focus groups by conducting surveys with the target population to identify the size, scope and additional factors relevant to the population sub groups. Firstly, the chapter introduces surveys in terms of their use and history, as well as their use with adolescents, with particular attention paid to previous sun protection research. The important issues of survey design and justification are established through a review of the literature on the transtheoretical model methodologies. The chapter also serves to outline other design issues. Literature on survey mode is also discussed to determine the most effective mode between web and paper based surveys.

General methodology factors are then discussed to outline the actual costs and logistics associated with the survey research. This of course includes details on the sample population and sample frame, the sample size to be used in the research, the recruitment strategy, details of the costs associated with the research in terms of money and time, details of the compensation provided to both participants and schools, and listing of all ethical considerations. Lastly, the chapter provides an explanation of how the survey data is to be analysed.

9.1 DATA COLLECTION TOOL: SURVEYS

For many years surveys have been used to collate factual information, and are proven to generate rich findings in a wide range of issues (Lazarsfeld, 1968). The use of survey techniques is based on a need or desire to “collect information (usually by questionnaire) from a sample of respondents from a well-defined population” with the intention of measuring characteristic(s) of a population (Czaja & Blair, 2005. p 3-4). In doing so, generally a survey instrument (the questionnaire) is used which contains a series of questions that selected participants are to answer (Czaja & Blair, 2005. p 3).

According to Lazarsfeld (1968), the use of survey techniques prior to the 1930’s was largely associated with the collection of information with the objective of improving social conditions. The concepts of sampling techniques and the measurement of attitudes were then introduced.
which swayed the association towards studies of “public opinion, employee morale, and consumer preference” (p vii). The nature of surveys later evolved again to encompass a broader association (Lazarsfeld, 1968) and their use became far more precise as procedures were “codified, and its techniques sharpened” (Rosenberg, 1968, p xi) and have been used in countless fields such as health, politics, community engagement, law and order, economics, sociology, psychology and in the commercial marketplace (Czaja & Blair, 2005). In recent years, the introduction of new technologies have also had a dramatic impact on how surveys are conducted, with such things as the internet and mobile phone technologies changing the nature of survey techniques (Czaja & Blair, 2005).

9.1.1 Surveys and Adolescents

When conducting a survey, the researchers must believe that majority of the target participants for the survey will have the knowledge, skill and ability to provide the desired information (Czaja & Blair, 2005). In regards to sun protection, Lower and Associates (1998a) concluded that the self reported sun protection practices of adolescents are valid and can be used to assess adolescent behaviours. Survey techniques have been used in a range of previous adolescent sun protection research. For example, Baade, Balanda and Lowe (1996) conducted a telephone survey with 4016 Queensland adolescents regarding adolescent sun protection attitudes and behaviours; Robinson and Associates (1997) conducted a telephone survey in the United States with 658 adolescents regarding current sun protection behaviours and knowledge; and Lovato and Associates (1998) used telephone surveys with 574 Canadian adolescents to measure sun exposure and protective behaviours. Utilising paper-based surveys, Broadstock, Borland and Hill (1996) surveyed 4721 Victorian adolescents to measure sun protection knowledge, beliefs, behaviours, attitudes and usual self-reported behaviours, and Lower and Associates (1998b) surveyed 3642 Australian adolescents assessing knowledge, attitude and behaviours regarding sun protection.

9.2 SURVEY DESIGN AND TESTING

9.2.1 Algorithm Factors & the Transtheoretical Model

Chapter three provided an overview of how Brand Loyalty segmentation and the Transtheoretical Model (more commonly known as the stages of change model) divide populations of interest into set categories based on behaviours and attitudes. The stages of change model divides individuals into one of six stages dependent on their current
behaviours and behaviour intentions. Generally, this model is used to classify both negative and positive behaviours, and an individual’s current use of that behaviour, as well as any intention to rectify or change that behaviour. The nature of groupings within the stages of change model allows researchers to develop behaviour groups that can then feed brand loyalty segmentation by helping us understand the intentions towards a behaviour and thus towards the 'brand' in question. According to Prochaska, Redding and Evars (2002) the six stages are defined as:

**Precontemplation**- no intention to take action in the foreseeable future.

**Contemplation**- intention to change their behaviour in the foreseeable future.

**Preparation**- intention to take action in the immediate future.

**Action**- have made specific evident changes in their lifestyles.

**Maintenance**- are striving to prevent a relapse.

**Termination**- individual is in no threat of relapse.

The Transtheoretical model has been widely used to both analyse current situations and assist in designing interventions in areas such as smoking (Donovan et al., 1998; Plummer et al., 2001; Beiner & Abrams, 1991; Pingree et al., 2004; Anderson, 2007; DiClemente & Prochaska, 1982; Prochaska & DiClemente, 1983), alcohol consumption (Donovan et al., 1998), food and healthy eating habits (Takeuchi et al., 2006; Oliveira, et al., 2005; Lechner, et al., 1998) and physical exercise (Reed at al., 1997; Lee, et al., 2001; Dannecker, et al., 2003; 2002; Marcus, et al., 1992; Nigg & Courneya, 1998). According to Prochaska, Redding and Evers (2002, p 105) “If interventions are to match the needs of entire populations, there is a need to know the stages distribution for specific high-risk behaviours”. Thus, like brand loyalty segmentation and the current research, these applications often required the researchers to investigate and assess the size and scope of each of the six aforementioned stages of change in order to fully evaluate and understand the situation. This is frequently done via survey(s) with the target audiences, which aim to divide the participants into one of the six behaviour change categories.

Due to the overall similarities found between dividing a population by brand loyalty and dividing by the stages of change model, the academic literature focusing on methodological aspects of stages model segmentation can be utilised as a foundation when employing brand loyalty segmentation and thus help guide the current research.
9.2.1.1 Survey Algorithm Formats

An algorithm is generally seen as a procedure, set of instructions or calculation for solving a particular problem. These ‘instructions’ are followed to assist in coming to a diagnosis (encyclopedia.com, 2010). In this case, an algorithm is required to solve the problem of how to classify an individual into one group within a set of different behaviour groups. Thus we see that the algorithm is extremely important, as it is this procedure that can truly break results if developed incorrectly.

When analysing literature on the use of the stages model, it becomes clear that there are numerous ways to format a survey (the algorithm). These algorithms can however be divided into two basic categories; those with multiple questions, and those with single items. According to Reed and Associates (1997) the answer style on the other hand can be in any number of response formats, such as likert scale, true/false, and 5-choice scale, to name a few.

Reed and Associates (1997) tested the validity of eight different algorithms which included different types and styles of definitions and questioning. Overall, it was concluded that either a five-choice or a true/false response format was the most effective in assessing a respondent’s stage. The most common survey algorithm (and with proven validity and/or reliability in each case) seen in the stages literature is that of the self-reported four (Plummer et al., 2001; Oliveira, et al., 2005; Marcus et al., 1992) or five-choice format (Donovan et al., 1998; Reed et al., 1997; Dannecker, et al., 2003; Schumann, et al., 2002; Nigg & Courneya, 1998; Marcus et al., 1992). This particular algorithm has also been used by a number of researchers working with the adolescent cohort (Lee et al., 2001; Plummer, et al., 2001; Schumann et al., 2002; Nigg & Courneya, 1998). This algorithm format provides five (or four) definitions, each of which identifies with one of the stages categories, and the participants must select the one statement which they believe best describes their own behaviour. It must be noted that despite the existence of six stages of change categories, most published research has not measured all six stages, but focused on four or five stages that are essential to their particular research; often this includes the exclusion of the Termination stage, as members of this group are not in need of intervention.

This current survey thus employs the design principles of the self reported five-choice question format. However, as the brand loyalty segments developed in the focus groups include six different segments, the current research will of course be a self reported six-
choice algorithm. For reasons of simplicity, this algorithm will hence be referred to as the ‘select-a-statement’ algorithm. Additionally, as the focus group data indicated that the core behaviours of each of the specified brand loyalty categories are sometimes interchangeable between segments (e.g. a Vigilant Defender may forget to take sunscreen with them, or a Forgetful Attempeter might not be bothered wearing sun protection) they will be tested by the select-a-statement algorithm three times for each question in order to fully validate a respondent’s inclusion in a specific segment. In doing this, we are able to establish consistent behaviours and thus, the most consistent brand loyalty segmentation. Furthermore, by testing a participant’s inclusion in a segment multiple times it can more accurately capture their segmentation group membership, as a major limitation of the transtheoretical algorithm is that it forces respondents into a segment by only allowing them a limited number of options and a singular opportunity to respond.

The decision rule for this algorithm is thus that a participant is included in a segment when they indicate a particular behaviour in at least two out of three of the select-a-statement algorithms. If an individual does not indicate a consistent response then it is clear that they are not a member of a segment, and in large levels this may indicate that the groups themselves may not be valid.

9.2.2 Additional Survey Design Factors

9.2.2.1 Addressing Situational Constructs

It is beneficial for a survey that addresses behaviours to understand and take into account attitudinal and situational factors. When conducting research with adolescents, critical constructs such as peer acceptance and persuasion should also be measured and/or included (Plummer et al., 2001). Pingree and Associates (2004) for example, in their study to help adolescents quit smoking conducted with 280 current and former adolescent smokers, used their survey to also address whether the adolescents’ behaviour was dependant on other situational factors by asking participants to indicate whether they smoked in various places and situations, and with whom they smoked.

As the current focus group research has already indicated, adolescents are not consistent in their sun protection brand loyalty segments. In fact, their behaviour is highly situational for depending on where they are and who they are with, their behaviours may be altered and thus they may shift into an entirely different brand loyalty segment. It has been established through the focus group themes that adolescents often exhibit different behaviours regarding
sun protection when they are under parental supervision, in comparison to when they are with their friends or peers. In fact, a negative impact on protection behaviours has been displayed when with peers or away from the family. Additionally, the physical location of the adolescents was also shown to be a critical determinant of sun protection behaviour. Adolescents were more likely to associate wearing sun protection with being around water, such as the beach or pool, rather than with any or all outdoor situations. Therefore, this survey will test the same behaviours under a number of different circumstances in order to establish an indicator of how and when these behaviours may change. The four situational variables to be included in the current survey are ‘with family or parents’, ‘with friends’, ‘at the beach, pool or lake (aquatic)’ and ‘outdoors, but not at the beach, pool or lake’. Participants will be asked to complete a select-a-statement algorithm for each of the aforementioned situations as follows:

Table 9.1: Situations for Adolescent survey

<table>
<thead>
<tr>
<th>AQUATIC</th>
<th>FRIENDS</th>
<th>PARENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the beach, pool or lake</td>
<td>At the beach, pool or lake with your friends</td>
<td>At the beach, pool or lake with your parents/family</td>
</tr>
<tr>
<td>with your friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>When outdoors (and not at the beach) with your friends</td>
<td>When outdoors (and not at the beach) with your parents/family</td>
</tr>
</tbody>
</table>

9.2.2.1.1 Potential Limitations

It must be acknowledged that the repeated measure approach of asking respondents the same question across slightly different contexts may introduce some potential bias in response. However, for the purposes of this research this is not believed to have a substantial impact on the overall results.
9.2.2.2 Developing Questions Using Core Behaviour Statements

As already stated the current survey will be based on the five-choice (select-a-statement) algorithm due to its popularity and proven validity. There are however, no set guidelines as to what the questions will state, and how they will state it, particularly as this research is using newly developed brand loyalty categories and a relatively untouched topic area when it comes to segmentation and adolescents.

It must also be noted that a major limitation of the stages model in guiding the design of specific questions for the current research, is that stages research is largely based on a defined time frames and thus has limited capacity to understand the general nature of behaviours. The stages model is generally concerned with an individual’s behaviour specifically in the past or pending months. Often, the Precontemplation and Contemplation stages are measured in regards to their behaviour intention in the next six months (Prochaska, Redding and Evers, 2002); the Preparation stage is usually measured in regards to the next month, and the Action stage is generally measured using the previous six months (Prochaska, Redding and Evers, 2002).

However, by addressing the core behaviours of each segment through prior research (either literature or in the field), you are able to establish the key factors that define each group, and can form a basis of segmentation. For example, the survey used in the smoking stage of change and adolescent research conducted by Pingree and Associates (2004) was developed using information collected in previous focus groups, whereby behaviours suggested and acknowledged in the focus groups were then quantified, and applied. Similarly, DiClemente and Prochaska (1982) generated items for their smoking change process questionnaire from statements supplied by subjects in a pilot study of individuals who had recently quit smoking.

As youth focus groups can be engaged to assist researchers in designing questions for data collection questionnaires (Peterson-Sweeney, 2005), the focus group data was thus revisited, and the core behaviours of each segment exhibited in these transcripts (which led to the original development of the current brand loyalty segments) were described in statement format in order to best describe the behaviours of each segment and better assist in question development. For example; the following quote was taken from the focus group
transcripts “Well I usually forget to put more on, like when you are at the beach, time just goes, you don’t really know like what the hour is like when to put it on” and was used to help develop the Forgetful Attempeter behaviour statement “I often forget to apply or reapply sunscreen”.

9.2.2.3 Screening Questions

Along with the more complex algorithms, many research projects using behaviour segmentation include one or more opening behaviour and/or screening questions in order to better understand and classify the participants. In the transtheoretical literature, this is often done to establish the current behaviours in regards to the topic at hand, or perhaps even establish the degree of relevance the topic holds for the individual, or even merely to establish a basic demographic background to the survey sample. For example, when conducting research with adolescents Plummer and Associates (2001) assessed their participant’s current smoking status prior to categorising into stages of change, by firstly asking them ‘have you ever smoked’ and asking them to select from one of three answer options, thus enabling them to divide the participants into non-smokers, smokers and former smokers (Plummer et al., 2001). DiClemente and Prochaska (1982) used additional questioning with their research on former smokers to establish the age they began smoking, number of cigarettes smoked per day, number of years smoking, number of prior attempts to quit, and longest previous quit periods.

Takeuchi and Associates (2006) conducted research on food hygiene behaviour when preparing meat and required participants to compete screening questions to identify vegetarians and people who did not prepare meat at home, as well as thermometer ownership. Oliveira and Associates (2005) used additional questions to establish the duration of the participants’ behaviours regarding fruit and vegetable consumption.

Demographic questioning was used by Oliveira and Associates (2005) as it was by DiClemente and Prochaska (1982). Additionally, Lee and Associates (2001) and Nigg and Courneya (1998), who both completed their research with adolescent exercise behaviours, required their participants to complete questions assessing gender, age, school and grade at school to determine a demographic profile of the sample population.
The current research not only obtains basic demographic details such as age, gender and grade at school, but also includes a number of behaviour questions and a skin type indicator. The skin type indicator questions are based around skin complexion (very fair, fair, medium, olive, dark, very dark, black, can’t say/don’t’ know) and skin burn type (just burn and not tan afterwards, burn first then tan, not burn at all, just tan, nothing would happen, can’t say/don’t know). This is used to establish if skin type plays a role in the brand loyalty segments (e.g. are all fair people vigilant defenders?).

The behaviour questions focused on establishing how much time the participants spend outdoors throughout the year. This is divided into two seasons (summer and not summer) and the respondents asked to indicate how much time they spend outdoors in each of these. This enables the research to establish if the participants spend large amounts of time outdoors (and thus the relevance of sun protection) and also help to establish the need for sun protection during the colder months in comparison to the warmer ones.

9.2.2.4 Simple or Complex Question Structure

The length and descriptive depth of the question itself can impact the stages which one is categorised into. Takeuchi and Associates (2006) report that while simpler questions are easier to design and administer, they can result in classification errors. Algorithms using longer, more precise definitions are proven to be more effective in accurately categorising participants into stages (Takeuchi et al., 2006; Reed et al., 1997). It must be noted that Reed and Associates (1997) conducted their research on the topic of exercise, and that in this area using simpler definitions had a negative impact on the accuracy of stages classification. However, taking into account the complexities of this topic area, such as overcoming the individual’s definitions as to what exercise is, how often, duration, vigorousness and types of exercises (Reed et al., 1997), it is not surprising that this topic area would greatly benefit from longer and more precise definitions.

In the case of this current research, as the survey is interested in the general behaviours of wearing sun protection especially in the warmer months, the topic does not have as many subjective and complex factors to be taken into account, and thus the questions provide appropriate levels of information, without seeming too complex for the adolescent audience. A general definition of ‘sun protection’ is also provided on the survey (prior to the questions) to establish consistency in responses. The addition of situational factors in this survey also
increases the level of specified detail within the survey questions, thus keeping in line with the preference of a detailed question structure without making the response options overly complex.

When designing the structure of specific questions it is important to consider the overall capabilities of the desired population (ability to accurately comprehend and respond) so that subjects are actually able to fully self assess (Reed et al., 1997; Collins, 2003; Fowler, 1995). Thus, when constructing questions for a survey, it is imperative to understand that the language and sentence structure are critical to question interpretation by respondents. In regards to language, Foddy (1993) has outlined a key issue that must be addressed when designing survey questions; that is the difficulty of the individual words used hinders both interpretation and response and increases the levels of threat felt by the respondent, which leads to increased levels of 'I don’t know' or blank responses. Foddy (1993) and Fowler (1995) therefore recommend that terms and language used should be clear and simple, and if technical or difficult words must be included, then these should be defined for the respondent. This is of particular importance in situations such as the current research, where the intended respondents are young and yet to complete secondary education.

9.2.2.5 Encouraging Willingness to Participate

It is of course naive to assume that all respondents will be willing to wholly cooperate with a researcher and provide full and honest answers to each question. However the likelihood of cooperation and truthful responses is increased when a level of trust is developed between researcher and respondent. The respondent must be able to characterise the request for information to be legitimate, and the researcher to be trustworthy. A survey should therefore include information to explain the researcher’s objectives and the intended use of the information collected. By doing this, the researcher can condition a respondent’s willingness to cooperate and “impart any information that they may consciously hold” (Foddy, 1993, p 73). Additionally, by explaining the objectives and procedure to the respondents, they may be more inclined to accept their role in the general process (Foddy, 1993).

9.2.3 Survey Design Testing

It is greatly beneficial to test a survey prior to completing any large scale research. This works to both create the most effective survey possible, and also to reduce any costly mistakes that may occur when survey testing is not conducted (Takeuchi et al., 2006). Not
testing can result in a number of measurement errors (some already outlined previously) such as survey questions being misunderstood, questions that cannot be answered accurately (or at all), and comprehension problems resulting from the use of inappropriate vocabulary and complex sentence structure (Collins, 2003). Thus it is a necessity to test for inaccuracies, misunderstandings, inconsistent interpretations, etc. (Collins, 2003). Takeuchi and Associates (2006) had several stages of survey testing in their Stages of Change research with food hygiene and safety. The survey was first tested by food safety experts to ensure that all information was valid and correct, and second by university graduate students and staff to ensure that all scales and measures were accurate. Based on feedback, a second draft of the survey was then created. The next stage of testing was conducted with the desired target audience in the form of face to face interviews where participants provided feedback to ensure that they interpreted questions, pictures and wording as intended by the researchers.

This form of survey testing is often referred to as the ‘think aloud’ technique (Neilson, Clemmensen & Yssing, 2002; Offredy & Meerabeau, 2005) whereby the intended user becomes a participant in testing the usability of the survey design. By thinking aloud whilst/after reading through the survey and attempting to answer the questions they are able to provide researchers with valuable insight into the comprehension and understanding of the survey by the target audience.

9.2.3.1 Current Survey Design Testing

Similar to the outlined process used by Takeuchi and Associates (2006) this current research included a number of stages of survey testing. Firstly, a draft was constructed using the select-a-statement algorithm and all the aforementioned design factors. This draft was then tested with four members of the target audience (three females and one male) who used the think-aloud technique to examine the survey’s usability, comprehension and relevance for an adolescent audience. As a result, there were numerous structural and wording changes made to the survey questions that were developed from the target audience’s recommendations. This second survey draft was again distributed to the same four members of the target audience, and again, the think-aloud technique was used to raise any concerns with the survey wording and questions. Again, several changes were identified and rectified, and once it was established that the survey was suitable and
comprehensible for the desired target audience, the next stage of testing was able to proceed.

The second stage of survey testing consisted of a group think-aloud session which involved a number of staff and students from the University of Wollongong’s Centre for Health Initiatives. The group members were all provided with copies of the survey and asked for any comments on structure, formatting etc. This second stage of testing was intended to ensure that the survey would be a feasible and functional data collection tool, and was not designed to impact on or address wording changes, but rather measurement scales, formats and consistencies.

**9.3 SURVEY MODE: WEB Vs PAPER**

**9.3.1 Cost and Distribution**

In a direct comparison between paper based surveys (PBS) and web based surveys (WBS), those conducted on the computer are quickly identified as a far more cost effective survey collection method (Carini, et al., 2003; Denscombe, 2006; Sax, Gilmartin & Bryant, 2003). Not only are web-based surveys far less expensive than PBS, in terms of printing, labour and distribution costs, they are also quicker and easier to distribute, and they allow a researcher to cover wider and more remote geographic areas (Denscombe, 2006; Huang, 2006).

**9.3.2 Data Quality**

Web-based questionnaires are stated to have the ability to produce more complete surveys which have fewer missing responses (Denscombe, 2006; Boyer et al., 2002; Vereecken & Maes, 2006; Wu & Newfield, 2007) which of course increases the quality of data, as well as decreases the costs associated with having to re test. Largely because not only do computer assisted surveys eliminate the illegible answers (such as stray pen marks, illegible writing, or when respondents mark questions that should be inapplicable), but they also only allow the participant to select/enter the predetermined valid codes, hence also eliminating out-of-range responses (Wright, Aquilino & Supple, 1998). Additionally, it has been found that WBS elicit less incomplete surveys than paper based. In fact, in research conducted by Denscombe (2006) in England with 269 students aged 15 years, it was found that the completion rates for a WBS were slightly higher than it was for a PBS.
9.3.3 Deciding Factors: Population of Interest

It must not be assumed that the aforementioned logistical and complete response benefits are adequate justification for implementing a WBS over a PBS (Denscombe, 2006; Boyer et al., 2002), instead attention must be paid to the specific response rates, types and access issues of the intended target population (Denscombe, 2006). Web survey research results point to widely varying response rates and types across different populations, and thus response rates are highly dependent on the population being sampled (Sax, Gilmartin & Bryant, 2003). While there is still only limited (and inconsistent) research examining the full effects of mode type and responses towards WBS (Denscombe, 2006; Carini, et al., 2003) it is however clear that demographics, specifically age (Wright, Aquilino & Supple, 1998), can and do have a major impact on response rates and types. In fact, Sax and Associates (2003) even stated that “response rates are probably more dependent on the population sampled than any other factor” (p 411).

9.3.3.1 Response Rates: Computer Literacy and Spam Emails

Interestingly, while some demographics, such as university students, currently show lower response rates to web based surveys than paper based (Carini et al., 2003), in general, the more computer savvy a target population is believed to be, the more likely they can and will respond to a web based survey (Carini, et al., 2003; Huang, 2006). This is mainly due to the increased trust, comfort and familiarity with the technology that leads to greater acceptance of computerised surveying as it lowers concerns regarding invasions of privacy and confidentiality (Wright, Aquilino & Supple, 1998). It must be noted that the lack of web based responses from University students is not however an indicator of a computer illiterate status, rather that university students are simply less willing to commit to the voluntary act of completing a survey, and that often the survey invitation and information is sent solely to their student email accounts and little is known about the usage patterns of these accounts (Sax, Gilmartin & Bryant, 2003). Furthermore, people often respond negatively to receiving uninvited emails or ‘being spammed’ (Mehta & Sivadas, 1995; Porter & Whitcomb, 2003), additionally spam emails generally lack credibility (Porter & Whitcomb, 2003) and therefore should be avoided if possible.
9.3.3.1 Adolescent Response Rates

While the literature on adolescent response rates to web-based surveys is scarce, both Wu and Newfield (2007) and Hagler and Associates (2005) concluded that response numbers were not significantly different between computer and paper-based surveys.

9.3.3.2 Willingness to Divulge Information

Another very important factor for web-based surveys is a participant’s honesty in answers and willingness to divulge personal information. While most adult samples appear to show very little difference in response types between the data collection techniques (Wright, Aquilino & Supple, 1998), participants who have less computer experience may have levels of distrust regarding divulging personal information via computers due to fears of potential misuse. This results in less honest responses in WBS (Wright, Aquilino & Supple, 1998).

Not only are trust and familiarity issues of relevance, but also that the greater the perceived levels of privacy participants feel, the more likely they are to respond truthfully when questioned on topics of a sensitive nature (Brener, Billy & Grady, 2003). In large part, a critical factor to this mode effect is to what extent the format allows the participant to record their answers without directly or indirectly disclosing personal (and potentially embarrassing) information to those around them (e.g., interviewer, parents, teachers or fellow pupils) (Wright, Aquilino & Supple, 1998)

9.3.3.2.1 Adolescent Willingness to Divulge Information

Previous research with adolescents and college students suggests that web based surveys have the ability to obtain more honest responses from participants when questioning areas of a sensitive nature and/or health behaviours (Turner et al., 1998; Vereecken & Maes, 2006; Carini, et al., 2003; Tourangeau et al., 2003; Wright, Aquilino & Supple, 1998) and that the responses were subject to less social desirability bias (Couper, 2000). A research study conducted in the United States with males aged 15 to 19 years concluded that they were more likely to report risky behaviours when they were interviewed with computer assisted surveys in comparison with the more traditional PBS (Turner et al., 1998) and that this was significantly distinct in areas that were considered highly sensitive, illicit and/or highly stigmatised behaviours (e.g., homosexual experiences and illicit drug use). Research conducted on adolescent health assessments by Wu and Newfield (2007) concluded that computer assisted methods educe higher reports for risk items (e.g., carrying a knife,
beating up a person, selling and/or delivering drugs). Also, higher levels of reported homosexual sex, intravenous drug use and other stigmatised behaviours (Harrison, 1998) and higher alcohol and illicit drug use, as well as higher reporting for psychological distress (Wright, Aquilino and Supple, 1998) are reported among adolescents completing computer surveys compared to those completing paper based ones.

9.3.3.3 Access

WBS are said to be more convenient for participants as they are able to complete the questionnaire at his or her own discretion, and in some cases, perhaps even in the privacy of their own homes. However it must be understood that not everyone will have access to the internet (Sax, Gilmartin & Bryant, 2003). It must be established if the target participants would actually have physical access to the intended survey so as not to limit the capacity of your audience to respond.

9.3.3.3.1 Adolescent Access

Luckily for this current research, Australian adolescents are shown to have more than appropriate experience with and access to the internet. In fact, the Neilson Norman Group (2005) states that 83% of teens are online, and that the average teenager spends between 5 and 10 hours per week on the internet.

9.3.4 Providing Mode Options

While a web based survey is the preferred mode for dissemination for the current research due to time, cost and response benefits, research suggests that recruitment rates are increased when potential participants are given a choice between two types of survey response methods (Sax, Gilmartin & Bryant, 2003; Carni et al., 2003). While the cost and logistics of offering each individual student the choice of survey mode is unrealistic for the current research, it is however realistic to recruit the schools themselves with this option, especially considering the levels of slow and non response of schools displayed in the focus group recruitment. It was hoped that this provision of choice, combined with the incentives (to be noted later in this chapter) would encourage schools to participate in the research. Additionally, this mixed mode approach works in favour of the current research as again it must be noted that conducting web-based surveys is limited in that not all participants will have access to the internet (Sax, Gilmartin & Bryant, 2003). Despite the increase of computer facilities in schools, some high schools may still have limited or no computer
and/or internet facilities. Thus, each school is given the option to decide if they would rather administer a web or paper-based survey to best meet the needs and facilities of each individual school.

9.3.4.1 Minimising Mode Affect

Boyer and Associates (2002, p 370) concluded that the two modes are fundamentally exchangeable, and that “with careful design, the two data collection techniques provide very comparable data with few notable exceptions”. Thus, to ensure that any mode dissemination factors that may influence response are avoided, steps can be taken in the design stage to minimise any extreme response differences (Boyer et al., 2002). Following the format of Carini and Associates (2003) and Denscombe (2006), significant attention is paid to each instrument to ensure the structure and format of the WBS and PBS remained consistent. This included ensuring that all wording, placement and response options remain identical, and that page content size is able to fit per page on the computer screen, thus, minimising any effects that a change in formatting might have between the two modes. Furthermore, when the PBS is physically administered in the schools, all efforts should be made to ensure that students are seated apart from one another during survey completion to ensure the perceived levels of privacy, and thus increase the levels of honest responses (Brener, Billy & Grady, 2003).

9.4 METHODS

9.4.1 Sample Population

Like the focus groups, the sample population for this research was grade nine and 10 student from NSW High Schools. However, unlike the focus groups, this recruitment is not limited solely to coastal dwellers. The intention of this survey was to include a representative sample of NSW adolescents, which included coastal, inland, metropolitan and regional areas.
9.4.1.1 Sample Design

In order to address this criteria, the RRMA structure was employed to guide recruitment. The Rural, Remote and Metropolitan (RRMA) classification system allows geographic locations to be classified according to their population and remoteness. This system was developed in 1994 by the Department of Primary Industries and Energy and the then Department of Human Services and Health, and is now widely used by government departments (Australian Institute of Health and Welfare, 2005). Locations are divided into one of three zones (Metropolitan, Rural and Remote), and then furthermore into one of seven categories:

1. M1: capital cities
2. M2: other metropolitan centres (centre population > 100,000)
3. R1: large rural centres (centre population 250,000-99,999)
4. R2: small rural centres (centre population 10,000-24,999)
5. R3: other rural areas (centre population <10,000)
6. Rem1: remote centres (centre population >4,999)
7. Rem2: other remote areas (centre population < 5,000)

The focus for the current survey recruitment was on categories one through four, which enabled the inclusion of the desired area types. It was the intention to include both public and private schools within all four of the selected zones.

9.4.2 Pilot Study

To maintain the integrity of the methodology and the survey design, a pilot study was conducted prior to the major data collection commencement. Due to the large scale nature of the intended survey, a faulty survey could be a costly mistake. This pilot will allow the researchers to address any issues that arise with the respondents and the data collection methodology.

9.4.3 Sample Size

A minimum of 600 surveys will be included in the sample. This works on the assumption that segments sizes will be relatively equal, and thus, 100 participants from each group would be included. Of course, as the researcher is aware that these segments are not
distributed equally, a greater sample size than 600 is included to ensure greater numbers in the least common segments, and thus the ability to accurately analyse all segments.

9.4.4 Ethical and Privacy Issues

Approval was sought and received from the University of Wollongong’s Human Research Ethics Committee. In addition, approval to conduct research was gained from the Department of Education and Training, the Diocese of Wollongong, the Diocese of Broken Bay, the Diocese of Lismore, the Diocese of Wagga Wagga, the Diocese of Maitland-Newcastle, the Diocese of Parramatta and the Sydney Archdiocese. Furthermore, no child was allowed to participate without their own consent and that of their parent/guardian. The monetary compensation provided to schools as a thank-you for their participation was also approved by the Ethics Committee.

All participants were informed that participation was entirely voluntary and the child, and/or the parent/guardian could chose to discontinue at any stage. Precautions were also taken to ensure the anonymity of the data, whereby no names were recorded on the surveys, and once returned, the consent forms and competition entry forms were kept separate to all surveys to avoid identifying individual participants. All materials collected are to be securely stored at the University of Wollongong’s Centre for Health Initiatives for a period of five years.

9.4.5 Recruitment

A letter was sent to desired schools in the hope that they would be interested in participating; this was followed by a follow-up phone call. If and when they agreed to allow their school to participate, letters and permission slips (for the student and parents/guardians) for each student in the appropriate years (grade nine and 10) were sent to the school. Once consent forms were read and signed, they were returned to the school and an appropriate mode, day and time for the school was scheduled.

9.4.6 Cost & Timing

The survey itself requires approximately 15 minutes to complete, however, additional time must also be allocated for distribution and collection of the survey. All costs associated with administering the survey were covered by the Centre for Health Initiatives using funding from the ARC Linkage grant. One teacher from each school was required to be a designated
contact person; this teacher assisted the researcher in coordinating and administering the survey.

9.4.7 Compensation

Each school that participated received a gift voucher towards educational provisions as a thank you for their time and participation; the value of this voucher was dependant on how many students completed the survey. For simply participating, each school received a $100 voucher, then if they had over 50 students complete the survey the value of the voucher rose to $200, and if over 100 students completed the survey, then the value of the voucher was $300. Each student who completed the survey was also given the opportunity to enter the draw to win a Video IPod valued at approximately $400.

9.4.8 Survey Analysis

The survey utilised in the second stage of the research process will be entered into Statistical Package for Social Sciences (SPSS). A number of analysis techniques will then be applied in order to analyse the results.

9.4.8.1 BL Groups by Scenario

Firstly, new variables are created with SPSS to allow for the inclusion rule (selection of at least two coinciding BL options out of three). This will develop four new variables in the database which represent the number of participants in each BL segment within each of the four survey scenarios. A simple frequency count is then used to ascertain how many participants meet the inclusion rule, and BL groups they fall in to.

9.4.8.2 Influencing Variables

These four new variables will then be used to conduct a number of Pearson’s chi-squared test. The Pearson’s chi-squared test is used to test the statistical independence of two variables (Jaeger, 1990). If the two variables are found to be independent, then they are not related in any way. However, if two variables are found to be statistically dependent, then knowing the status of one of the variables is useful in predicting the status of the second variable (Jaeger, 1990; Churchill & Iacobucci, 2002). Within the output table of a chi-squared test, known as a contingency table (Jaeger, 1990), the chi-squared statistic (represented by Asymp. Sig. in SPSS outputs) identifies the nature of the relationship between the variables (i.e. are they dependant or independent). The lower the chi-squared statistic, the less likely
that the two variables are independent, and, as a rule of thumb, those statistics less than 0.05 indicate that the variables are not related (independent) (Malhorta et al., 2002).

In running these tests, it will be established if sun protection behaviours are predicted by any of the four scenarios considered in the survey (aquatic, outdoors, with family, with friends). If these variables are predictive of each other (dependent), this would indicate consistent sun protection behaviours, and if they are not predictive of each other (independent), this means that behaviours are not consistent and will alter between different scenarios.

9.4.8.3 Overall Segment Inclusion

In order to obtain data on outdoor behaviours, skin and burn types, and media usage for each unique segment, an overall segmentation must also be developed (rather than individual segmentation for each scenario). Once it was established that the groups do in fact hold up under testing (i.e. they do in fact exist) then an overall segment allocation can be developed based on each participant’s most common response to the segmentation questions. In doing this, each participant’s allocation into one of the six segments can be gained irrelevant of situational factors, and thus, further demographic and behaviour characteristics for segments of interest can be developed using simple means and frequencies.

9.5 SUMMARY

Surveys have been utilised in numerous areas of knowledge, including health research. In regards to adolescent sun protection, previous research indicates that adolescents are capable of completing such surveys and self-reporting their own sun protection behaviours. As the survey is designed to test previously non-existent segments, and thus no tool exists to do so, a new survey must be designed. The transtheoretical model literature has been addressed to guide the current survey design due to the overall similarities between brand loyalty and the stages of change model. A number of additional design factors are also introduced, including the use of situational factors in the testing of the BL segments, and the use of focus group transcripts to develop the core behaviour statements. The survey design was then tested utilising the think aloud technique with both the target audience, and staff and students from the Centre for Health Initiatives. Factors concerning the mode in which a survey is administered (web v paper) are addressed and the decision made that participating schools will be given a choice between the two modes in an attempt to increase participation rates. Lastly, the logistics, recruitment strategies and ethical considerations are outlined,
which includes the objective of including both public and private schools from four RRMA regions.
10. PILOT STUDY

This chapter serves to outline the pilot study conducted with the target audience to test the final survey design. This includes the objectives and sample used for the pilot, including total sample size and from where and how they were recruited. An overview of these participants is then provided which gives information on their age, gender and grade at school, as well as other characteristics such as skin and burn type. The chapter then provides results from the pilot survey, support for the brand loyalty segments developed in the focus groups and then furthers this analysis to provide results on preliminary segment sizes. Once the segments have been established, the chapter addresses the situational constructs used in the survey (outdoors, aquatic, with family and with friends) and the preliminary impact this has on the segments. Lastly, the chapter outlines the results of a mode comparison test which identifies no major conflict between the web and paper-based surveys.

10.1 PILOT TESTING

This pilot was conducted with a single private school in the Wollongong area. This school was specifically recruited due to its close proximity to the University of Wollongong, providing easy access for the researchers, and also due to the fact that this school had participated in the focus groups research and thus a prior relationship with teachers and administration staff had been established. The intention of the pilot was to test the survey on approximately 60 students, using two different survey modes which would then allow the researcher to examine whether the BL groups themselves appear to hold up under testing, and also to test any significant difference between modes of administration. In doing this, not only does the pilot study do a final pre-test of the survey before major data collection occurs, but also helps to establish if major data collection is viable. If the groups did not hold up, then the survey would perhaps have to be redesigned, or it may be concluded that the BL segments do not in fact exist and thus further testing would be inappropriate.

Two classes from grade 10 participated in the pilot study, which resulted in 51 participants (29 from Class A and 22 from Class B). Initially, Class A was tested using an online survey program, while Class B was surveyed using a paper-based survey. These surveys occurred simultaneously during class time in the last week of term two, 2007. Class A was then re-tested using a paper-based survey three weeks later on the first day of term three, 2007.
10.1.1 Pilot Test Results

The following results are based entirely on the 51 paper-based surveys completed by the pilot participants. Overall, the surveyed population was relatively equally divided by gender with 47.1% male participants and 52.9% female participants, while the age range was 74.5% 15 years olds, 23.5% 16 years old and 2% being 14 years old.

In terms of skin colour, 37.3% indicated that they had ‘medium skin’, 27.5% ‘fair skin’, 19.6% ‘olive skin’, 5.9% very ‘fair skin’, 3.9% ‘dark skin’ and 3.9% ‘didn’t know/couldn’t say’. Furthermore, that 27.5% indicated that there skin ‘burn first, then tan’, as did 27.5% indicated that their skin ‘not burn at all, just tan’, 23.5% ‘just burn and no tan’, 15.7% indicate that ‘nothing would happen’ and 3.9% ‘can’t say/don’t know’.

10.1.1.1 Do the Brand Loyalty Segments Hold?

The most important outcome for the pilot study was in fact whether or not the behaviour groups themselves appear to hold up under testing, and that the survey tool is able to adequately capture this. Therefore the number of participants who were successfully included into a group (and of course the number of those who were not) must be examined.

The number of participants who did not meet the inclusion rule is minimal for all sections with the following results; Section A (n=3; 5.9%), Section B (n=4; 7.8%), Section C (n=6; 11.8%) and Section D (n=2; 3.9%). These preliminary results indicate that in three of the four survey sections, those participants who did not fall into a specific BL segment were fewer than 10% of the sample, with the exception of Section C which was 11.8%. This of course indicates that less than 10 participants in every hundred surveyed would not fall into a BL segment in each of the sections (again with the minor exception in Section C). Of course for Section D, these figures are even more promising with the results indicating that less than five participants in every hundred would not fall into a segment. Overall, this indicates that the survey is able to accurately divide participants into one of the six BL segments.

10.1.1.2 Groups Results

In terms of which groups appear to be dominant in the study thus far, the Forgetful Attempter and the Risk Reducer appear to be by far the prevailing behaviour segments. In Section A the Forgetful Attempters and Risk Reducers were 27.5% and 39.2% respectively, in Section B
they were 37.3% and 33.3% respectively, in Section C 41.2% and 19.6%, and in Section D 45.1% and 15.7% respectively. In each scenario, the Forgetful Attempters and the Risk Reducers were the principal segments (with the exception of Section D where 23.5% of the participants were classified as Consciously Lazy). These results indicate that the participants are more forgetful when not in aquatic environment by the fact that in Section A and B (aquatic) the difference in figures between these two BL groups (Forgetful Attempters and Risk Reducers) are only minimal, however, there is a major increase in Forgetful Attempters once the scenario is changed to being outdoors with Section C and D.

Following these two outright dominant segments were the Vigilant Defenders and the Consciously Lazy which had 17.6% and 9.8% respectively in Section A, 11.8% and 9.8% in Section B, 9.8% and 13.7% in Section C, and 5.9% and 23.5% respectively in Section D. It is noted that the Vigilant Defenders are dominant over the Consciously Lazy in the aquatic scenarios (Sections A and B), however the results are reversed in the outdoors scenarios (Section C and D). This supports the literature and the focus group results which indicated a lack of sun protection consideration when not in an aquatic environment, as the participants appear to be more vigilant in protecting themselves when in an aquatic situation, but when simply outdoors they become lazier.

Interestingly, no Unaffected group members were indicated in either Section A or Section B, however both Section C and D indicated a small number of this group (Section C n=2; 3.9% and Section D n=3; 5.9%). This again indicates the lack of sun protection consideration when not in an aquatic environment. Lastly, the pilot study indicated no Tan Seekers, which is of course a positive result as this implies that none of the 51 participants are actively and consistently avoiding sun protecting, and purposely exposing their skin, purely due to the motivation of obtaining a tan.

10.1.1.3 Scenario Results: Location v. Social Group

It was acknowledged during the survey design stage that there appeared to be situational influences on the sun protection behaviours of adolescents, and that these influences were thus included in the survey. The two main variables that are tested are location (either aquatic or outdoors) and social group (family or friends) which results in a total of four scenario tests.
The pilot survey results indicate that the BL groups (and thus reported behaviours) appear to remain relatively consistent. In fact, all four scenario tests (with family, with friends, outdoors and aquatic) resulted in a .000 chi-squared statistic indicating that they are all dependent.

The scenario test indicates that when in either an aquatic or outdoor environment, the behaviour they display with their parents and/or family is a predictor of the behaviour that they will display with their friends and vice versa. This indicates that the group they are with does not appear to have any major effect on the consistency of behaviours.

The behaviour when with parents/family in an aquatic environment, are also dependent (and thus predictive of) the behaviours exhibited with parents/family in an outdoor environment. Furthermore, the dependent nature of behaviours with friends in an aquatic environment, with that of being with friends in an outdoor environment, indicates that the physical environment (aquatic or outdoors) does not hold any substantial influence on the sun protection behaviours of adolescents.

10.1.1.3.1 Overall Results of Scenario Comparison

There is no statistical significance to indicate that any of the four scenarios utilised in the participant survey have any dramatic impact on the sun protection behaviours of adolescents. In fact, to the contrary, it indicates that no matter who the adolescents are with, and in what environment, their overall sun protection behaviours remain relatively consistent. As this is merely a pilot examination with a small sample size, it will be interesting to see if this holds true in the core data collection phase.

10.2 MODE COMPARISON RESULTS

As previously mentioned, the mode comparison was conducted with Class A which has a total of 29 participants. The 29 students were given the web-based survey to complete, and then three weeks later, the same class completed the paper-based survey.

When comparing the results of BL group formation by mode, there are no significant discrepancies, thus there is no statistical evidence to suggest that there is a clear mode influence by either form of survey administration. Therefore the research is confident to conduct a dual mode survey with its participants. However, due to the relatively small sample
size used in this mode comparison (and thus limited significance in discrepancies) it would be beneficial to perhaps conduct further studies on impact of mode on survey response.

10.2.1 Limitations in Comparison

When directly comparing the responses from the same participants but with different mode types, we should be able to decipher whether or not there is any severe mode differences that may impact on future data collection. However, like most research, there are a number of limitations that need to be considered.

10.2.1.1 Participant Absences

It must be noted that although efforts were made to test both mode types on the same participants, it is however acknowledged that this pilot was conducted on a specific grade 10 class at the pilot school and that there was one participant absent from the first survey administration, who was present for the re-test, and another student who had participated in the first survey but was absent for the re-test. Thus, at least some limited level of response variation is expected between modes.

10.2.1.2 Timing between Surveys

The first survey administration (web-based) was conducted in the last week in term two 2007, while the second survey administration (paper-based) was conducted on the first day of term three 2007 (approximately three weeks apart). However, during the interval between surveys, the student were on school holidays, where the possibility exists for them to spend extended time outdoors, meaning they may be better able to reflect on their outdoor behaviours in the second survey mode over the first. Secondly, due to prior exposure to the survey and survey content (i.e. the importance of sun protection), the survey itself could have acted as a reminder tool to encourage more positive behaviours (even if it is only in the short term), which may also impact on the second survey mode. However, as this research was conducted in the middle of winter, the impact of these situational factors is believed to be limited in scope and poses no substantial impact on the integrity of the data.

10.3 SUMMARY

The intention of the pilot study was to establish if the brand loyalty segments developed in the focus group do appear to be holding up under testing prior to any major data collection. Based on the results of this pilot, the brand loyalty segments do appear to be holding up, with
only approximately 10% of participants not falling into any one segment. In terms of specific groups, the Forgetful Attempters and the Risk Reducers appear to be the most prominent groups, followed by the Consciously Lazy and the Vigilant Defenders. Few Unaffected and Tans Seekers were reported in the pilot analysis. In regards to potential influencing variables, neither social group (family or friends) or location (aquatic or outdoors) are shown to have any significance on segment membership. However, due to the small sample size used in the pilot, this may change as greater numbers are tested. In regards to mode testing, despite a number of small limitations, no significant impact between mode responses (web v paper) was found, supporting the research decisions to offer a choice between both modes.
11. SURVEY OVERVIEW

This chapter serves to present the results of the final data collection stage outlined in chapter nine; being a large scale survey conducted with NSW adolescents. The overall aim of this survey is to determine if the Sun Protection Survey developed and tested in the pilot study would continue to group respondents into one of six Brand Loyalty segments in larger scale testing. In doing this, it also cements the existence of the Brand Loyalty segments developed in the previous qualitative data collection.

An overview of the participants and characteristics of the Brand Loyalty segments is also provided. However, it must be noted that this chapter aims to outline and recognise points of interest identified in the preliminary results of the Sun Protection Survey – but that in-depth statistical analysis is yet to be conducted.

11.1 SURVEY RESULTS

11.1.1 Participant Demographics

The Adolescent Sun Protection survey, conducted with NSW high school students between September 2007 and April 2008, included a total of 2,450 completed surveys. These participants were distributed throughout rural, remote and metropolitan areas of NSW with 28% (n=676) residing in RRMA zone 1, 28% (n=694) in RRMA zone 2, 25% (n=623) in RRMA zone 3 and 18% (n=447) in RRMA zone 4 (please see chapter 9 for RRMA explanation and objectives). A total of 47% (n=1153) of these participants were from public schools with the remaining 53% (n=1287) being from the private school sector.

The survey population is also divided into the following characteristics:

- 47% (n=1156) were male and 53% (n=1282) were female.
- Over 90% were from grade 9 (59%) and 10 (33%).
- The age of the participants ranged from 12 to 19 years old with the vast majority (95%) aged 14 to 16-years age. The average age being 14.74 years.
11.1.2 Do the Brand Loyalty Segments really exist?

The overall intention of this survey was to establish if the six Brand Loyalty segments developed in the previous stage of research do in fact exist and can be identified using the Adolescent Sun Protection Survey. For while the initial pilot testing of this survey (see chapter 10) showed positive results, only the larger scale survey can effectively verify the stability of the six segments.

The results of this large-scale survey indicate that the groups do in fact exist and the design of the Adolescent Sun Protection Survey is capable of identifying them. This conclusion is drawn from the results of each individual scenario of the survey (aquatic, outdoors, with friends, with family). Each of these scenarios was designed to identify the BL segments within a particular situation and each had the stringent inclusion rule that a participant must indicate two out of three characteristic statements before they are allocated to a specific segment.

Overall, each of the four scenarios was able to place at least 88.9% of participants into a BL group. In fact, Scenario A (aquatic with friends) had 15.3% (n=376) of participants not fall into any segments; Scenario B (aquatic with family) had 15.0% (n=367); Scenario C (outdoors with friends) had 16.1%; and Scenario D (outdoors with family) had only 14.5% (n=356). The specific results for each scenario are provided below in Tables 11.1 through 11.4.

Table 11.1: Scenario A (Aquatic with Friends) Brand Loyalty Results

<table>
<thead>
<tr>
<th>BL Segment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>746</td>
<td>30.4%</td>
</tr>
<tr>
<td>Risk Reducer</td>
<td>387</td>
<td>15.8%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>364</td>
<td>14.9%</td>
</tr>
<tr>
<td>Unaffected</td>
<td>242</td>
<td>9.9%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>211</td>
<td>8.6%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>105</td>
<td>4.3%</td>
</tr>
<tr>
<td>No Group</td>
<td>385</td>
<td>16.1%</td>
</tr>
</tbody>
</table>
### Table 11.2: Scenario B (Aquatic with Family) Brand Loyalty Results

<table>
<thead>
<tr>
<th>BL Segment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>694</td>
<td>28.3%</td>
</tr>
<tr>
<td>Risk Reducer</td>
<td>598</td>
<td>24.4%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>361</td>
<td>14.7%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>171</td>
<td>7.0%</td>
</tr>
<tr>
<td>Unaffected</td>
<td>134</td>
<td>5.5%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>125</td>
<td>5.1%</td>
</tr>
<tr>
<td>No Group</td>
<td>367</td>
<td>15.0%</td>
</tr>
</tbody>
</table>

### Table 11.3: Scenario C (Outdoors with Friends) Brand Loyalty Results

<table>
<thead>
<tr>
<th>BL Segment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>965</td>
<td>39.4%</td>
</tr>
<tr>
<td>Risk Reducer</td>
<td>289</td>
<td>11.8%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>259</td>
<td>10.6%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>247</td>
<td>10.1%</td>
</tr>
<tr>
<td>Unaffected</td>
<td>239</td>
<td>9.8%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>95</td>
<td>3.9%</td>
</tr>
<tr>
<td>No Group</td>
<td>356</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

### Table 11.4: Scenario D (Outdoors with Family) Brand Loyalty Results

<table>
<thead>
<tr>
<th>BL Segment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Reducer</td>
<td>666</td>
<td>27.2%</td>
</tr>
<tr>
<td>Forgetful Attempter</td>
<td>607</td>
<td>24.8%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>367</td>
<td>15.0%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>204</td>
<td>8.3%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>117</td>
<td>4.8%</td>
</tr>
<tr>
<td>Unaffected</td>
<td>113</td>
<td>4.6%</td>
</tr>
<tr>
<td>No Group</td>
<td>376</td>
<td>15.3%</td>
</tr>
</tbody>
</table>
11.1.3 Impact of Scenarios

As anticipated, and already noted in the pilot study, the different influences believed to impact adolescent sun protection behaviours, namely setting and social context, are addressed in the survey scenarios (aquatic, non aquatic/outdoors, with family, with friends). The current results show that the size of the BL segments does in fact shift between the scenarios, which indicate that in some instances behaviours are not consistent once the context and environment is altered.

For example;

- Forgetful Attempters who are one of the largest BL segments, shift in size from 30.4% in Scenario A, 28.3% in Scenario B, 39.4% in Scenario C and 24.8% in Scenario D.
- The Risk Reducers, also one of the largest segments, also display shifts in size from 15.8% in Scenario A, 24.4% in Scenario B, 11.8% in Scenario C and 27.2% in Scenario D.

This indicates that adolescents become more forgetful in an aquatic environment, and display less conscious risk reduction behaviours when in an outdoors environment (in comparison to aquatic environment).

It is of interest to note that the most obvious shifts in behaviour amongst the segments occur between environments rather than as a result of social context. However, while we can clearly see small shifts in behaviours through the break down of BL segments between the different scenarios, when analysed using a Pearson’s Chi Square test, like the results of the pilot survey, no significance was found in any of the four scenario groups.

11.1.4 Dominant Brand Loyalty Segments

In line with the initial findings in the pilot study, The Forgetful Attempters and the Risk Reducers were the most prevalent BL segments. Again, this is followed by the Vigilant Defenders and the Consciously Lazy, while the Unaffected and the Tan Seeker groups displayed the smallest numbers.

When reporting on the overall Brand Loyalty segments for the participants, 35.3% of the adolescents surveyed are categorised as Forgetful Attempters and 20.6% as Risk Reducers. This is followed by 14% who fall into the Vigilant Defender segment, 7.7% for both the
Unaffected and the Consciously Lazy, and 4.6% as Tan Seekers (see Table 11.5 for overall segmentation results). A total of 10.1% of the participants did not fall in to any of the segments, which indicated they display characteristics from more than one segment.

Table 11.5: Overall Brand Loyalty Results

<table>
<thead>
<tr>
<th>BL Segment</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>866</td>
<td>35.3%</td>
</tr>
<tr>
<td>Risk Reducer</td>
<td>505</td>
<td>20.6%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>343</td>
<td>14.0%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>189</td>
<td>7.7%</td>
</tr>
<tr>
<td>Unaffected</td>
<td>188</td>
<td>7.7%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>112</td>
<td>4.6%</td>
</tr>
<tr>
<td>No Group</td>
<td>247</td>
<td>10.1%</td>
</tr>
</tbody>
</table>

*Note: Table 11.5 classifies participants into a BL group based on their overall most common response within the survey. Participants who had equal response levels for more than one group have been classified as no groups (as there is no clear, definitive category in their response).

11.2 SEGMENT CHARACTERISTICS

In order to obtain an insight into who segment members are, a number of points of interest within the survey results are also identified. By comparing these points of interest from the survey questions, with particular emphasis on the two most dominant segments, we may be able to shine light on key differences between groups. Being able to identify what might make a participant more likely to be the member of one segment over the other can help to make segment members easier to identify and target in future research. Again, it must be noted that these are merely results of interest – no in-depth analysis is yet to be conducted.

11.2.1 Gender

Table 11.6 shows that 37.5% of male participants were categorised as Forgetful Attempters, followed by 13.1% as Risk Reducers and Vigilant Defenders. As for the female population, they too are most likely to be Forgetful Attempters (33.7%). A further 27.5% of females were Risk Reducers and 14.8% were Vigilant Defenders. Females are less likely to be in the Consciously Lazy or Unaffected segments.
Table 11.6: Overall Gender Breakdown

<table>
<thead>
<tr>
<th>BL Segment</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>37.5%</td>
<td>33.7%</td>
</tr>
<tr>
<td>Risk Reducer</td>
<td>13.1%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>13.1%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>12.1%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Unaffected</td>
<td>10.9%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>2.4%</td>
<td>6.6%</td>
</tr>
</tbody>
</table>

In regards to gender break down within the segments themselves, Forgetful Attempters were split equally between gender, with 50.1% of FA’s being male and 49.9% being female. The Risk Reducers on the other hand were more likely to be female than male, with 69.9% female membership (see Figure 11.1).

The Consciously Lazy and Unaffected group members were more likely to be males (74.1% and 67% respectively). Tan Seekers on the other hand were far more likely to be female (75%).
11.2.2 Outdoor Behaviours

As shown in Tables 11.7 and 11.8, both Forgetful Attempters and Risk Reducers spend just slightly higher than average amounts of time outdoors; however, Forgetful Attempters spend less time per day outdoors in comparison to Risk Reducers and the Average.

When it’s not summer, Forgetful Attempters spend slightly higher than average days per week and time per day outdoors, unlike the Risk Reducers who spend the least amount of days outdoors. It could be observed that Forgetful Attempters spend more time outdoors all year round, while Risk Reducers are inclined to spend time outdoors when it’s summer (i.e. hot/sunny).

The Tan Seekers spend the longest time outdoors (5.83 days/week and 3.50 hours/day) in summer, and when it is not summer they tend to spend fewer days outdoors.. At the other end of the spectrum, the Consciously Lazy spend the least number of days outdoors per week in summer and are minimally higher than Risk Reducers when it’s not summer. This leads to the observation that unlike the Forgetful Attempters who spend larger number of days outdoors all year round, the Consciously Lazy are more inclined to spend their time indoors.
11.2.3 Skin Colour

As shown in Table 11.9, several skin type distributions of interest can be noted in the sample population that are concurrent with assumptions made in the focus group results.

- The Vigilant Defenders were more likely to be have paler skin with 10.8% indicating ‘very fair’ and 31.3% ‘fair’ skin.
- The Unaffected were more likely to have darker skin with 34.8% reporting ‘olive’ skin, 14.1% reporting ‘dark’, 2.7% ‘very dark’ and 3.3% ‘black’ skin.
- After the Unaffected, Tan Seekers have the lowest levels of reported fairness with only 1.0% reporting ‘very fair’ skin and 21.6% reporting ‘fair’ skin. Tan seekers also have high levels of ‘Medium’ skin types (39.6%).
- The Consciously Lazy appear to have average results for all skin types.
• Both the Forgetful Attempters and Risk Reducers have a range of different skin colours, with majority reporting ‘Fair’, ‘Medium’ or ‘Olive’ skin, with 84.8% FA’s and 91.4% RR’s reporting these three skin colours.

• Forgetful Attempters have a slightly higher percentage of participants reporting ‘Fair’ (31%) and ‘Very Fair’ skin (5.9%) in comparison to the Risk Reducers (22.4% and 3.2% respectively).

• Risk Reducers were also likely to have ‘Medium’ and ‘Olive’ skin with 41.2% reporting ‘Medium’ skin, and 27.8% ‘Olive’ in comparison to FA’s 35% and 18.8% respectively (see Figure 11.2).

Table 11.9: Segment Skin Colour

<table>
<thead>
<tr>
<th>Segment</th>
<th>Very Fa</th>
<th>Fair</th>
<th>Medium</th>
<th>Olive</th>
<th>Dark</th>
<th>Very Dk</th>
<th>Black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>5.9%</td>
<td>31.0%</td>
<td>35.0%</td>
<td>18.8%</td>
<td>4.4%</td>
<td>0.5%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Risk Reducers</td>
<td>3.2%</td>
<td>22.4%</td>
<td>41.2%</td>
<td>27.8%</td>
<td>3.2%</td>
<td>0%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>6.9%</td>
<td>27.5%</td>
<td>32.8%</td>
<td>22.2%</td>
<td>2.6%</td>
<td>0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>10.8%</td>
<td>31.3%</td>
<td>26.9%</td>
<td>21.1%</td>
<td>5.0%</td>
<td>0.5%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>1.0%</td>
<td>21.6%</td>
<td>39.6%</td>
<td>31.5%</td>
<td>2.7%</td>
<td>0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>The Unaffected</td>
<td>3.8%</td>
<td>10.3%</td>
<td>26.6%</td>
<td>34.8%</td>
<td>14.1%</td>
<td>2.7%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>
11.2.4 Skin Burn Type

In addition to displaying higher number of participants with fair skin, Vigilant Defenders were also more likely to have skin that burns rather than tans (32.1%), this is followed by the Forgetful Attempters and the Consciously Lazy (both 22.8%).

Tan Seekers and Risk Reducers (who both participate in conscious tanning behaviours) reported the highest levels of skin that tans, with 83.7% of Tan Seekers and 79.6% of Risk Reducers having skin that either burns then tans, or just tans. The Unaffected on the other hand have the highest levels of skin that doesn't burn, just tans (46.2%) and skin where nothing would happen (25.8%).
A notable difference between Forgetful Attempters and Risk Reducers is their skin burn type, with Risk Reducers being more likely to report having skin that tans than Forgetful Attempters. A total of 22.8% of FA’s reported having skin that ‘Just burns and not tan afterwards’ in comparison to 8.6% amongst RR’s. Furthermore, 20.3% of Forgetful Attempters reported having skin that does ‘Not burn at all, just tan’ in comparison to 34.1% of Risk Reducers (see Figure 11.3).

**Figure 11.3: Skin Burn Type Comparison FA and Risk Reducers**

<table>
<thead>
<tr>
<th></th>
<th>Just burn</th>
<th>Burn first, then</th>
<th>Not burn, just</th>
<th>Nothing would happen</th>
<th>Can’t say</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forgetful Attempter</td>
<td>22.8%</td>
<td>40.1%</td>
<td>20.3%</td>
<td>7.8%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Risk Reducers</td>
<td>8.6%</td>
<td>45.5%</td>
<td>34.1%</td>
<td>5.6%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Consciously Lazy</td>
<td>22.8%</td>
<td>22.8%</td>
<td>24.9%</td>
<td>20.1%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Vigilant Defender</td>
<td>32.1%</td>
<td>31.5%</td>
<td>16.5%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Tan Seeker</td>
<td>4.5%</td>
<td>45.0%</td>
<td>38.7%</td>
<td>9.0%</td>
<td>2.7%</td>
</tr>
<tr>
<td>The Unaffected</td>
<td>9.1%</td>
<td>11.8%</td>
<td>46.2%</td>
<td>25.8%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>
11.2.5 Segment Summary

**Forgetful Attempters** were equally split by gender and have the highest use of television as a media channel. They have a range of different skin and burn types, but often have fairer complexions and skin that burns. The Forgetful Attempters spend average or somewhat higher than average amounts of time outdoors all year round.

**Risk Reducers** were more likely to be female, with medium to olive skin that tans rather than burns. They are also more likely to spend time outdoors in summer and less time when it’s not summer. They have higher usage rates of both the Internet and magazines than others; this high level of magazine use may be attributable to the larger portion of females in this segment.

**Tan Seekers** were generally female, and, like the Risk Reducers, they were more likely to have darker complexions that tan. It is of interest to note that both these segments who report participating in tanning were more likely to perceive themselves as having skin that is darker and tans. This segment is one of the heaviest users of magazines (besides Risk Reducers), and the Internet, which again may be attributable to the higher level of females who fall into this segment. Tan Seekers are also the least likely to use television.

**Consciously Lazy** segment members were predominantly male, and have a range of different skin colours and burn types; however, they were more likely to have skin than burns rather than tans. They read fewer magazines and play more computer games than other segments.

**The Unaffected** were more likely to be male, and, generally have darker skin than other BL segments. They tend to have skin that either doesn’t burn, just tans, or their skin feels no consequence from exposure. The Unaffected were the most likely BL segment to use computer games.

**Vigilant Defenders** were relatively equally distributed by gender, and were more likely to have fairer skin that burns rather than tans. While they spend average/above average number of days outside during summer, they tend to spend less time per day outside.
11.3 SUMMARY

The Adolescent Sun Protection Survey was conducted with 2,450 NSW adolescents in an attempt to verify the existence of the Brand Loyalty segments identified in the focus group data collection and the survey pilot study. The ability of this survey to effectively categorise the majority of participants into one of the 6 specified BL segments is considered a success. In successfully segmenting the participants, the results showed that, like the pilot study, not only do these segments exist, but the Forgetful Attempters and the Risk Reducers are the most dominant groups.
12. DISCUSSION & CONCLUSION

This chapter serves to outline the overall results of the current research, and to summarise its importance and contribution to the literature. Firstly, it summarises how the current research adds to the academic literature on the sun protection behaviours of adolescents. Secondly, it is noted that the application of a social marketing tool resulted in viable segments for targeting and this approach could be utilised in future research and practice in addressing the sun protection behaviours of adolescents.

12.1 GENERAL DISCUSSION

In regards to sun protection behaviour, the findings of the current research were consistent with the literature in this area and support the library of knowledge surrounding adolescent sun protection. The current research not only confirms that Australian adolescents display low adherence to sun protection guidelines – as noted previously by Fritschi et al. (1992), Lowe et al. (2000) and Summerville & Watt (2003); but also provides further support for concepts posited in previous research, such as that adolescents participate in both intentional and unintentional tanning (Shoveller et al., 2003), adolescents have a higher preference for sunscreen than any other form of sun protection (Dobinson et al., 2005), and that the peer group can have a impact on the risk taking behaviours of an adolescent (Steinberg & Morris, 2001).

However, it was originally hypothesised that environmental and social elements – such as who an individual was with and where they were exposed to the sun – were key influences on the behaviours of Australian adolescents and the use (or non-use) of sun protection. This idea was based on findings from previous literature (Steinberg & Morris, 2001; Steinberg, 2004; Steinberg, 2007; Gardner & Steinberg, 2005). While the qualitative portion of this current research supported this inference from the literature and indicated that adolescents were more likely to consider sun protection when in an aquatic environment and with their family (in comparison to when with their friends or peers), this was not supported in the Adolescent Sun Protection Survey conducted in the latter part of the research. While the results of the survey showed shifts in behaviours when considering the four influencing factors (aquatic versus non-
aquatic environment, with friends versus with family), this shift in actual reported behaviour was small and not statistically significant.

This does not mean that environmental factors should not be considered in possible campaign or strategy development. Despite the lack of statistical significance found in the survey, there are clearly unique behaviour elements found in the four influencing factors. These could be included in place-based strategies, such as considering the fact that adolescents are more likely to consciously tan when in aquatic environment, and more likely to forget to protect in an outdoor environment. Targeting negative behaviours at the place they are likely to occur could be extremely valuable. Providing free sunscreen, advertising and promotional activities at pools and beaches is a prime example of such useful place-based strategies.

Other environmental considerations are messages that address social situations rather than merely outlining protective behaviors, such as encouraging peers/friends to look out for each other in the sun. It is noted in both the previous literature and the qualitative portion of this research that peers can have a strong positive or negative influence on adolescents. If addressed correctly, this influence could be used to the health promoter’s advantage. Social issues to be considered are the importance placed on fashion and appearance when with peers and the social stigma associated with sun protection being ‘uncool’.

Another noteworthy topic bought forth in the qualitative portion of this research which could be considered in the development of a potential campaign aimed at adolescent sun protection behaviours is that while adolescents have a high preference for sunscreen as a form of protection, they still desire developments in this product area in regards to brands, applications types and packaging design. This audience desires a range of products that cater to their own needs rather than the generic products currently available. By taking into account the current product complaints and creating a youth-orientated sun protection product range that adolescents could identify with may help to bridge the gap for adolescents as they try to move themselves away from childhood, and prove independence from their parents.

While discussing sunscreen, it is also interesting to note the lack of sunscreen application among male adolescents as they are too embarrassed to ask a ‘mate’ to apply sunscreen to their back. While this issue may be too complex to be addressed through message campaigns that attempt to alleviate this embarrassment, this issue could be addressed through such things as product development or even place-based strategies (e.g. sunscreen spray booths).
12.2 SEGMENTATION DISCUSSION

The more important addition to the body of literature from this study was the use of segmentation as a tool of social marketing. The use of segmentation in this instance bridges a gap in the literature as no other published research has applied, or attempted to apply, segmentation to adolescent sun protection behaviours. The use of segmentation principles was successful in this instance with the development of clear and definable adolescent Brand Loyalty segments. The identification of the Vigilant Defenders, Forgetful Attempters, Consciously Lazy, Risk Reducers, Tan Seekers and Unaffected segments clearly demonstrate that health promoters should develop targeted strategies to adolescent health promotion rather than using a blanket strategy to target “adolescent” behaviour.

The result of this segmentation mean that more tailored, potentially successful campaigns can be developed that target the specific behaviours and motivations of any, or all, of these six Brand Loyalty segments. In particular, the Forgetful Attempters and the Risk Reducers were both large and potentially amenable groups; making them viable and attractive segments to target. Not only are they the largest segments found in the adolescent sample for this research, but they also display behaviour and motivations that may be easier to alter than those of other segments. The Tan Seekers for example clearly have entrenched tan seeking behaviours that may be extremely difficult to change. The Forgetful Attempters and Risk Reducers, on the other hand, are generally conscious of protecting themselves, and in most cases do make some effort to do so, but often do not follow through with entirely positive behaviours.

Forgetful Attempters could easily be targeted by place-based strategies (such as those mentioned previously) as this could address their forgetfulness by prompting them at the time and location needed. The Risk Reducers, on the other hand, could be targeted using message strategies to emphasise the negative effect of tanning on appearance. As this group is predominantly female, and females are more accepting of fake tan products, perhaps a harm minimisation strategy could be taken with this segment. Clearly, further research needs to be conducted with these segments to develop the best possible strategy.

Overall, the existence of these segments shows that within a single target audience there are numerous differing behaviours, product preferences, motivations and beliefs, and that the most effective behaviour change campaigns will acknowledge and address these differences.
Overall, future health promoters/social marketers interested in altering adolescent sun protection behaviours can use this segmentation as a new foundation for strategy development. By selecting a target segment of interest, they can now identify, isolate and recruit members of that segment for further study and gather further tailored information for campaign development.

12.3 SUMMARY

As identified in chapter three, complex health promotion campaigns are not yet widely utilising the principals of social marketing. More specifically, few adolescent centered campaigns have ever been developed. There are of course the few exceptions, such as the Protect the Truth campaign in 2007, the Healthy Talk campaign (Cho et al., 2004) and the *Dope EFX U campaign* (Youth Solutions, 2005) (see chapter three for full details). In situations that involve not only complex behaviours but also a complex target audience, such as adolescent sun protection behaviours, there is an increasing need to consider a holistic approach to behaviour change campaigns, and thus the need for further application of the principals of social marketing. By applying these principles, even in part, to adolescent sun protection, this research was not only able to develop a segmentation strategy to better target its audience, but also to provide greater insight into general behaviours and motivations. This paves the way for future research into this important area, and potentially more successful behaviour change strategies.
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APPENDIX 1-
DISCUSSION GUIDE
Group Discussion Flow and Techniques

- Welcome, thank you for attending.
- Advise them that they are being audio taped
- Advise them that they are free to leave at any time they like and they do not have to answer any question they do not want to.

Participants will be guided to cover the topics outlined below:

- The non-monetary and monetary costs associated with sun protection (What perceived and actual barriers exist for them in using sun protection?)
- How can we overcome them?
- Potential product development.
- The use of fake tans.
- Where and when risky behaviours most likely occur.
- What can we do to prevent the behaviour at the actual place that it occurs?

Introduction- being recoded, the purpose of focus groups, what is expected of them and who you are. Then go around the circle and have each participant introduce themselves by saying their name, age and something about themselves (such as what they like to do on the weekend)

We’re going to discuss spending time outside in the sun, and different ways we can protect ourselves. Who here has ever had a sunburn? What is the worst thing about getting sun burnt? If you have had more than one burn, why didn’t you protect yourself the next time?

List making: With the note pad in front of you, I want you to make a list of all the ways in which you currently protect yourself, remember that this is a list of things that you actually do, not of what you could do. What do you do to protect yourself? (Go around the group one by one)

Why don’t you do more to protect yourself from the sun? Why do you think that is? What would help you or make you want to do more? What things would make it easier for you to do more?

Who do you think really needs to protect themselves from the sun? If you were to get skin cancer, what do you think would happen to you?

We are going to take some time to talk about different products that you can use to protect yourself from the sun.

Card sort: Divide into small groups. Each group will be given a pile of 20 cards. Each card has a picture of a sun protection product. In your group, divide these cards into 2 piles. One pile is for those items that you and your friends would definitely wear, the 2nd pile is for those items that they would not wear.

Let’s have a look at the different groups you’ve made. Firstly we are going to look at the group of things that you wouldn’t use and we are going to talk about why you don’t like these particular products.

Who would usually wear/use these products? (Choose a selection of the ‘will not wear category’). Now everyone close their eyes, and lets imagine that we are sitting on a beach somewhere, and it’s a nice sunny day and someone your age walks up to you and is wearing some ........ from your no pile.
What sort of person are they? Would they fit in here? What would you think of them?

For each one, what can we do to move it from this pile to the other pile? What will make you want to wear it? Is there anything about these items that you do actually like?

We are now going to talk about the group of products that you would use. Who would usually buy these, you or your parents? If it’s your parents, do they choose them or do you help? Where would you get them from? Do you usually try and stick to a particular brand or shop? What are your favourite brands? How much would you pay? Do you think this is reasonable?

How about the Cancer Council products, what do you think of them? Do you use them? Would you buy them? If you do use them, who purchases them? Would you wear them around your friends? Which particular CC products would/do you prefer?

Let’s divide into pairs

**Design your own clothing:** In your pairs, imagine that you have been hired by your favourite designer/brand to design a new range of sun protective clothing. Remember it has to be something that you and your friends would wear. Sketch your design(s).

Present these designs to the group and explain how they protect you from the sun and why they are cool/why people would wear them, what makes it appealing, where we would buy it from and how much you expect people to pay for it. Let’s see if you can sell us your product.

How do these designs differ from the products that are currently available to you? What kind of styles do they have available to you that you don’t like? What don’t you like about the current stuff? What would you like to see done differently? Are there any brands in particular that you would like to see do something different?

Now we are going to have a look at when and where you might wear these different products. When do you spend the most time in the sun? What types of activities are you doing? How do you usually protect yourself when participating? What/who reminds you to put on sunscreen or a shirt/hat when you’re out in the sun?

**Product development:** Still in your pairs, each pair has to choose an activity/sport. This has to be something that at least one of the partners in the group does on the weekend (Could be as simple as going to the beach). On a sheet of paper make a list of, what you would take with you when you participate in this activity on a usual day?

Design an item/product/way of protecting yourself that could help you keep better protected while participating in this activity. This can be as creative or inventive as you like. Show you ideas to the group and explain how it can help.

As a group, can you come up with any other products or ideas that you would like to see? Imagine your on the beach with your friends what do you reckon would make you think about putting on sunscreen?

Groups will then be shown posters of celebrities
Do you think these celebrities have real or fake tans? Why would you assume it is a fake tan?

Do you think most celebrities use fake tans? Why do you think they use fake tans?

For girls:

Have any of your friends ever used fake tan? Have you ever used fake tan? What were your main reasons for using it rather than a tan from the sun?

If you or a friend has ever used it, what was it like? Would you/do you still use it?

If you haven’t used it- would you? If not, why not?

Is a celebrity using fake tan different to you using a fake tan? Why?

For boys:

Would your friends ever, or have they ever used fake tan? Would you ever use fake tans?

If no, why not?

Is a celebrity using fake tan different to you using a fake tan? Why?

Wrap: After this discussion is there anything else you’d like to add? Have you thought of any other ideas? Or would you like to make any more comments?

Please take 5 minutes to fill out the survey and return it to me. Then I’ll give you your voucher and you’re free to leave. Thank you again for your time and contribution.
APPENDIX 2-
SEGMENTATION SURVEY
Dear Student,

The Cancer Council NSW and the University of Wollongong’s Centre for Health Initiatives are conducting research on adolescent sun protection behaviours by conducting surveys with students in NSW High schools. The information collected from these surveys will be used to gain an insight into what you do, think and believe about tanning and sun protection practices, and assist in the development of future initiatives by The Cancer Council NSW.

The completion of this survey is entirely voluntary and you can choose to discontinue at any stage. All surveys are anonymous and will therefore not identify participants by name to guarantee confidentiality. Furthermore, the information contained in these surveys will be viewed only by the researchers for the purpose of this project and all information will be stored securely at the university for a period of 5 years.

I am: □ male □ female

Year at school: ___________

Age: ___________

Your postcode: ___________

For sections A, B, C and D you will be asked to answer a series of questions that will give you 6 answer statements, and will ask you to select ONE of those statements for each question. Each section will have 3 different questions to be completed. For section E and F simply follow the instructions for each individual question.

Please note: When a question or statement refers to the term ‘sun protection’, it is referring to any number of ways you can protect yourself from the sun, such as sunscreen, zinc, rash vest, sun hat, sitting in the shade, etc.
SECTION A: For each question, select the ONE statement that best describes you when at the BEACH, POOL or LAKE with your PARENTS or FAMILY:

**Question 1**
- □ I purposely avoid sun protection so I can get a tan
- □ I always protect myself from the sun
- □ I don’t usually wear sunscreen because it just takes too long and is annoying to apply
- □ I have never really needed to protect myself from the sun
- □ I often forget about protecting myself, until it’s too late
- □ I often apply sunscreen to minimise the damage to my skin, but I still want a tan

**Question 2**
- □ I try and wear sun protection, but often forget
- □ I don’t think I really need to protect myself from the sun
- □ I often wear low SPF sunscreen so I can still get a tan
- □ I like having a tan, so I avoid wearing sun protection
- □ I am aware of the need for sun protection, but I find it too much hassle so don’t usually bother
- □ I always do as much as I can to protect myself from the sun whenever I go outdoors

**Question 3**
- □ I like to tan, but also wear sunscreen so I don’t go red or get wrinkles when I’m older
- □ I have never really been burnt, so don’t see the need to protect myself
- □ I know I need to protect myself from the sun and I always do
- □ I don’t usually bother protecting myself from the sun because I feel that the difficulties of doing so usually outweigh the benefits
- □ I often forget to apply or reapply sunscreen
- □ I know I should use sun protection, but I do not protect myself because I want a tan
SECTION B: For each question, select the ONE statement that best describes you when at the BEACH, POOL or LAKE with your FRIENDS:

Question 1

☐ I have never really been burnt, so don’t see the need to protect myself
☐ I don’t usually bother protecting myself from the sun because I feel that the difficulties of doing so usually outweigh the benefits
☐ I like to tan, but also wear sunscreen so I don’t go red or get wrinkles when I’m older
☐ I always protect myself from the sun
☐ I like having a tan, so I avoid wearing sun protection
☐ I try and wear sun protection, but often forget

Question 2

☐ I often apply sunscreen to minimise the damage to my skin, but I still want a tan
☐ I always do as much as I can to protect myself from the sun whenever I go outdoors
☐ I know I should use sun protection, but I do not protect myself because I want a tan
☐ I have never really needed to protect myself from the sun
☐ I often forget to apply or reapply sunscreen
☐ I don’t usually wear sunscreen because it just takes too long and is annoying to apply

Question 3

☐ I know I need to protect myself from the sun and I always do
☐ I often forget about protecting myself, until it’s too late
☐ I purposely avoid sun protection so I can get a tan
☐ I often wear low SPF sunscreen so I can still get a tan
☐ I don’t think I really need to protect myself from the sun
☐ I am aware of the need for sun protection, but I find it too much hassle so don’t usually bother
SECTION C: For each question, select ONE statement that best describes you when OUTDOORS (and not at the beach, pool or lake) with your PARENTS or FAMILY:

Question 1
- I am aware of the need for sun protection, but I find it too much hassle so don’t usually bother
- I don’t think I really need to protect myself from the sun
- I often forget to apply or reapply sunscreen
- I wear often low SPF sunscreen so I can still get a tan
- I know I should use sun protection, but I do not protect myself because I want a tan
- I always protect myself from the sun

Question 2
- I always do as much as I can to protect myself from the sun whenever I go outdoors
- I purposely avoid sun protection so I can get a tan
- I often forget about protecting myself, until it’s too late
- I have never really been burnt, so don’t see the need to protect myself
- I don’t usually protect myself from the sun because I feel that the difficulties of doing so usually outweigh the benefits
- I often apply sunscreen to minimise the damage to my skin, but I still want a tan

Question 3
- I know I need to protect myself from the sun and I always do
- I like to tan, but also wear sunscreen so I don’t go red or get wrinkles when I’m older
- I like having a tan, so I avoid wearing sun protection
- I try and wear sun protection, but often forget
- I have never really needed to protect myself from the sun
- I don’t usually wear sunscreen because it just takes too long and is annoying to apply
SECTION D: For each question, select ONE statement that best describes you when OUTDOORS (and not at the beach, pool or lake) with your FRIENDS:

Question 1
- I often forget to apply or reapply sunscreen
- I have never really been burnt, so don’t see the need to protect myself
- I like to tan, but also wear sunscreen so I don’t go red or get wrinkles when I’m older
- I always protect myself from the sun
- I don’t usually wear sunscreen because it just takes too long and is annoying to apply
- I purposely avoid sun protection so I can get a tan

Question 2
- I wear low SPF sunscreen so I can still get a tan
- I often forget about protecting myself, until it’s too late
- I have never really needed to protect myself from the sun
- I am aware of the need for sun protection, but I find it too much hassle so don’t usually bother
- I always do as much as I can to protect myself from the sun whenever I go outdoors
- I like having a tan, so I avoid wearing sun protection

Question 3
- I try and wear sun protection, but often forget
- I know I need to protect myself from the sun and I always do
- I don’t think I really need to protect myself from the sun
- I don’t usually protect myself from the sun because I feel that the difficulties of doing so usually outweigh the benefits
- I know I should use sun protection, but I do not protect myself because I want a tan
- I often apply sunscreen to minimise the damage to my skin, but I still want a tan
SECTION E: For the following questions, please mark the appropriate box for your answer

1). During **summer**, in a typical week how many days do you think you would spend time outdoors?

☐ 0  ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5  ☐ 6  ☐ 7

On these days, how much time on average do you think you would spend outdoors?

☐ ½ hour-1 hour  ☐ 1-2 hours  ☐ 2-3 hours  ☐ more than 3 hours

2). When it’s **not summer**, in a typical week how many days do you think you would spend time outdoors?

☐ 0  ☐ 1  ☐ 2  ☐ 3  ☐ 4  ☐ 5  ☐ 6  ☐ 7

On these days, how much time on average do you think you would spend outdoors?

☐ ½ hour-1 hour  ☐ 1-2 hours  ☐ 2-3 hours  ☐ more than 3 hours

3). How would you describe your skin colour when you don't have any tan?

☐ Very fair
☐ Fair
☐ Medium
☐ Olive
☐ Dark
☐ Very dark
☐ Black
☐ Can’t say/don’t know

4). Suppose your skin was exposed to strong sunshine at the beginning of summer with no protection at all. If you stayed in the sun for 30 minutes, would your skin:

☐ Just burn and not tan afterwards
☐ Burn first then tan
☐ Not burn at all, just tan
☐ Nothing would happen
☐ Can’t say/don’t know
SECTION F: For the following questions, please follow the instructions for each question and answer accordingly.

5). Rank each of the following forms of media from 1 through to 6, with 1 being the one you use the most, and 6 being the one you use the least:

___ Television
___ Magazines
___ Internet
___ Computer games
___ Radio
___ Newspaper

6). How often do you use the internet?
□ Daily
□ 2-3 times per week
□ Once per week
□ Less than once per week
□ Rarely/Never

6b). If you use the internet, which three sites do you visit the most?

1. __________________   2. __________________  3. __________________

7). How often do you read/buy magazines?
□ Once per week
□ Once per month
□ Less than once a month
□ Rarely/Never

7b). If any, which magazines do you like to read? (List below)

8). Do you participate in any outdoor sports/activities during the summer? □ yes □ No
If yes, which sport(s) do you play? ________________________________

9). Do you participate in any outdoor sport/activities during the winter? □ yes □ No
If yes, which sport(s) do you play? ________________________________