Psychosocial Maturity: Considering the Cultural Context.

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This thesis is presented in partial fulfilment of the requirements for the degree of Bachelor of Psychology (Honours), Murdoch University, 2014.
I declare that this thesis is my own account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary educational institution.

Signed ………………………………………………………………………………………………………

Johnelle L. Wilkins
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Thesis Title: Psychosocial Maturity: Considering the Cultural Context.

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Abstract

This study was a preliminary examination of differences in psychosocial maturity according to cultural context. Using a cross-sectional design, measures for responsibility, perspective and temperance, were utilized to compare whether psychosocial maturity would differ between two different western cultures. Older adolescents aged between 17 and 22 years were compared on factors of psychosocial maturity, participants were 49 Australian university students and 269 US college students. Findings showed that older US adolescents had significantly higher psychosocial maturity levels overall, and significantly higher levels of responsibility and perspective compared to older Australian adolescents. No differences were seen for temperance, which yielded similar levels for both older Australian and US adolescents. Results suggest that differences in cultural norms and opportunities experienced by the older adolescents, may result in aspects of psychosocial maturity developing differently when compared to other western cultures. This study underscores the influence of the cultural context on psychosocial maturity, emphasising that, within the cultural context are nuances that warrant a second wave of longitudinal research.

Keywords: culture, psychosocial maturity, adolescence, parental influences.
Acknowledgments

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Psychosocial maturity: Considering the cultural context.

By influencing and shaping aspects of behaviour and beliefs, culture creates the norms that guide societies (Bornstein, 2013). Dynamic interactions experienced by an individual may vary from culture to culture, so that environment moulds the individual (Erikson, 1968). As culture encompasses our ideas and our social behaviours (“Culture”, 2014), it is embedded within the social context of our lives. Culture contributes to parental expectations, guiding parenting styles as to how to raise a child (Bornstein, 2013; McNaughton, 1996). In turn, everyday interactions with parents and friends heavily influence adolescent development (Blewitt & Broderick, 1999; Modecki, 2008; Cripps & Zyromski, 2009). Psychosocial maturity refers to the emotional and social capabilities that shape and guide maturity of judgement in adolescent decision making (Modecki, 2008; Modecki, 2009). According to Erikson (1968) cultural norms may change development in part, due to the different opportunities each different society provides. Thus, as culture and the social context in which an individual is raised is unique (Bornstein, 2013; Johnson, Giordano, Manning & Longmore, 2011), adolescents raised with different cultural norms may demonstrate different levels of psychosocial maturity.

Often western cultures are considered similar (Bornstein, 2013) in research, yet differences in cultural norms experienced by the older adolescent, may result in aspects of psychosocial maturity developing differently compared to other western cultures. Different cultural norms that influence interactions with parents and peers (Blewitt & Broderick, 1999), will likely result in older adolescents evaluating consequences to their decisions differently. For these reasons, researchers and policy makers drawing on evidence from US literature investigating psychosocial maturity, should not assume universality in their findings. In particular, psychosocial maturity
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findings that are utilised in the development of policy from other western countries, may require rethinking. Therefore, investigating the role of different cultural contexts in the development of psychosocial maturity in older adolescents, is warranted.

The decision making process is influenced by a combination of cognitive, emotional, and social factors (Cauffman & Steinberg, 2000). Psychosocial maturity includes the emotional and social factors in the decision making process, and is the main interest of this paper. It is however worthwhile to briefly discuss cognitive aspects relating to maturity, in understanding their contribution. Research has identified through magnetic resonance imaging, areas of neural activity in the adolescent brain structure, showing that the adolescent brain is consistently changing (Paus, 2005). Around the age of 14 to 17 years significant changes occur in the prefrontal areas, during which grey matter reduces and white matter increases, reflecting increased myelination (Bennett & Bard, 2006; Lenroot, 2006; Steinberg, 2010). Executive functions located in the prefrontal cortex, are the higher order cognitive processes that enable effective functioning in the social, emotional, academic and behavioural life areas. These cognitive processes are dependent on the development of increased myelination (van der Knaap et al., 1991), which allow cognitive functions such as self-regulation and meta-cognition. These functions are key for emotional regulation, facilitating the ability to delay, inhibit or modify and evaluate risks and reward, evident in decision making and social conduct (Miller, 2005; Steinberg, 2005).

Myelination and neural connectivity, are linked to age related improvements that are demonstrated through cognitive processing (Paus, 2005; Yurgelun-Todd, 2007). Consequently, adolescents who are 16 years and over demonstrate the same cognitive competencies as an adult (Steinberg, 2005). However the development of
psychosocial maturity (emotional and social factors) is not predicted by age, instead it continues to develop through adolescence and into young adulthood (Steinberg, 2005; Modecki, 2009). Simply, social and emotional maturity is still developing (Steinberg, Cauffman, Woolard, Graham & Banich, 2009). Clearly, brain development influences adolescent behaviour and decision making; research on emotional regulation suggests that the ability to delay, inhibit or modify an emotion is controlled by cognitive systems. However, as suggested by Steinberg (2005), emotion also impacts the cognitive processes in decision making. Therefore it is important to consider psychosocial factors in the decision making process, as everyday situations are influenced by the social context and by the emotions that are experienced (Steinberg, 2005).

Psychosocial maturity considers the role of the individual’s emotional and social capabilities in the decision making process (Cauffman and Steinberg, 2000; Modecki, 2008), which is a key aspect of decision making that changes throughout adolescence. By considering the cultural context in which decisions are made, this paper discusses cultural norms in parental and peer influences on older adolescents. In particular, the paper explores living arrangements and the social interactions experienced in older adolescents’ daily lives, in order to identify differences in psychosocial maturity. The term ‘older adolescents’ is used here to refer to adolescents aged 17 to 22 years that are from two similar western cultures (Australia and the US). As social influences and emotional states are likely to affect decision making and judgement (Steinberg, 2004), I expect that it will also impact the development of psychosocial maturity differently between these two western cultures.

**Living away from home.** Older adolescence can be a difficult and stressful period of life, it is a time of many new life experiences, changes, opportunities and
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responsibilities (Arnett, 2000; Petito & Cummins, 2000). A major difference that can be seen between these two particular western cultures, are the living arrangements experienced by these older adolescents’. In what appears to be a US norm, college students typically live away from the family home while they study, either on campus or in dormitories off campus (on campus). According to a report detailing the national norms for American Freshman in 2012, 76.1% of incoming US students planned on residing on campus around the country (Pryor, Eagan, Blake, Hurtado, Berdan and Case, 2012). In fact, by 18 or 19 years of age, most young adolescent Americans have left home (Goldscheider & Goldsheider, 1994). In contrast, majority of Australian university students do not live on university campuses, increasingly opting to continue living at home, and relying on parental support while completing their tertiary education (Cobb-Clark, 2008). In Australia, as reported by the Australian Bureau of Statistics (2006 to 2007) census, only 19% of females and 23% males had left the family home to study.

While the decision to move out of home for the most part involves both the adolescent and the parent, culture and social norms play a large role in setting age appropriate standards that influence the individual as to when they should move out of the family home (Cobb-Clark, 2008). Moving away from home constitutes a major social and environmental change. Such a change requires that the older adolescent adapt to their new surroundings, and adjust to the new and changing emotional and social demands they are experiencing. This adaptation can also be seen through structural changes in the brain that occur in the first year of college, indicating an interaction between the environmental context and what is genetically predetermined (Bennett & Bard, 2006).
**Older adolescence and peers.** Older adolescence is a time where autonomy is sought from parents, while concurrently depending more on peers for support. As adolescents spend more time alone with peers, they are influenced both positively and negatively (Sullivan, 2006). This is an important and normal pattern of development (Blewitt & Broderick, 1999; Kiran-Esen, 2012), during which adolescents are more inclined to refer to their peers, rather than their parents when making social decisions (Baumrind, 1996).

Behaviours which exhibit higher sensation seeking, lower self-regulation and a tendency to preference immediate rewards, are behaviours that generally peak between 14 and 16 years. During older adolescence these behaviours decline, but they still endure, such that impulse control and the ability to consider future consequences are still continuing to emerge into adulthood (Steinberg et al., 2008; Steinberg, 2010). Adolescents are vulnerable to peer pressure, impulsivity and sensation seeking, and continue to be susceptible to these pressures right into young adulthood (Steinberg & Cauffman, 1996; Modecki, 2009; Steinberg, 2005). Although adolescents are not typically pressured by peers through coercion (Steinberg & Morris, 2001), a strong desire to belong and conform increases vulnerability to behaviours that can be risky (Petito & Cummis, 2000). This increase in vulnerability occurs regardless of their peers’ actual behaviour, since it is the adolescent’s perception of peer norms that extensively influences their behaviour and decision making (Kiran-Esen, 2012; Perkins, 1997). As the college and university lifestyle allows considerable peer involvement (Morey & Dansereau, 2010), it can therefore provide increased opportunities for adolescents to engage in risky behaviours (Steinberg, 2010).

**Parental influences.** Students living away from the family home typically lack frequent contact with their parents, which can result in parents having substantially
less direct control and far less knowledge of their adolescent offspring’s activities (Johnson et al., 2011), and further make peers essential for defining behaviours (Perkins, 1999). Conversely, individuals who continue living at home during older adolescents, generally have greater access to their parents and vice versa. Even though it is a time where adolescents strive for independence from their parents, they continue to seek structure and support (Cripps & Zyromski, 2009; Johnson et al., 2011), and therefore parents remain a strong influence in their lives (Agliata & Renk, 2008).

As adolescent maturity increases, so does their distinction between moral issues and personal issues (Baumrind, 1996). It is a time where guidance from parents on moral issues are considered more legitimate, as opposed to personal issues such as clothing choice. Thus, close contact with parents during this stage, may allow adolescents more opportunity to reference parents for decision making that involve deeper issues or are decisions that are considered moral (Bednar & Fisher, 2003; Brittain, 1963). However the adolescent’s decision to reference their parent for moral decisions, is also in part determined by parenting style (Bednar & Fisher, 2003).

Parenting is often described through the combination of two dimensions, responsiveness and demandingness. Responsiveness indicates the level at which a parent is supportive and accepting of their child’s needs and demands. Demandingness, indicates the demands a parent places on a child, which help the child to integrate into their family and society through parental discipline, supervision and maturity expectations (Baumrind, 1996). Parents that demonstrate both high responsiveness and high demandingness are termed authoritative parents (Baumrind, 1996), and have been positively associated with psychosocial development (Steinberg et al., 1994). The responsiveness dimension has been attributed as the predictive factor that determines whether an adolescent is likely to seek a parent or a peer as a reference,
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when making moral decisions (Bednar & Fisher, 2003). As such, adolescents who perceive their parent’s parenting style as authoritative, are more inclined to reference their parents over peers when dealing with moral and informational decisions (Bednar & Fisher, 2003). On the other hand, adolescents who perceive their parents as having an authoritarian parenting style (low responsiveness and high demandingness), or neglectful parenting style (low in both responsiveness and demandingness) (Baumrind, 1996), are more likely to reference peers over parents for moral decisions. Parents with a permissive parenting style (high responsive and low demanding) tend to reference peers for informational decisions (Bedner & Fisher, 2003).

Parental monitoring. Close parental supervision requires a great deal of time and energy (Baumrind, 1996), an investment that improves a parent’s knowledge of their adolescent’s friends, social plans and general whereabouts (Racz & McMahon, 2011). The older adolescent that is still living at home, may allow for continued parental monitoring (Steinberg & Cauffman, 1996) and it encourages planfulness and self-regulation, in individuals who receive close parental monitoring (Baumrind, 1996). Effective monitoring is linked with the authoritative parenting style, which has been shown to lead to reduce impulsivity in adolescents, particularly in drinking control. Whereas neglectful or uninvolved parenting styles are associated with limited monitoring of adolescents ( Schroeder & Mowen, 2012) and delinquency (Hoeve, Dubas, Eichelsheim, van der Laan, Smeenk and Gerris, 2009). The permissive parenting style is also linked to monitoring levels that are lower, this is interesting as this style of parenting allows decisions to be made equally with offspring, but has been negatively associated with a parent knowing an offspring’s activities (Boon, 2007; Patock-Peckham et al., 2011). Parental monitoring that is inadequate has been found to contribute to risky behaviours in adolescence, and young adulthood (Blewitt
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& Broderick, 1999; Patock-Peckham, King, Morgan-Lopez, Ulloa and Moses, 2011; Johnson et al., 2011), and is a risk factor in the development of conduct problems and antisocial behaviour in adolescence (Racz & McMahon, 2011).

**Parenting styles in Western cultures.** Research investigating all four parenting styles (authoritarian, authoritative, indulgent/permissive and uninvolved/neglectful) is limited, particularly from Australia. Of the four, the authoritative parenting style is considered to be most common in western cultures (Barnhart et al., 2013). This finding is corroborated in Australian (Petito & Cummins, 2000) as well as in the US (Bednar & Fisher, 2003). However, some studies disagree, reporting that in the US, uninvolved / neglectful parenting styles may be more common, based on adolescent perceptions of parenting (Rothrauff et al., 2009; Lamborn et al., 1991).

The authoritative parenting style is generally linked to more positive outcomes, including psychosocial functioning (Rothrauff et al., 2009; Steinberg, 2000; Steinberg & Morris, 2001). Adolescents who report their parent’s parenting style as authoritative, have demonstrated significantly higher psychosocial development compared to authoritarian, neglectful and indulgent/permissive families (Lamborn et al., 1991). As such, adolescents raised in authoritative homes tend to be more pro-social and competent, while those raised in unengaged homes are less pro-social and more likely to externalise and internalise behaviour (Lamborn, Mounts, Steinberg & Dornbusch, 1991). Overall, while interactions between offspring and parents are complex, authoritative parenting style is seen as the best protection from high risk behaviours (Blewitt & Broderick, 1999).
**Psychosocial maturity.** Past research investigating psychosocial maturity has compared adolescent and adult levels of maturity in decision making. There is a body of literature from the US that shows that the developmental progression of psychosocial maturity changes over time, with maturity becoming more stable and slowing into young adulthood (Modecki, 2008). Researchers studying psychosocial maturity have utilized and tested three factors that embody this construct, which have been shown to affect individuals in their decision making ability. These factors include: 1) perspective, the ability to analyse decisions, including short and long term consequences and the capacity to appreciate another’s point of view, 2) temperance, the ability to evaluate a situation before acting, thus regulating impulsiveness and sensation seeking, and 3) responsibility, the development of independence and autonomy with a focus on vulnerability to social influences (Cauffman & Steinberg, 1996 1995; Cauffman and Steinberg, 2000; Modecki, 2008; Bryan-Hancock and Casey, 2010).

Utilizing measures of temperance, responsibility and perspective, Modecki (2008) compared 14-17, 18-21, 22-27 and 28-40 year olds in the US. The findings showed that factors of psychosocial maturity were reasonably constant after the age of 18. However, temperance continued to development past 18 years of age in this US sample. In a similar Australian study using the same psychosocial measures, 18 and 25 year olds were compared. These findings revealed that both perspective and responsibility in Australian 18 year olds were significantly different from 25 year olds (Bryann-Hancock & Casey, 2010). The results from the study appear to suggest that in Australia, the development of perspective and responsibility in older adolescents continues to develop beyond 18 years of age. Interestingly temperance was not significantly different in Bryann-Hancock and Casey (2010) study, which failed to
replicate Modecki’s (2008) findings. As the Australian sample only compares 18 and 25 year olds, we cannot decipher at which points developmental progression is occurring, however previous literature has consistently shown that psychosocial maturity levels in adolescents yields a large variance, indicating that psychosocial maturity increases with age, but that age is not a sufficient factor for predicting psychosocial maturity. Importantly, in both the US and Australian studies, 18 year olds did not demonstrate psychosocial capabilities that functioned at an adult level of maturity (Bryann-Hancock & Casey, 2010; Cauffman & Steinberg, 2000; Modecki, 2008).

The current study. Existing research acknowledges that the cultural context helps to shape the development of adolescent decision making and behaviour (Cauffman et al., 1999), but literature has not yet compared psychosocial maturity factors across cultures. In the Australian context, some preliminary evidence supporting the developmental progression of psychosocial decision making factors has been demonstrated (Bryann-Hancock & Casey, 2010). But as the majority of research originates from the US, very little is known about developmental progression aspects of decision making on psychosocial maturity in other western cultures.

This study expects to reveal developmental differences in psychosocial maturity in older adolescence, highlighting the need for caution when interpreting US studies on psychosocial maturity, particularly for policy makers and researchers in other countries such as Australia. Cultural homogeneity between (and within) western cultures should not be assumed (Stevenson-Hinde, 1998), nor the universal development of psychosocial maturity (Bornstein, 2013). This study intends to fill an important gap in the literature, extending on Steinberg’s (2010) view that different settings may result in different consequences.
The vast majority of psychosocial maturity research has focused on identifying whether adolescents have a reduced capacity for decision making compared to adults. Culpability denotes the level to which a person is blameworthy or accountable for their actions and also reflects upon the level of punishment considered appropriate (Cauffman, Woolard & Reppucci, 1999). Considerable debate exists regarding psychosocial maturity in adolescence, when addressing criminal culpability (Runnell & Mays, 2012; Urbas, 2000), and whether juveniles or adolescents who commit criminal acts are culpable for the decisions they make (Bryann-Hancock & Casey, 2010; Cauffman & Steinberg, 2000 and Modecki, 2009).

In Australia and many other western countries, the assumed age of adulthood is 18, this is the arbitrary age used to determine when an individual has reached legal adulthood. This social convention is not based on empirical evidence, rather milestones that tend to reflect an age of adulthood through activities such as voting, driving and alcohol consumption (Bryann-Hancock & Casey, 2010). Dealing with older adolescence through a single cut off age may be appropriate where development is age related, but this may not be appropriate for considering the development of psychosocial maturity if influences such as culture are not taken into account.

There is a large gap between adult and older adolescent psychosocial functioning that continues until the mid-twenties, before adolescents begin to function at a level comparable to adult capabilities (Steinberg, Cauffman, Woolard, Graham & Banich, 2009; Farrington, Loeber & Howell, 2012). Literature on psychosocial maturity appears to suggest that older adolescents from Australia and the US, are maturing differently within the psychosocial construct. If adolescents are maturing differently on measures of temperance, responsibility and perspective, it warrants the comparison of these groups. This research on psychosocial maturity may add weight
to existing literature that age is not an appropriate indicator of psychosocial maturity, and is an insufficient factor in determining adolescent culpability. Findings from this study may be informative and could assist researchers and Australian policy makers in a number of areas, such as rehabilitation initiatives for older adolescents, or for those advocating changes to the legal drinking age in Australia.

**Hypothesis.** The objective of this study is to compare older adolescents from two cultures on developmental aspects of psychosocial maturity in decision making. This study is a first step to understanding how different cultures might shape psychosocial maturity in older adolescence. This study considers the cultural context through the exploration of parental and peer influences, and the interactions experienced by Australian university students and US College students. As such I will compare psychosocial maturity as well as the factors of psychosocial maturity; temperance, responsibility and perspective, between an Australian and US sample. I expect that Australian and US adolescents will display different levels of psychosocial maturity, influenced by different cultural norms, and the interactions they experience with parents and peers (Blewitt & Broderick, 1999). Hypothesis one predicts that older Australian adolescents will display lower levels of psychosocial maturity overall, compared to those from the US. Hypothesis two expects that older Australian adolescents will show lower levels of responsibility compared to US adolescents. Hypothesis three expects that older Australian adolescents will show lower levels of perspective compared to US adolescents, and hypothesis four predicts that older Australian adolescents to show higher levels of temperance compared to US. This study proposes that the development of psychosocial maturity will differ between older adolescents from two different western cultures, as adolescents will experience
different situations and opportunities in their daily lives, and thus will impact aspects of decision making that are shaped in part by their culture.

Method

Participants

Australian participants were undergraduate psychology students and were recruited through an online subject pool. The initial inclusion criteria required participants to be aged between 18 to 21 years, however due to a slow response rate it was necessary to increase the age range to 17 to 22 years. As such 49 Australian participants aged 17 to 22 years of age enrolled, and completed the online survey. US participants were sourced from Modecki’s (2008) study of which only data from older adolescents aged between 17-22 years were selected for this study, the sample consisted of 272 participants. Participants were undergraduate students attending a large university. Table 1 below shows the mean age and standard deviations of participants.

Table 1.

Mean Age and Standard Deviations of Participants.

<table>
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<th>Australia</th>
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<th>US</th>
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<td>Female</td>
<td>20.08</td>
<td>1.36</td>
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Measures

The psychosocial maturity construct is comprised of three measures, including temperance, responsibility and perspective. The amalgamation of these measures was
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conceptualized by Cauffman & Steinberg (2000) and have been utilised by a number of significant studies since then (Bryann-Hancock & Casey, 2010; Collwell et al, 2005; Cruise et al, 2008 and Modecki, 2008). Psychosocial maturity is based on an average of three dimensions of decision making, described below.

Perspective. Consideration of future Consequences Scale (CFC) taps understanding of short and long term consequences and taking another person’s point of view (Stratham, Gleicher, Boninger & Edwards, 1994). The CFC included 12 items such as; “My everyday activities are more important than the things that won’t affect me for a long time”, measured on a five point Likert scale (1= does not describe me well) to (5= describes me very well) (see Appendix B2 for perspective measure). Perspective was also measured using a subscale of the WAI. The Consideration of Others scale (Weinberger and Schwartz, 1990) assesses the degree to which participants take other people’s perspectives into account. The Consideration of Others subscale consists of 7 items, for example; “I enjoy doing things for other people, even when I don’t receive anything in return”, and responses were measured on a five point Likert scale (1= almost never to 5= almost always). Construct validity for the CFC has reported significant correlations, ranging from .47 to .43 indicating that the CFC and a preoccupation with the future are related (Stratham, Gleicher, Boninger & Edwards, 1994). To create the perspective measure, both scales were transformed into standard units and averaged. For the Australian sample Cronbach’s $\alpha = .77$, and for the American sample $\alpha = .86$. (Cauffman & Steinberg, 2000; Colwell et al., 2005 and Modecki, 2009).

Responsibility. Responsibility was conceptualised as independence, autonomy and self-reliance (Cauffman & Steinberg, 2000). Responsibility was measured through the Psychosocial Maturity Inventory (PMI) Form D (Greenberger,
Josselson, Knerr & Knerr, 1974). The PMI is comprised of three subscales, including self-reliance (“Luck decides most things that happen to me”) (reverse coded,) identity (“I change the way I feel and act so often that I sometimes wonder who the ‘real’ me is’), and work orientation (“I give up on my work when things go wrong”). The overall scale consists of 30 items, and participants respond on a Likert-type scale ranging from (1= strongly agree to 5= strongly disagree) (see Appendix B3 for responsibility measure). The PMI reports strong validity (Greenberger et al., 1974), such that the PMI is associated with perspective, responsibility and temperance. For this study, the Australian sample Cronbach’s $\alpha = .89$, and for the American sample $\alpha = .88$.

Temperance. The Weinberger Adjustment Inventory (WAI) was used to assess temperance or the ability to regulate impulsiveness and assess a situation before acting (Weinberger & Schwartz, 1990). Two subscales from the WAI are utilised to assess temperance; Suppression of Aggression and Impulse Control. Suppression of Aggression consists of 7 items such as “If someone tries to hurt me, I make sure I get even with them.”, Impulse Control consists of 8 items for instance “I say the first thing that comes to mind without thinking enough about it”. Suppression of Aggression and Impulse Control subscales were reported on a five-point Likert scale (1= almost never to 5= almost always) (see Appendix B1 for temperance measure). WAI reports acceptable levels of both discriminate and convergent validity (Weinberger & Schwartz, 1990; Weinberger, 1996). The temperance subscales were averaged to create an overall temperance measure. In the Australian sample Cronbach’s $\alpha = .87$, and in the American sample $\alpha = .90$.

Procedure
All ethical considerations were satisfied and approved by the University’s Human Research Ethics Committee (see Appendix C). For the Australian sample an advertisement for the study provided a brief description, and information required for participation (see Appendix A for subject pool advertisement). Participants completed the questionnaire online through a software package called Survey Monkey. Participants who enrolled in the study completed the untimed questionnaire online. Each section of the questionnaire gave clear prompts, providing information and instructions allowing participants to report decision making choices on hypothetical situations. If participants required any further assistance or had questions regarding the questionnaire, contact details were available. Participants were informed that they could withdraw from the study at any time. As such, informed consent was indicated by participant’s completion of the actual survey, and clicking submit. Participants provided written informed consent and completed the survey in person in return for subject pool credit were awarded credit hours for completing the survey as part of their course work. US participants provided written informed consent and completed the survey in person, in return for subject pool credit. Participants completed the psychosocial maturity scales as part of a larger research project on decision making (see Appendix B for full survey). The entire survey took roughly 45 minutes to complete. Participants were told their participation was voluntary and they could drop out at any time. Only US participants were provided a debriefing form upon completion of the survey.

**Planned Analysis**

All analyses were conducted utilising the Statistical Package for Social Sciences (SPSS) version 20. Analyses were conducted in two stages. The first stage of analysis focused on differences in country (Australian and US), in psychosocial
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maturity between countries (Australian and US), using a one way analysis of variance (ANCOVA). The independent variable (IV) was country, represented by Australian and US older adolescents. To control for the contribution of participants age, age was included as a covariate. The dependant variable (DV) was psychosocial maturity, the new variable was created by averaging the measures of responsibility, perspective and temperance.

The second stage of analysis, focused on country differences on independent dimensions of psychosocial maturity (responsibility, perspective and temperance.) A multivariate analysis of variance (MANCOVA) was used to test whether the US group would demonstrate higher responsibility and perspective, and lower temperance compared to the Australian group. The IV was country and the DVs were perspective, responsibility and temperance, with age and gender as a covariates.

Results

Preliminary analyses were first conducted to assess missing data and examine for outliers from univariate distributions. There were three cases of missing data from the temperance variable for US participants, and these participants were excluded from analysis. Univariate normality was tested through Shapiro-Wilk test, and the inspection of boxplots, skewness and kurtosis. On inspection of histograms and Q-Q plots the distributions appeared relatively normal, which was confirmed with skewness and kurtosis between ± 1.97, and a non-significant Shapiro-Wilk statistics for the US psychosocial maturity $W(269)= .992, p = .163$, and Australian psychosocial maturity $W(49)= .979, p = .515$. Shapiro-Wilk tests indicated non-significant findings for the Australian $W(49)= .985, p = .780$ and US $W(269)= .996, p = .643$ groups in perspective, and for Australians $W(49)= .961, p = .108$ for temperance. Tests for these groups indicated that the univariate normality assumption was
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satisfied. The remaining groups showed significant results for Shapiro-Wilk tests in both the Australian group \( W(49) = .899, p = .001 \) and the US group \( W(269) = .977, p = .001 \) for responsibility, and the US group \( W(269) = .975, p = .001 \) for temperance, here the assumption of univariate normality is violated. This was demonstrated through the negative skew seen in the US sample for responsibility and temperance, representing higher scores in the distribution. Additionally, a positive skew was seen in the Australian sample for responsibility, indicating lower scores in the distribution.

Box plots and Q-Q plots identified several univariate outliers. Univariate outliers were dealt with through winsorizing (Field, 2013). This transformation rectified normality through inspection of box plots and Shapiro Wilks test for responsibility \( W(49) = .962, \text{sig} = .111 \) in the Australian group, but not for the US sample \( W(269) = .978, \text{sig} = .001 \) responsibility and \( W(269) = .975, \text{sig} = .001 \) temperance. However, visual inspection of histogram distributions for US sample showing that responsibility and temperance, appear relatively normal (see Appendix G for histograms). Furthermore, the sample size was large enough to meet the necessary conditions of the central limit theorem. As such, no further transformations were made to the data (Field, 2013).

Next, stage one of analyses tested for mean differences in psychosocial maturity, between older adolescents in Australia and the US. The homogeneity of regression slopes assumption for ANCOVA was satisfied, as indicated through a non-significant \( F(3,314) = .66, p = .417 \) interaction between country and age. The relationship between the DV (psychosocial maturity) and the covariate (age) was inspected through scatterplots, and a linear relationship between the variables was confirmed, finally Levene’s test of homogeneity of variance was also satisfied \( F(1,316) = 1.41, p = .237 \).
A one-way between groups ANCOVA was conducted to determine whether psychosocial maturity differed based on country of origin, specifically, whether older US adolescents would demonstrate a higher level of psychosocial maturity compared to Australian’s. The ANCOVA showed that the covariate age, was not significantly related to psychosocial maturity $F(1,315) = .00, p = .998, \eta^2 = .00$. A statistically significant effect was found for country $F(1,315) = 7.20, p = .008, \eta^2 = .022$. Examination of means show the US sample demonstrate a higher level of psychosocial maturity compared to the Australian sample, means seen below in Table 2.

**Table 2**

**Mean and standard deviations for Psychosocial Maturity**

<table>
<thead>
<tr>
<th>Country</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
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<tbody>
<tr>
<td>Australian older adolescents</td>
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<td>.45</td>
<td>49</td>
</tr>
<tr>
<td>US older adolescents</td>
<td>3.46</td>
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</tbody>
</table>

Stage two of the analysis examined differences in individual aspects of psychosocial maturity for responsibility, perspective and temperance, based on country of origin (Australian versus US), whilst controlling for age. First, multivariate outliers were checked through Mahalanobis Distance in the residual statistics. A maximum Mahalanobis Distance of 21.268 was noted, which was higher than the critical value $x^2(3)= 16.266$ at $p = .001$, revealing three multivariate outliers in the perspective variable only. These multivariate outliers were modified by winsorizing (Field, 2013). After winsorizing, a Mahalanobis Distance was 15.649 indicated. Table 3 show a series of Pearson correlations between DVs demonstrating moderate correlations between variables, indicating this assumption lack of multicollinearity was met. Finally, the interaction between the IVs and covariate were not significant for responsibility $F(3,314) = .284, p = .595$, perspective $F(3,314) = .119, p = .731$ or temperance $F(3,314) = 2.252, p = .134$ between country and age. Therefore the assumption
of homogeneity of regression slopes were satisfied, and inspection of scatter plots show an approximately linear relationship between DVs, suggesting that the assumption of linearity has also been satisfied.

Table 3

*Pearson Correlations, Means and Standard Deviations for factors of Psychosocial Maturity: Responsibility, Perspective and Temperance.*

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Responsibility</td>
<td>1.0</td>
<td></td>
<td></td>
<td>3.43</td>
<td>.64</td>
</tr>
<tr>
<td>2. Perspective</td>
<td>.351</td>
<td>1.0</td>
<td></td>
<td>3.33</td>
<td>.69</td>
</tr>
<tr>
<td>3. Temperance</td>
<td>.344</td>
<td>.299</td>
<td>1.0</td>
<td>3.50</td>
<td>.76</td>
</tr>
</tbody>
</table>

Based on the homogeneity of variance-covariance matrix, a significant Box’s M value indicated that this assumption was violated $F(6, 41575.54) = 74.27, p = .001$. According to Field (2013) Box’s M is a highly sensitive test that can generally be disregarded when the sample sizes are equal. Here, the sample sizes are unequal, because probability values yielded for responsibility and temperance are likely to be conservative, due to the US sample size being larger, and producing the larger variances and co-variances (Table 4 and Table 5), power will be diminished (Finch, 2005). Therefore significant findings can be trusted (Tabachnick & Fidell, 2012). However, perspective has larger variances in the smaller Australian sample, so any significant differences must be interpreted with caution. Notably, the author also conducted a random sample with equal sizes from the US, in an attempt to resolve violated Box’s M (Field, 2013 and Tabachnick & Fidell, 2012). However, this failed to resolve violated assumptions of the homogeneity of variance-
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covariance and produced very similar outcomes (see Appendix I for random sample). As
such the original analyses are presented here.

Further Levene’s test of homogeneity of variance was significant for responsibility,
perspective and temperance (see Table 5), indicating that variances of all three variables
were not homogenous. Inspection of the SDs (see Table 5) shows that none of the largest
SDs were more than four times the size of the corresponding smallest, suggesting that a
MANOVA would be robust (Howell, 2012). According to Field (2013), large samples can
produce significant Levene’s results for unimportant effects, but when the sample size are
large (over 30), violations of Levene’s test should not be a major concern. Nonetheless,
caution should be exercised in interpreting results.

Table 4

*Covariance Matrix*

<table>
<thead>
<tr>
<th>Group</th>
<th>Responsibility</th>
<th>Perspective</th>
<th>Temperance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Responsibility</td>
<td>.090</td>
<td>.088</td>
</tr>
<tr>
<td></td>
<td>Perspective</td>
<td>.088</td>
<td>.774</td>
</tr>
<tr>
<td></td>
<td>Temperance</td>
<td>.034</td>
<td>.123</td>
</tr>
<tr>
<td>US</td>
<td>Responsibility</td>
<td>.458</td>
<td>.137</td>
</tr>
<tr>
<td></td>
<td>Perspective</td>
<td>.137</td>
<td>.324</td>
</tr>
<tr>
<td></td>
<td>Temperance</td>
<td>.204</td>
<td>.190</td>
</tr>
</tbody>
</table>

Note. N= 269 US, N= 49 Australian.

A MANCOVA was conducted to test whether individuals would differ on
responsibility, perspective and temperance levels, based on country of origin, while
controlling for age. Results indicated that age was not significantly related to
psychosocial maturity overall $F(3,313)= .91, p=.437$, partial $\eta^2=.009$. There was a
significant effect for country, Pillai’s trace $F(3,313) = 21.31, p = .001$. The multivariate effect size was estimated at partial $\eta^2 = .170$, which implies that 17% of the variance in the canonically derived psychosocial maturity variable could be accounted for by country of origin.

Individual ANCOVA’s were then conducted to follow-up the MANCOVA. Using the Bonferroni method of adjusting Type I error for multiple comparisons, each alpha level of .05 was divided by the number of tests, resulting in an adjusted alpha level of .017. Table 5 shows results of ANCOVAs with statistically significant country effects for responsibility and perspective, but no significant country effects were noted for temperance.

**Table 5**

*One way ANOVA with Psychosocial factors as Dependant Variables and Country as the Independent Variable.*

<table>
<thead>
<tr>
<th></th>
<th>Levene’s</th>
<th>ANOVA</th>
<th>Australia</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F(1,315)$</td>
<td>$p$</td>
<td>$F(1,315)$</td>
<td>$p$</td>
</tr>
<tr>
<td>Responsibility</td>
<td>24.83</td>
<td>.001</td>
<td>8.18</td>
<td>.005</td>
</tr>
<tr>
<td>Perspective</td>
<td>21.15</td>
<td>.001</td>
<td>34.01</td>
<td>.001</td>
</tr>
<tr>
<td>Temperance</td>
<td>7.63</td>
<td>.006</td>
<td>5.22</td>
<td>.023</td>
</tr>
</tbody>
</table>

Note. $N = 315$, $\eta^2 = \text{partial eta squared}$

Bonferroni adjusted alpha level of .017

Due to the unequal group sizes in this study, and the potential for bias in the MANCOVAs results (Vallejo, 2012), a non-parametric test was also run as a
sensitivity test (Appendix H). According to Finch (2005), non-parametric tests usually outperform parametric tests when covariance matrices are not equal, in both power and type 1 error. As such, the Mann Whitney U test was conducted, as the homogeneity of variance-covariance matrix assumption were not met (Field, 2013).

The Mann Whitney U tested for differences between ranked order of the samples, and non-parametric Levene’s tests were also performed on ranked data. Results revealed non-significant findings for perspective $F(1,319)= 3.40, p=.066$, and temperance $F(1,319)= 3.47, p=.063$ satisfying the Homogeneity of Variance-Covariance assumption. But responsibility was significant $F(1,319)= 15.79, p=.001$ violating this assumption.

Figure 1

Ranked Median Scores for Responsibility, Perspective and Temperance.

Results indicated that responsibility was significantly lower for Australian youth relative to the US $U=4332.00, z= -3.90, p=.001$, two tailed $r= -.27$, and that Australian youth were significantly lower than US youth on perspective $U=3784.00, z= -4.82, p=.001$, two tailed $r= -.27$. However, results indicated a non-significant
finding for temperance $U = 7606.00, z = .043$, two tailed $r = .10$, see Figure 1 for ranked median scores.

**Discussion**

The present study reveals significant differences in psychosocial maturity between older adolescents from two different western cultures. This study was a preliminary examination of differences in psychosocial maturity according to cultural context. The current-findings suggest that adolescents from Australia and the US may be differently affected by psychosocial influences. Specifically, results indicate that older US adolescents exhibit significantly higher psychosocial maturity overall, demonstrated through the means of scores for responsibility, perspective and temperance, compared to older Australian adolescents. Further, US adolescents demonstrated significantly higher levels of both responsibility and perspective, compared to older Australian adolescents, although this significant result for perspective does require caution in its interpretation. No significant differences were found between older Australian and US adolescents on temperance. Results from the current study suggest that the cultural context may help to shape aspects of psychosocial maturity, and thus highlight the need for further longitudinal research studies on psychosocial maturity across different nationalities and cultures.

**Psychosocial Maturity.** Given differences in cultural context it was hypothesized that older Australian adolescents would demonstrate lower psychosocial maturity overall, compared to US adolescents. In line with this hypothesis, results showed that older Australian adolescents did demonstrate significantly lower levels of psychosocial maturity overall, even with group differences in age accounted for. Because psychosocial differences were not attributable to age disparities, differences
in decision making were likely due to cultural differences. Current findings emphasise the importance of the context in which the development of psychosocial maturity takes place, and the influence different settings may have on adolescents’ decision making (Steinberg, 2010).

More broadly, cultural homogeneity between these two western cultures, Australia and the US, cannot be assumed (Bornstein, 2013; Stevenson-Hinde, 1998). Recent literature has demonstrated through cross-sectional studies that overall psychosocial maturity becomes more stable at age 21 in the US, at which point psychosocial maturity among older adolescents is comparable to adult maturity (Modecki, 2008). However, specific aspects of psychosocial maturity appear to follow different developmental timelines. Specifically, Modecki (2008) states that in the US, the development of responsibility and perspective both tend to stabilise around 18 years, whilst temperance generally develops more gradually into the mid-twenties. But in this study older Australian adolescents showed significantly lower psychosocial maturity overall, relative to their US counterparts. Thus these data suggests that psychosocial maturity may not stabilise around 21 years for Australians, and instead may stabilise later in development.

**Responsibility.** As noted earlier, responsibility is the formation of independence and autonomy with a focus on vulnerability to social influences and self-reliance (Cauffman & Steinberg, 2000). In this study, a second hypothesis was that older Australian adolescents would show lower levels of responsibility compared to US adolescents. As expected, results showed that older Australian adolescents indeed demonstrated significantly lower levels of responsibility.
Cultural norms in living arrangements may play a role in shaping responsibility levels in older adolescents. A potential explanation for lower responsibility in older Australian adolescents, may be the differing opportunities for real world decision making experienced compared to US adolescents. During adolescence, experiences that allow independence and autonomy in decision making foster greater responsibility (Leung et al. 1998). Living arrangements extrapolated from country norms suggest that during older adolescence many Australian university students continue to live at their family home (Australian Bureau of Statistics, 2006-2007; Cobb-Clark, 2008), where as many US students opt to live away from home on campus (Goldscheider & Goldsheider, 1994; Pryor et al., 2012). Consequently, older Australian adolescents may shoulder less decision making responsibility in their normal everyday activities. By continuing to live with their parents, Australian adolescents may lack experience taking responsibility for simple household duties such as doing laundry, making meals or paying for their own bills. As a result, the Australian students’ context may provide fewer opportunities for day to day practical decision making. Whereas, US adolescents who move out of the family home and live on campus, may be exposed to a greater range of daily decisions and experiences that facilitate their development of responsibility. On campus living arrangements, which are the norm among US students may allow for greater opportunities to experience independent and responsible decision making.

Differences between Australian and the US, in cultural and social norms play a large role in guiding parents and adolescents as to when an adolescent moves out of the family home (Cobb-Clark, 2008). For example, some research indicates that US mothers generally promote independence and autonomy of decision making in their children (Bornstein, 2013). According to Arnett (2000), research on family
relationships has suggested that in the US, situations where older US adolescents maintain physical proximity to their parents, may reduce the quality of the child / parent relationship. Parental preferences and factors such as these, likely contribute to cultural and social norms, that influence older US adolescents to leave home in favour of on campus living. Notwithstanding the potential benefits for university students to leave home, it appears that living away from home provides older US adolescents’ opportunities to increase self-reliance and practice making autonomous decisions. Therefore US adolescents are likely to be exposed to greater opportunities, gaining experience through actual decision making situations, which may help to explain higher levels of responsibility compared to Australians. Furthermore, where previous research suggests that older US adolescent responsibility levels stabilise around 18 years of age (Modecki, 2008), differences in the current findings suggest that older Australian adolescents’ levels of responsibility stabilise later in development.

**Perspective.** Perspective is the ability to analyse decisions, and the capacity to appreciate another person’s point of view. Third, it was hypothesized that older Australian adolescents would have lower levels of perspective compared to older US adolescents. As expected, results showed that older Australian adolescents demonstrated significantly lower levels of perspective. Thus, Australian adolescents may have a reduced ability to analyse decisions, which may potentially lower capacity to appreciate another’s point of view compared to older US adolescents. Notably, Modecki (2008) compared older US adolescents, young adults (ages 22 – 27), and adults (ages 28 – 40). Results revealed no significant differences between the three groups. However, a follow up Australian study found that perspective levels for 18 year olds were significantly lower compared to 25 year olds (Bryann-Hancock &
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Casey, 2010). Thus, comparing these two separate studies provides a preliminary indication that older Australian adolescents may indeed not yet be mature, whereas older US adolescents may be. The current finding reinforces the differences found in perspective levels for older US adolescents in Modecki (2008), and older Australian adolescents in Bryann-H Hancock and Casey (2010). This is demonstrated by Australians’ significantly lower perspective levels compared to US adolescents.

The social context in which both Australian and US adolescents are raised is unique, therefore, parental influences guided by culture may change adolescent development (Blewitt & Broderick, 1999; Erikson, 1968). As such, dynamic interactions between the adolescent and parent, are likely contributing to differences in aspects of psychosocial maturity. Even in these two similar western countries, the socialization process is shaped by their different cultural contexts (Baumrind, 1996; McNaughton, 1996), and it is the family home where rules such as moral principles, respect for others and fairness are first learned through social interactions (Baumrind, 1996; Cripps & Zyromski, 2009). The parent’s perspective also strongly influences the developing individual’s perspective (Baumrind, 1996). It is likely that significant differences in perspective found here, are shaped in part by the adolescent’s parents’ perspective.

According to Cauffman & Steinberg (1995), perspective develops through experience, and youth may display different levels of perspective depending on situational context. It could be the case that older Australian adolescents in this sample, have experienced fewer situations requiring autonomous decision making than their US counterparts. In Modecki’s (2008) study, perspective levels were reasonably stable for US adolescents over 18 years of age. However, results from this study indicate that perspective levels for Australians at 20 years of age, are still not at a level comparable
to their US counterparts at 18. This is demonstrated by older Australian adolescent’s lower scores on measures of self-reliance, consideration of future consequences and self-restraint (Cauffman et al, 1999). Thus, the current findings suggest that responsibility levels for older Australian adolescents, may only become stable beyond the age of 20 years.

Importantly, significant group differences on perspective need to be interpreted with caution. As discussed previously, the homogeneity of variance-matrix assumption was violated, most likely because the sample sizes were unequal. While the sample sizes were unequal for all variables, it was only in perspective, that probability values with larger variances and covariances were present in the smaller Australian sample. This potentially makes the significant finding for perspective too liberal (Finch, 2005). However, this sample consisted of 321 participants in total and maintained a minimum of 46 cases in each cell. Therefore according to Tabachick & Fidell (1989), the central limit theorem suggests this finding should be robust to violations of normality.

Notwithstanding, a non-parametric test was used as a sensitivity test to support significant parametric findings for perspective. Because the Mann Whitney U, tests the sum of ranks in the group containing the fewest participants, it is not affected by unequal sample sizes (Field, 2013). A significant finding through the Mann Whitney U test for perspective, replicated results from the MANCOVA. The validity of this sensitivity test is further supported through a satisfied homogeneity of variance assumption, which was shown to be met through an equivalent non-parametric Levene’s test for perspective.
Temperance. Fourth, it was hypothesized that older Australian adolescents would show higher levels of temperance compared to older US adolescents. However, no significant differences were found. Both older Australian and US adolescents demonstrated comparable abilities in temperance, such that they were comparable in evaluating situations before acting, and regulating impulsiveness and sensation seeking (Bryann-Hancock & Casey, 2011).

Research on impulsivity and sensation seeking has frequently demonstrated adolescents to be more impulsive than adults (Hayes, Smart, Toumbourou & Sanson, 2004). Impulsiveness often impedes careful consideration of potential consequences, particularly if the adolescent has opportunities to participate in situations that encourage impulsive behaviour (Morey & Dansereau, 2010, Patock et al., 2010). As a normal part of adolescence, spending less time with family and more time with peers can influence behaviour (Hayes et al., 2004; Sullivan, 2006). Specifically, time away from parents allows less parental restriction, and greater opportunity for experience, resulting in some adolescents inevitably exploring high risk behaviours that are associated with high impulsivity (Hayes et al., 2004; Morey & Dansereau, 2010). Both Australian and US adolescents are susceptible to peer group influences that contribute to behaviour (Sullivan, 2006), including risky decisions that are impulsive, and often made in group situations (Morey & Dansereau, 2010). Adolescents also possess a strong desire to belong and obtain peer approval, contributing further to their vulnerability to peer pressure (Erikson, 1968; Collins & Lennings, 2013; Kiran-Esan, 2012; Petito & Cummis, 2000).

An example of adolescent high risk behaviour that is often linked to impulsivity is heavy alcohol consumption, or binge drinking (Morey & Dansereau, 2010; Patock et al., 2010). Both older Australia and US adolescents’ participation in
the consumption of excessive alcohol and drug use is well documented, both on US college campuses’ (Morey & Dansereau, 2010; Perkins, 1997) and in Australian universities (Hayes et al., 2004). While many older US adolescents who live on campus may have more experience with decision making responsibilities than those who live at home, they may also have a higher degree of exposure to social peer influences, and have more opportunities to participate in risky and impulsive behaviour, such as alcohol and drug use (Lorant, Nicaise, Sato and d’Hoore, 2013; Perkins, 1997; Steinberg, 2010). Comparatively, in Australia, cultural and social norms influence alcohol consumption. Many Australian parents believe that it is acceptable for their offspring to consume alcohol before the legal drinking age of 18 years, underestimating adolescent alcohol use. Influenced by parents, peers, and the law in terms of a relatively low legal drinking age, most Australian adolescents consider alcohol consumption normal (Hayes et al., 2004). Consequently, Hayes et al., (2004) states that many older Australian adolescents regularly consume alcohol at risky levels.

According to Hayes et al (2004), a review of literature suggests that alcohol consumption patterns between Australian and US adolescents are not dissimilar. This finding illustrates that both older Australian and US adolescents are engaging in similar sensation seeking behaviours, which may account for the similar temperance levels found in the current study. Results show that older Australian and US adolescents have similar abilities in temperance, which implies that both groups are likely evaluating situations and regulating impulsiveness at a similar level. Therefore, the current findings could suggest that the development of temperance is universal across western cultures, and they highlight the importance of looking at the individual
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factors of psychosocial maturity separately, since the finding on temperance differed from the trend in the other aspects of psychosocial maturity in older adolescents.

Limitations

Results from this study revealed important differences in psychosocial maturity between older Australian and US adolescents. However, this study is not without its limitations. First, the present study was based on only a small sample of Australian students, a larger sample size would have been preferable in order to ensure the sample adequately represented the larger population and optimum power to detect effects. Secondly, this study cannot describe reasons for differences in psychosocial maturity, thus additional measures are required for future research. To gain a clearer understanding of how cultural context influences psychosocial maturity, future research should measure adolescent perceived parental styles, peer norms, living arrangements, as well as ethnicity, intelligence and socioeconomic status.

Third, the sample consisted of undergraduate psychology students, which represents both a weakness and a strength of the study. As participants are university and college students, findings may not be generalizable to broader groups of adolescents. However, both groups being made up of Psychology students is a strength of the study, because the populations are very similar making them comparable and may reduce confounding factors.

Fourthly, participants from Australia and the US experienced different settings during data collection. For instance, Australian participation was completed through an online survey, with no face to face contact with researchers, whereas the US participants completed their survey in person. The in person setting may have been beneficial to US participants, in helping them to understand the requirements of what
was expected, as they could easily ask the researcher questions if they needed clarification. However, Australian participants did have personal access to the researcher, if they required additional guidance. Fifth, the US sample was predominantly white Caucasian (Modecki, 2008). This information is unknown for the Australian sample, making it difficult to conclude similarity in ethnicity between samples. At the same time it is expected that the Australian sample were from a predominately Caucasian background based on the university’s profile, which is predominately Caucasian and includes only 9% of overseas students (Murdoch, 2014).

Finally, the cross-sectional nature of this study in itself limits the interpretation of these findings, these results are a snap shot in time of older adolescent psychosocial maturity and findings cannot inform any conclusions as to development or changes over time.

Implications of study

Despite the study’s limitations, the results reveal important findings. Significant differences in psychosocial maturity between older adolescents from Australia and the US were found, including significant difference in aspects of psychosocial maturity; responsibility and perspective. Australia and the US are often described and considered as culturally similar, and consequently these two countries are often expected to display similar developmental outcomes (Bornstein, 2013; Barnhart et al., 2013; Russell, Hart, Robinson and Olsen, 2003). Yet, current findings indicate that older Australian and US adolescents aged between 17 and 22 years demonstrate different trajectories in psychosocial maturity. For that reason, this study contributes to existing literature on psychosocial maturity, and demonstrates a first step in recognising the role of cultural context in the variations between similar western cultures.
In the present study, significant differences seen between older Australian and US adolescents highlight the need for caution when interpreting US studies on psychosocial maturity, not just in Australia, but in other western cultures too. For example, where US based findings on psychosocial maturity are used in Australian youth justice policy, cultural differences should be acknowledged. Findings from this study may be informative to both researchers and policy makers, and may contribute to existing literature addressing adolescent culpability, by adding weight to that argument that age alone is not an appropriate indicator of psychosocial maturity. Further, this research may be of interest to those advocating raising the legal drinking age in Australia above 18 years. This study highlights the influence of the cultural context on psychosocial maturity, suggesting that a second wave of longitudinal research is warranted to better understand the nuanced role of culture in the development progression of psychosocial maturity.

**Recommendations**

Future studies need to consider the cultural context through a longitudinal approach to better understand the development of psychosocial maturity. Larger samples that are drawn from a diverse background would enable interpretations of findings that are generalisable to Australian and US adolescents.

Investigation of different western cultures should include a comparisons of Australian and US participants at different ages, to identify the developmental progression of psychosocial maturity between these cultures. Importantly, measures of adolescent perceived parental styles and peer norms focusing on living arrangements, are required to ascertain potential cultural causes for differences in psychosocial maturity. Measures of ethnicity, intelligence and socioeconomic status
would also be beneficial to gain a clear understanding of potential differences between cultures, and inclusion of these factors in future research is needed (Blewitt & Broderick, 1999; Reppucci, 1999).

This study utilized proven measures in psychosocial maturity, and revealed significant differences between older adolescents from two western countries. Overall, older US adolescents were more socially and emotionally mature compared to Australians. Given cultural differences experienced by adolescents between these two western countries, such as parental influences, adolescent living arrangements and peer contact, it is reasonable to suggest that differences in opportunities to experience responsible and autonomous decision making may have facilitated differences in the development of psychosocial maturity. As such, this study fills an important gap in the literature, extending on Steinberg’s (2010) view that different settings may result in different maturity outcomes. The current findings reinforce the argument that psychosocial maturity is situation specific, and emphasise the influence of the cultural context on psychosocial maturity (Cauffman & Steinberg, 1995).
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Appendices

Appendix A  Subject pool advertisement
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    B2 Perspective
    B3 Responsibility
Appendix C  Research Ethics Approval
Appendix D  Journal Instructions for Authors: Law and Human Behavior

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Appendix F  Output ANCOVA
Appendix G  Output for MANCOVA
Appendix H  Output and Data Mann Whitney U
Appendix I  Output and Data Random Equal Sample
Appendix A

Subject Pool Advertisement

Project Name: Ethics permit # - Testing age limits defined by law: The moral capacity and psychosocial maturity of children vs adults

Description: We are testing the legal age limits of criminal responsibility and need an adult comparison sample. If you are between the ages of 18 and 21 years and a student in the School of Psychology and Exercise Science you can participate in this research. Participating involves completing an online survey (link below) which will ask different questions regarding psychosocial maturity and moral development. Some of these require you to indicate a scaled response, others require you to write short answers. If you participate in this research you can chose to either receive 1.5 hours of subject pool credit or go into the prize draw for a $150 Coles/Myer voucher. The survey is completely anonymous. Although the findings of the survey may be published, none of the information you provide can be linked back to you as an individual. Your participation is voluntary and you can withdraw from the study at any time by not completing the questionnaire. Please note that as this questionnaire is anonymous you cannot withdraw from participation once it has been submitted. Results of this study will be published on the School of Psychology and Exercise Science by December 2014. If, after reading the information above, you agree to continue with the survey please complete it by following this link to survey here. If you have any questions about the study Please contact Dr Kathy Modecki on 9360 2986 or k.modecki@murdoch.edu.au OR Corey Neira on (08)9360 7382 or c.blomfield@murdoch.edu.au.
Appendix B
Psychosocial Maturity Survey

QUESTIONNAIRE BOOKLET

This is a booklet of questionnaires we would like you to fill in.

Please try and complete all of the questions, but if there are some questions you do not want to answer, feel free to skip over them and continue on.

If at any time you want to stop filling in the questionnaires, feel free to do so and you do not have to tell us why.

Remember, this is NOT a test. You will not be marked. We are asking you what you do and what you are like, not what you think you should do or be like.

Please do not write your name on the questionnaires. This means you can be as honest as possible as we won’t know who has written what.

Please fill in the following about yourself.

AGE: __________________________________________________________________________

DATE OF BIRTH: ______________________________________________________________________

GENDER: Male / Female _____________________________________________________________________

OCCUPATION: _________________________________________________________________________

LEVEL OF EDUCATION: ____________________________________________________________________

***NOTE: There are questions on BOTH sides of the paper***

INSTRUCTIONS - In this questionnaire, we want to find out about the things you think are important for people to do, and why you think these things (like keeping a promise) are important.

Please try to help us understand your thinking by WRITING OR SAYING AS MUCH AS YOU CAN TO EXPLAIN – EVEN IF YOU HAVE TO WRITE OR SAY YOUR REASONS MORE THAN ONCE. Don’t just write or say “same as before”. If you can explain better or use different words to show what you mean, that helps us even more.

Please answer all the questions, especially the “WHY” questions.
1. Think about when you’ve made a promise to a friend of yours. How important is it for people to keep promises, if they can, to friends?

Circle one: Very Important Important Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?

(Whichever one you circled/said).

2. What about keeping a promise to anyone? How important is it for people to keep promises, if they can, even to someone they hardly know?

Circle one: Very Important Important Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?

(Whichever one you circled/said).
3. How about keeping a promise to a child? How important is it for people to keep promises, if they can, to their children?

Circle one:  Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?
(Whichever one you circled/said).

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4. In general, how important is it for people to tell the truth?

Circle one:  Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?
(Whichever one you circled/said).

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
5. Think about when you’ve helped your mother, father and/or guardian. How important is it for children to help their parents/guardians?

Circle one: Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?

(Whichever one you circled/said).

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

6. Let’s say a friend of yours needs help as their life is in danger, and you’re the only person who can save him or her. How important is it for a person (without losing his or her own life) to save the life of a friend?

Circle one: Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?

(Whichever one you circled/said).

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
7. What about saving the life of anyone? How important is it for a person (without losing his or her own life) to save the life of a stranger?

Circle one: Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?
(Whichever one you circled/said).

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

8. How important is it for a person to live even if that person doesn’t want to?

Circle one: Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?
(Whichever one you circled/said).

________________________________________________________________________

________________________________________________________________________

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________________________________________________________________________
9. How important is it for people not to take things that belong to other people?

Circle one: Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?
(Whichever one you circled/said).

________________________________________________________________________
________________________________________________________________________
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10. How important is it for people to obey the law?

Circle one: Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?
(Whichever one you circled/said).

________________________________________________________________________
________________________________________________________________________
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________________________________________________________________________
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________________________________________________________________________
11. How important is it for judges to send people who break the law to jail?

Circle one:  Very Important  Important  Not Important

WHY IS THAT VERY IMPORTANT / IMPORTANT / NOT IMPORTANT?

(Whichever one you circled/said).

_____________________________________________________________________
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_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
Appendix B1: Temperance

INSTRUCTIONS: The purpose of these next questions is to understand what you are usually like or what you have usually felt, not just during the past few weeks but over the past year or more. Please read each sentence carefully and select the number that best describes you.

For each sentence, in Part I, decide whether it is (1) FALSE or mostly false for you; (2) SOMEWHAT FALSE (i.e., more false than true); (4) SOMEWHAT TRUE (i.e., more true than false); or (5) TRUE or mostly true for you. If you can’t really say it’s more true or more false, choose (3) NOT SURE.

PART I

<table>
<thead>
<tr>
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<th>1</th>
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<tr>
<td></td>
<td>False</td>
<td>Somewhat False</td>
<td>Not Sure</td>
<td>Somewhat True</td>
<td>True</td>
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<td>6.</td>
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</table>

The next questions relate to how often you think, feel, or act a certain way. Again, we want to know what is usual for you even if it hasn’t happened in the past couple of days or last few weeks. After you read each sentence carefully, please choose how often it is true: (1) ALMOST NEVER or never, (2) NOT OFTEN, (3) SOMETIMES, or an average amount, (4) OFTEN, or (5) ALMOST ALWAYS or always.

<table>
<thead>
<tr>
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<tr>
<td></td>
<td>Almost Never</td>
<td>Not Often</td>
<td>Sometimes</td>
<td>Often</td>
<td>Almost Always</td>
</tr>
<tr>
<td>7.</td>
<td></td>
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<td>8.</td>
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<td>9.</td>
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<td>10.</td>
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<tr>
<td>11. I enjoy doing things for other people, even when I don’t receive anything in return.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I become “wild and crazy” and do things other people might not like.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I do things that are really not fair to people I don’t care about.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I will cheat on something if I know no one will find out.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. When I’m doing something for fun (for example, partying, acting silly), I tend to get carried away and go too far.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I make sure that doing what I want will not cause problems for other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I break laws and rules I don’t agree with.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. I like to do new and different things that many people would consider weird or not really safe.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Before I do something, I think about how it will affect the people around me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. If someone does something I really don’t like, I yell at them about it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. People can depend on me to do what I know I should.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. I lose my temper and “let people have it” when I’m angry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. I do things that I know really aren’t right.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. I say the first thing that comes into my mind without thinking enough about it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. I pick on people I don’t like.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. I try very hard not to hurt other people’s feelings.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. I stop and think things through before I act.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. I say something mean to someone who has upset me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. I make sure I stay out of trouble.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. When someone tries to start a fight with me, I fight back.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
**Appendix B2: Perspective**

For each of the statements below, please indicate whether or not the statement is characteristic of you by circling one number.

<table>
<thead>
<tr>
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<th>3</th>
<th>4</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Does not describe me at all</strong></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td><strong>Describes me very well</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I think about how things might be in the future, and try to influence those things with my everyday behaviour. 1 2 3 4 5
2. I often do things that don’t pay off right away but will help in the long run. 1 2 3 4 5
3. I only worry about immediate problems, because the future will take care of itself. 1 2 3 4 5
4. I decide whether or not to do something based on only the immediate consequences. 1 2 3 4 5
5. My own convenience is an important factor in my decisions and actions. 1 2 3 4 5
6. I will give up my happiness now in order to get what I want in the future. 1 2 3 4 5
7. It is important to consider the bad side of a decision or action, even if it won’t happen for many years. 1 2 3 4 5
8. It is more important to do things that will have a big effect in the future than to do things that have smaller results right away. 1 2 3 4 5
9. I don’t worry about big problems that might happen in the future because these problems will be solved before they become disasters. 1 2 3 4 5
10. I think giving things up now to avoid future problems is not important because the problems can be dealt with later. 1 2 3 4 5
11. I often do things that pay off right away because I know I can take care of future problems later. 1 2 3 4 5
12. My everyday activities are more important than things that won’t affect me for a long time. 1 2 3 4 5
1. Why do people brush their teeth?

2. Why should people eat vegetables?

3. Why do cars have seatbelts?

4. What should you do if you see thick smoke coming from the window of your neighbour’s house?

5. What are you supposed to do if you find someone’s wallet or purse in a store?

6. Why is it important for police to wear uniforms?
7. Tell me some reasons that you should turn off lights when no one is using them.

8. What is the thing to do if a boy or girl much smaller than yourself starts to fight with you?

9. Why is it important to apologise when you know you’ve hurt someone?

10. What are the advantages of exercising and being active?

11. What are some advantages of having public libraries?

12. Why is it important for the government to inspect meat before it is sold?
13. Tell me some advantages of getting the news from a newspaper rather than from a television news program

14. Why is it important to grant authors copyright on books and inventors patents on inventions?

15. Why should a promise be kept?

16. Why do doctors do further study after practicing medicine for a while?

17. Why do we put stamps on letters?

18. Why is it important to keep one company from owning all of the newspapers and radio and TV stations in a single city?
19. Why is freedom of speech important in a democracy?

20. What are some problems with rapid changes in science and technology?

21. How do communication tools (such as TV, radio and internet) threaten dictatorships?
Appendix B3: Responsibility

Try to go through the next questionnaire quickly, without spending too much time on any one question. Please answer the questions in order. Remember, this is not a test. There are no right or wrong answers. We are interested in your opinions. Feel free to answer exactly the way you feel.

<table>
<thead>
<tr>
<th></th>
<th>Agree Strongly</th>
<th>Agree A Little</th>
<th>Disagree A Little</th>
<th>Disagree A Lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>It’s not very practical to try to decide what kind of job you want because that depends so much on other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>In a group I prefer to let other people make the decisions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>You can’t be expected to make a success of yourself if you had a bad childhood.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>Luck decides most things that happen to me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>5.</td>
<td>The main reason I’m not more successful is that I have bad luck.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Someone often has to tell me what to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>When things go well for me, it is usually not because of anything I myself actually did.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>8.</td>
<td>I feel very uncomfortable if I disagree with what my friends think.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>9.</td>
<td>It is best to agree with others, rather than say what you really think, if it will keep the peace.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>10.</td>
<td>I don’t know whether I like a new outfit until I find out what my friends think of it.</td>
<td>1</td>
<td>2</td>
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<tr>
<td>11.</td>
<td>When a job turns out to be much harder than I was told it would be, I don’t feel I have to do it perfectly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>12.</td>
<td>I find it hard to stick to anything that takes a long time to do.</td>
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<td>2</td>
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<td>13.</td>
<td>I hate to admit it, but I give up on my work when things go wrong.</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>14.</td>
<td>I seldom get behind in my work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>I tend to go from one thing to another before finishing any one of them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Agree Strongly</td>
<td>Agree A Little</td>
<td>Disagree A Little</td>
<td>Disagree A Lot</td>
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<tr>
<td>16</td>
<td>I often don’t finish work I start.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
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<tr>
<td>17</td>
<td>I often leave my homework unfinished if there are a lot of good TV shows on that evening.</td>
<td>1 2 3 4</td>
<td></td>
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<tr>
<td>18</td>
<td>I believe in working only as hard as I have to.</td>
<td>1 2 3 4</td>
<td></td>
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<tr>
<td>19</td>
<td>It’s more important for a job to pay well than for a job to be very interesting.</td>
<td>1 2 3 4</td>
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<tr>
<td>20</td>
<td>Very often I forget work I am supposed to do.</td>
<td>1 2 3 4</td>
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<td>21</td>
<td>I can’t really say what my interests are.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
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<tr>
<td>22</td>
<td>I never seem to feel the same about myself from one week to the next.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
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<tr>
<td>23</td>
<td>Most people are better liked than I am.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>My life is pretty empty.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>I can’t seem to keep people as friends for very long.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>I’m acting like something I’m not a lot of the time.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>I never know what I’m going to do next.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>I change the way I feel and act so often that I sometimes wonder who the “real” me is.</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Nobody knows what I’m really like.</td>
<td>1 2 3 4</td>
<td></td>
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<tr>
<td>30</td>
<td>I am not really accepted and liked.</td>
<td>1 2 3 4</td>
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</table>
Appendix C

Research Ethics Approval

Thursday, 19 September 2013

Dr Kathryn Modecki
School of Psychology and Exercise Science
Murdoch University

Dear Kathryn,

Project No. 2013/173
Project Title Testing age limits defined by law: The moral capacity and psychosocial maturity of children vs adults

Thank you for addressing the conditions placed on the above application to the Psychology Expedited Subcommittee of the Murdoch University Human Research Ethics Committee. On behalf of the Committee, I am pleased to advise the application now has:

OUTRIGHT APPROVAL

Approval is granted on the understanding that research will be conducted according the standards of the National Statement on Ethical Conduct in Human Research (2007), the Australian Code for the Responsible Conduct of Research (2007) and Murdoch University policies at all times. You must also abide by the Human Research Ethics Committee’s standard conditions of approval (see attached). All reporting forms are available on the Research Ethics website.

I wish you every success for your research.

Please quote your ethics project number in all correspondence.

Kind Regards,

[Signature]

Dr. Erich von Dietze
Manager of Research Ethics

cc: Corey Neira and Johnelle Wilkins
School of Psychology – Dr Anne Pedersen

CRICOS Provider Code: 00125J
ABN 61 616 369 313
Human Research Ethics Committee: Standard Conditions of Approval

a) The project must be conducted in accordance with the approved application, including any conditions and amendments that have been approved. You must comply with all of the conditions imposed by the HREC, and any subsequent conditions that the HREC may require.

b) You must report immediately anything which might affect ethical acceptance of your project, including:
   - Adverse effects on participants
   - Significant unforeseen events
   - Other matters that might affect continued ethical acceptability of the project.

c) Where approval has been given pending copies of documents such as letters of support / consent from other organisations or approvals from third parties, these must be provided to the Research Ethics Office before the research may commence at each relevant location.

d) Proposed changes or amendments to the research must be applied for, using an Amendment Application form, and approved by the HREC before these may be implemented.

e) An annual Report must be provided by the due date specified each year (usually the anniversary of approval) for the project to have continuing approval.

f) A closure report must be provided at the conclusion of the project.

g) If, for any reason, the project does not proceed or is discontinued, you must advise the committee in writing, using a Closure Report form.

h) If an extension is required beyond the approved end date of the project, an extension application should be made allowing sufficient time for its consideration by the committee. Extensions cannot be granted retrospectively.

i) You must advise the HREC immediately, in writing, if any complaint is made about the conduct of the project.

j) Any equipment used must meet current safety standards. Purpose built equipment must be tested and certified by independent experts for compliance with safety standards.

k) Higher degree students must have both Candidacy and Program of Study approved prior to commencing data collection.

l) You must notify the Research Ethics Office of any changes in contact details including address, phone number and email address.

m) The HREC may conduct random audits and / or require additional reports concerning the research project.

Failure to comply with the National Statement on Ethical Conduct in Human Research (2007) and with the conditions of approval may result in the suspension or withdrawal of approval for the project.

The HREC seeks to support researchers in achieving strong results and positive outcomes.
The HREC promotes a research culture in which ethics is considered and discussed at all stages of the research.
If you have any issues you wish to raise, please contact the Research Ethics Office in the first instance.
Appendix D

Journal Instructions for Authors

Law and Human Behavior
Editor: Margaret Bull Kovera
ISSN: 0147-7307
eISSN: 1573-661X
Published: bimonthly, beginning in February
ISI Impact Factor: 2.153
Law: 10 of 131
Read Sample Articles
Advertising Information
This journal is a publication of APA Division 41 (American Psychology-Law Society)

Prior to submission, please carefully read and follow the submission guidelines detailed below. Manuscripts that do not conform to the submission guidelines may be returned without review.

Submission

Law and Human Behavior® is now using a software system to screen submitted content for similarity with other published content. The system compares each submitted manuscript against a database of 25+ million scholarly publications, as well as content appearing on the open web.
This allows APA to check submissions for potential overlap with material previously published in scholarly journals (e.g., lifted or republished material). A similarity report will be generated by the system and provided to the Law and Human Behavior Editorial office for review immediately upon submission.
Submit manuscripts electronically (.rtf or .doc) through the Manuscript Submission Portal.
CONSIDERING THE CULTURAL CONTEXT

Margaret Bull Kovera
Professor of Psychology
John Jay College
City University of New York
445 W. 59th Street
New York, NY 10019

Email
Please supply complete contact information, including email addresses and fax numbers, for use by the editorial office and later by the production office. The majority of correspondence between the editorial office and authors is handled by email, so a valid email address is important to the timely flow of communication during the editorial process.

Masked Review Policy

Law and Human Behavior has in place a policy of masked review for all submissions. The cover letter should include all authors' names and institutional affiliations. Do not include any personal information (name, affiliation, etc.) anywhere in the manuscript or on the cover page. Every effort should be made to see that the manuscript itself contains no clues to the authors' identity.

Please ensure that the final version for production includes a byline and full author note for typesetting.

Manuscript Preparation

Prepare manuscripts according to the Publication Manual of the American Psychological Association (6th edition). Manuscripts may be copyedited for bias-free language (see Chapter 3 of the Publication Manual).

Review APA's Checklist for Manuscript Submission before submitting your article.

Double-space all copy. Other formatting instructions, as well as instructions on preparing tables, figures, references, metrics, and abstracts, appear in the Manual.

Below are additional instructions regarding the preparation of display equations, computer code, and tables.

Display Equations

We strongly encourage you to use MathType (third-party software) or Equation Editor 3.0 (built into pre-2007 versions of Word) to construct your equations, rather than the equation support that is built into Word 2007 and Word 2010. Equations composed with the built-in Word 2007/Word 2010 equation support are converted to low-resolution graphics when they enter the production process and must be rekeyed by the typesetter, which may introduce errors.

To construct your equations with MathType or Equation Editor 3.0:
- Go to the Text section of the Insert tab and select Object.
- Select MathType or Equation Editor 3.0 in the drop-down menu.

If you have an equation that has already been produced using Microsoft Word 2007 or 2010 and you have access to the full version of MathType 6.5 or later, you can convert this equation to MathType by clicking on MathType Insert Equation. Copy the equation from Microsoft Word and paste it into the MathType box. Verify that your equation is correct, click File, and then click Update. Your equation has now been inserted into your Word file as a MathType Equation.

Use Equation Editor 3.0 or MathType only for equations or for formulas that cannot be produced as Word text using the Times or Symbol font.

Computer Code
Because altering computer code in any way (e.g., indents, line spacing, line breaks, page breaks) during the typesetting process could alter its meaning, we treat computer code differently from the rest of your article in our production process. To that end, we request separate files for computer code.

**In Online Supplemental Material**

We request that runnable source code be included as supplemental material to the article. For more information, visit [Supplementing Your Article With Online Material](#).

**In the Text of the Article**

If you would like to include code in the text of your published manuscript, please submit a separate file with your code exactly as you want it to appear, using Courier New font with a type size of 8 points. We will make an image of each segment of code in your article that exceeds 40 characters in length. (Shorter snippets of code that appear in text will be typeset in Courier New and run in with the rest of the text.) If an appendix contains a mix of code and explanatory text, please submit a file that contains the entire appendix, with the code keyed in 8-point Courier New.

**Tables**

Use Word's Insert Table function when you create tables. Using spaces or tabs in your table will create problems when the table is typeset and may result in errors.

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All manuscripts must include an abstract containing a maximum of 250 words typed on a separate page. After the abstract, please supply up to five keywords or brief phrases.

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List references in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the References section. Examples of basic reference formats:

- **Journal Article:**

- **Authored Book:**

- **Chapter in an Edited Book:**

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For manuscripts rejected after peer review

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For rejected comments.

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Other Information

- Appeals Process for Manuscript Submissions
- Preparing Auxiliary Files for Production
- Document Deposit Procedures for APA Journals