Personality stability and change: An investigation of social identity processes

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Declaration

I declare that this thesis describes original work undertaken in the Research School of Psychology, at the Australian National University. Apart from support and advice provided by my supervisor Professor Kate Reynolds and my supervisory panel members, the ideas and research detailed in this thesis are solely mine, except where otherwise indicated. To the best of my knowledge, any theories or techniques that are not my own have been appropriately acknowledged and referenced within the text. I affirm that this thesis is in accordance with The Australian National University Guidelines for higher degree research.

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Abstract

Whether personality is stable or flexible, and whether it can shift as a function of environmental factors such as changes in people’s experiences, roles and social relations has been debated widely in personality and social psychology. Some personality researchers fiercely defend the idea that personality is genetically determined and relatively stable across situations, there is fluidity early in life but not later. There are other personality scholars who are interested in personality change and when and how it happens. Emerging empirical evidence suggests that age, life events, new roles, language and cultural change can be associated with significant personality change. Several theoretical frameworks have been proposed to address this personality variability across contexts. Commitment to social roles, or voluntary and repeated engagement in cultural practices can lead to personality change over time. Switching between role identities or cultural mindsets can also trigger personality variability across contexts. Coming from a social identity perspective, the present research argues that personality is not only an outcome of person factors in interaction with situations, but is related to meaningful group memberships and associated norms, values and beliefs which can shape the person and as these change, and identities change so to can personality processes. The constructs of identification and salience are both crucial in understanding how the group shapes who we are and in explaining variability in our self-concepts across contexts.

Across four studies, the present thesis aims to highlight the social identity perspective as an integrative framework in understanding personality variability, and to investigate the role of social identification and salience in explaining personality
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variability. The first study examined language effects on self-reported personality among bilingual Australian Chinese individuals (N = 24), and the role of identification in this cultural accommodation. Measures of Australian identification and Chinese identification, and personality were completed by the same individual across a short time frame in both English and Chinese. Language effects were evident on Extraversion which was significantly higher in the English language condition compared to the Chinese condition. Participants’ level of Australian identification significantly predicted both Extraversion and Neuroticism. This study indicates that social identification is related to personality responses. In the second study, the role of identification was explored in cultural frame switching. Sixty-two Australian Chinese bicultural individuals completed personality measures twice after being exposed to Australian cultural icons and Chinese cultural icons with the order of this priming counterbalanced. Participants reported higher levels of Openness after the Chinese cultural mindset priming compared to the Australian one, and both Australian and Chinese identification predicted personality dimensions. Both Study 1 and 2 provide evidence that is in line with predictions that social identification plays a role in personality responses. In Study 3 the role of identity was examined by manipulating whether Australian or Chinese social identity was made salient. The methodology also was improved through the inclusion of both self-report and behavioural ratings of personality. Results suggest that salient identity can impact on personality responses such that people’s self-definition and behaviour varies depending on which social self (Australian or Chinese) is salient in a given situation. In the final study, rather than utilising participants who had already acquired different national and ethnic identities (Australian and Chinese), the process of
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Acculturation and its impact on personality across time was assessed. New Zealand citizens (N = 2349) reported personality, ethnic identification and patriotism (as a proxy for national endorsement) each year over four phases of data collection. Results indicated that ethnic identification and patriotism predicted both baseline personality levels and its change over time. Over time those who highly endorsed New Zealand changed in ways that fitted with the typical personality profiles of New Zealanders (as Westerners). This pattern was not observed for those participants who highly identify with their Asian ethnic group.

Across these studies what we find is a pattern of results that is broadly consistent with hypotheses based on the social identity perspective. The importance of this work is that there is evidence of personality variability across contexts and that social identity processes impact on personality and behaviour. Not only does the thesis expand the social identity perspective to the domains of personality processes and cross-cultural psychology, it also is argued that this perspective offers a pathway to integrate existing theory and research on personality variability that has centred on life experiences and new roles, language and cultural mindsets. Another strength of the thesis is the diversity of methods that are used including within-participants designs, experimental manipulations and longitudinal four-wave survey. The theoretical and empirical implications of this research are presented in the final chapter, as well as recommendations for future research.
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Chapter 1: Personality variability: An overview

Have you had the experience of learning a second language? When you switch between the two or more languages that you speak, do you notice any differences in the way you express yourself? To what extent do you feel and behave consistently when switching between home and work settings? As a matter of fact, many people notice changes in their personality and behaviour when they switch between the languages they use or the social roles they take on. Our personal experiences suggest that personality is not always constant across all context, rather it is context dependent and can vary across situations. But how and why does this flexibility of personality happen? That is the main question that this thesis devotes to answer.

In the fields of personality, social psychology, and cross-cultural psychology these issues of personality stability and variability have been widely debated and there have been some recent developments. In social and cultural psychology researchers have been trying to explain variability in personality and the self-concept and to identify factors associated with or contributing to this variability. The personality domain is divided with those who continue to advocate for the relative stability of personality and others who develop models that can address person variability as a function of social factors. In this thesis also, we took a step further and argue that there has not been enough attention directed at people’s group memberships and associated social identities. For this reason the social identity perspective is outlined in detail (Chapter 3) and is the framework that underpins the empirical work of the thesis (Chapters 4-6). In this introductory chapter the aim is to provide an overview of the thesis, its central
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arguments, a summary of the empirical work and main conclusions. We start with personality variability as a concept and then consider related theory and research. The next section provides an overview of cultural and social models. Finally the current research and the main findings are outlined.

**Personality variability**

Whether personality is stable or flexible, and whether it can shift as a function of environmental factors such as changes in people’s experiences, roles and social relations -- including forming new meaningful group memberships -- has been debated widely in personality and social psychology. In personality theories, one’s character is usually depicted as being formed early in life as a function of biological and socialization factors. Additionally, personality is thought to be a stable and enduring construct across the remainder of the life span. As such, personality is largely determined by genetic factors, and once fully developed in early adulthood, it settles and remains unchanged. This traditional view, though, is increasingly being challenged and there is another “camp” within the personality field advocating for models of personality variability and change. Indeed, there is emerging compelling empirical evidence from large sample longitudinal studies to support the variability and effect of environmental factors on personality.

There have been a number of attempts to identify core personality characteristics that summarise the differences between individuals. In Chapter 2 the history of the development of trait theory and establishment of personality dimensions is briefly reviewed. The Five Factor Model (Extraversion, Agreeableness, Conscientiousness,
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Neuroticism and Openness; McCrae & Costa, 1987) was established to be universal across cultures, although people from different cultural background tend to have different personality profiles (e.g., McCrae et al., 2001). These efforts towards a reliable and valid measurement were connected to theories about the person and the stability argument of personality. Traditional personality theories argue that personality develops early in life and once a certain development point is reached it becomes stable and remains unchanged. At present it is argued that 30 is the age where a person reaches full maturation of personality and after which personality is stable and “set like plaster” (Costa & McCrae, 1994). As a result there is a large body of work examining personality at the age of 30 and debates exist about whether there is evidence of personality variability after this time in a person’s life (e.g., Capsi & Roberts, 2001; Soldz & Vaillant, 1999).

Through the use of larger and more reliable data sets this question of stability at age 30 has been revisited with surprising results. In a longitudinal study by Specht, Egloff and Schmukle (2011) that included over 14,000 participants, the most stable period of a person’s personality was found to be between the ages of 40 and 60, and levels of rank-order stability actually decreased after the age of 60. Results also suggest that mean-level personality has a tendency to change across the whole life span. Specifically, Extraversion showed a stable decrease across the life span. Openness was the highest early in life and decreased in the 20s and 30s, was stable in the 40 and 50s, and rapidly decreased again after the age of 60. Agreeableness was relatively stable until 60, and increased after the age of 60. Conscientiousness increased rather rapidly in
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the early 20s and 30s with the change slowing down in a person’s 40s and 50s, and then decreasing afterwards (Specht et al., 2011). Another study with 132, 515 participants across an age range from 21 to 60, also found that for the dimensions of Agreeableness, Neuroticism and Openness the change rate either increased or remained the same. For Extraversion and Conscientiousness, though, the changes slowed down but did not stand still over the life span (Srivastava, John, Gosling & Potter, 2003). Both of these studies used extremely large samples and the result support the idea that personality can and does change across the life course. Also, both of these studies explored personality stability and change with two most widely used types of change, the mean-level and the rank-order stability, the former concerns the mean-level change of a sample over time, and the latter about the relative ranking of an individual in the sample. Other types of personality stability which are less widely used are outlined in Chapter 2. The present thesis explored personality variability mainly with mean-level change, but also included rank-order stability in Study 4.

One way to describe the result of Srivastava and colleagues (2003) is as an inverted U where there is personality variability early and late in life but stability in the middle years. This age range of 40-60 where personality is the most stable is also the period of life when circumstances are also more likely to be stable. People generally have more settled experiences and roles as employee, partners and parents in these years. In Western countries the period from 40 to 60 is when things in life have settled (e.g., get married, have children, have a stable job). The early years can be characterised as having far more environmental “churn” and points of transition such as leaving
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School and starting work, acquiring friends, starting a family and having children as young couple. After the age of 60 people also face transitions. In this phase of life there are a number of major life events such as retirement and loss of family members or friends. It is possible that these life events lead to personality change. Consistent with this assumption, research using twins and adopted siblings found that as people grow, the genetic influence on personality wanes and environmental influence increases (McCartney, Harris & Bernieri, 1990). The debate regarding personality stability after the age of 30 and whether personality is genetically determined and biologically wired or context dependent is a heated topic within personality psychology. More details will be outlined in Chapter 2 of the thesis.

Although there are not many studies that have established the causal link between life events and personality change, the literature suggests that life events such as relationship experiences, job experiences, having children, and tragic loss are associated with personality change (Jokela, Kivimäki, Elovainio, & Keltikangas-Järvinen, 2009; Löckenhoff, Terracciano, Patriciu, Eaton & Costa, 2009; Scollon & Diener, 2006). Specht and colleagues linked the personality variability of Conscientiousness they found in their longitudinal study to life events such as having kids or retirement, and changes in Extraversion and Neuroticism are associated with family related events. People’s perceptions and attitudes about the life events they face also shape personality (e.g., Cramer, 2003). For example, perceiving a negative event as a negative turning point was associated with increases in Neuroticism, whereas the mindset of learning a lesson from the event was associated with increases in
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Extraversion and Conscientiousness (Sutin, Costa, Wethington & Eaton, 2010). Details in these studies and other relevant research will be outlined in Chapter 2. Overall, experiences in relationships, family and work influence personality and may lead to its change.

Exactly what in these life events have the impact to change personality? There may be a link between particular role expectations and experiences, and personality. Indeed, there is research that suggests personality is subject to change not only by life events across time, but also at certain time points, as a function of taking on new roles or switching between different roles even within short time periods across a day (at work or at home). That is, personality variability can occur when there is change in the context, rather than slow and gradual change over decades of time through aging.

Several theoretical frameworks have been proposed to address to personality variability. One widely accepted model for personality variability across context is the Cognitive-Affirmative system theory proposed by Mischel and Shoda (1995), in which they argue that personality may be consistent across situations, but the expression of it depends on how people cognitively and emotionally process the situation, hence different outcome of personality expression across context.

Unlike the Cognitive-Affirmative system theory of personality, the other two frameworks reviewed in Chapter 2 argue for fundamental personality difference across contexts. The social investment principle argues that when people accept a new social role (as a life partner, as an employee or as parent) they also accept the set of expectations and norms that come with it. The more people commit to a social role, the
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more they will act to meet those expectations, and embody the role norms. The commitment to one’s social role leads to change in personality associated with the role norms (Roberts, Wood & Smith, 2005). For example, the social role of an employee usually is aligned with people being dutiful, organized, and self-discipline. The social role of being a spouse may come with the expectation of being warm, fun and trustworthy. Those who commit to do well in a particular social role will try to meet these expectations, and demonstrate these traits in role-related aspects of life. However, if one made no such commitment to meet the expectations of the role and to invest in the role, they would not demonstrate change in their traits. This social investment principle can explain how life events come to shape personality.

Although all of the role expectations are integrated in the general personality pattern, within each social role some characteristic may be expressed more. When people switch between roles, they might exhibit different types of behaviour, and changes in their personality. Taking one step further from the social investment principle, the Personality and Role Identity Structural Model proposed that each role has its specific personality profile, which then aggregates into the general personality profile. When people possess certain social roles, they exhibit the personality profile associated with the role rather than the general personality (Wood & Roberts, 2006). Indeed, there is evidence that when a target person is being rated by groups of friends, co-workers and family members, the level of agreement between raters within these particular groups is always higher than the ratings between the groups. This result supports the argument that personality varies across roles (i.e., as friend, employee and
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family members; Malloy, Albright, Kenny, Agatstein & Winquist, 1997). These two models about social roles help explain how changes in the context lead to change in personality, and place role identity front and centre.

Cultural and social models of personality variability

In Chapter 3, attention turns to cross-cultural and social psychological research. The aim is to explore the issue of personality stability and variability within these sub-disciplines. In these areas the focus is not on developmental maturation across the life course but on the idea that people can have multiple selves each associated with particular characteristics and that as self-definition changes so do people’s attitudes, behaviour and personalities. Within cross-cultural research there is much evidence that supports the idea that personality can shift within an individual across situations depending on their self-definition. The cross-cultural and bicultural research suggests that amongst bicultural individuals (for example Western Chinese or Mexican American), personality change can occur when one cultural mindset is activated compared to another; a phenomenon known as cultural frame switching (CFS, Hong, Morris, Chiu & Benet-Martinez, 2000). The proposed mechanism behind CFS is that cues such as cultural symbols and language are embedded in the context or situation in which a person finds him or herself. These cues make salient or activate the corresponding cultural meaning system (or cultural mindset) which guides people to process information and to behave in line with the cultural norm. For instance, Mexican American bilinguals reported more extraversion, agreeableness and less neuroticism when they completed the personality measure in English compared to Spanish
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(Ramirez-Esparza, Gosling, Benet-Martinez, Potter & Pennebaker, 2006). Also Hong Kong bilinguals rated themselves to be more applicable, helpful and less intellect when they completed the personality ratings in English compare to when they completed it in Chinese, and also acted more open, assertive and helpful when conversing in Cantonese compared to English (study 2, Chen & Bond, 2010). Changes in people’s self-concept and behaviour corresponded to the cues in the environment, based on their understanding and perception of the situation.

However, in some cultural frame switching studies a boomerang effect has been found, either when cultural mindset was primed by language or environmental cues. In one study conducted with Hong Kong bilingual participants, participants endorse Chinese values more when they completed the value survey in English (Yang & Bond, 1980). Similarly, in some studies cultural cues would trigger some participants to react in the way opposite to how the relevant cultural mindset would deem appropriate (e.g., Mok, Cheng & Morris, 2010). The boomerang effects referred to as ethnic affirmation and cultural reactance, suggests that the effect of cultural frame switching may be more complex than activation of cultural mindset. One construct that’s overlooked in this process may be cultural self-identity (Kitayama & Tompson, 2010).

The construct of cultural self-identity is used to explain the influence of culture on the self-concept, including personality. It is argued that a cultural self-identity is formed through voluntary and repeated engagement with culturally scripted behavioural routines which affects connectivity between information and the physical structure of the brain. This culturally modified brain connectivity may lead to changes in the self-
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c Oncept and behaviour. More recently cultural self-identity has been shown to be
important with these processes such that culture will have most impact when there is not
just passive cultural absorption but willing and purposeful engagement in cultural
practices (Kitayama & Tompson, 2010). When examining the process of cultural
influence in cognition, self-concept and behaviour including the process of cultural
frame switching, cultural identification processes may be relevant.

Looking closely at these theories it is possible to appreciate how another set of
theories within social psychology, namely social identity and self-categorization
theories, may serve to integrate these trajectories of work. There is overlap between the
analysis offered by the social investment principle related to roles, cultural mindsets,
cultural self-identity and the construct of social identity and identity salience in the
social identity perspective. Roles and cultures can be seen as a type of ‘group’ or
‘category’ where people can internalise the norms, values and behaviour scripts.
Furthermore when a particular category becomes salient it will define the self-concept
and self-definition and behaviour.

While role and cultural theories accept that the norms, values and beliefs of the
group can impact on the self through social learning and socialization, the social
identity perspective examines in more detail how and when such knowledge will impact
on self-definition and behaviour. More specifically, self-categorization theory (SCT,
Turner, Hogg, Oakes, Reicher & Wetherell, 1987) proposes that people form self-
categories as a function of the interaction between the things they bring to the situation
(perceiver readiness) and the cues in the environment (cultural symbols, other people).
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People seek to establish normative and comparative fit and an outcome of these processes is that a particular self-definition or categorization will become salient. An important point is that these self-categories can form in ways that relate to how the person is different and unique compared to others (personal identity) or in terms of group memberships and social norms (including roles and cultural groups but also more ad hoc collectivities). Furthermore, as a function of which identity becomes salient self-definition can vary (even assessed by personality measures; Reynolds et al., 2012). Self-categorization theory offers an analysis of how and when personality can change. It is argued that people can form different self-categorization depending on the context. Also when people come to identify with a group more strongly they will internalise the norms, values and beliefs that define the group (role group or cultural group; cultural self-identity).

Linking these ideas to personality it could be expected that personality responses and behaviour will vary as self-categorizations vary. Self-categorization variability is expected with psychological and contextual factors change (Reynolds et al., 2012; Reynolds & Branscombe, 2015; Turner, Reynolds, Haslam & Veenstra, 2006). So if people live, work and play in stable context one would expect stable self-categorizations. If people’s role, responsibilities, and contexts change so too will personality processes. Also as different identities become salient one could expect changes in self-definition. The self can be both personal and socially determined, and people can shift between the levels of self-categorization (see also Onorato & Turner, 2004; Reynolds & Turner, 2006). Similarly, people can shift between their multiple
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group memberships, and exhibit changes in self-definition and personality as they
embody the characteristics of the group membership that is salient.

Self-categorization theory offers a particular view of the self-process where it is
argued 1) people have different self-categorizations both personal and social, 2) self-
categorizations can change across contexts, and 3) people can form new social relations
and join new groups which can become psychologically important (role and cultural
groups) and influence attitudes and behaviour. This analysis of the self has implications
for understanding personality because it is possible that as people’s self-categorizations
change so too can their personalities. Exploring these ideas more systematically can
serve to extend self-categorization theory into the domain of personality processes
showing that changes in self-categorization can be revealed through personality
measures. In addition, such work can shed light on current personality theories and
revisit claims of stability and variability.

The current research

In this thesis the social identity perspective is argued to be an integrative
framework that can help explain when and how personality stability and change occurs.
From this perspective role groups and cultural groups can both impact on people’s
social identities and when this happens and these identifies are salient personality
variability may be expected. In this way it is not simply being exposed to a new group
that will impact on the person but the degree to which the norms, value and beliefs of
the group are internalised and become self-defining and self-relevant will be particularly
important. These ideas can be assessed through measuring and manipulating social
identity. Drawing on existing research, a number of studies have been conducted where social identity is measured (Study 1 and 2) or manipulated (Study 3). In Study 4, these ideas are extended to a naturalistic survey of Asian and European New Zealanders where personality, ethnic identification and patriotism (as a proxy for support for the New Zealand government and nation) are assessed across a four year period.

More specifically the goal of Studies 1 and 2 was to induce cultural frame switching of personality by both language and cultural icon priming on Australian Chinese bilingual and bicultural individuals, and to establish the role of identification in this process. Following the literature of cultural psychology, the hypothesis was that language and cultural priming should lead to changes in personality, and that identification can predict personality. A secondary goal of Study 2 was to explore the role of Bicultural Identity Integration in cultural frame switching and its relationship with identification processes. In both studies within-subject design was used. Participants completed both priming conditions, and reported Australian and Chinese identification prior to the primings. In Study 1 participants completed personality measures in both English and Chinese, whereas in Study 2 participants completed the same English measures of personality after being exposed to pictures of Chinese or Australian cultural icons. The order of the priming participants received was counterbalanced. In both studies we found some priming effect on personality, and most importantly identification strongly predicted personality. The results from these two experiments suggest that social identification is associated with personality and personality can shift across contexts.
In Study 3 the focus was on salient social identities and behaviour rating of personality with the core hypothesis being that salient social identity can impact on personality responses and behaviour. Similar to Studies 1 and 2, a within-subjects design was adopted. Bicultural Australian Chinese participants completed interviews in which they answered questions about their understanding of Australian and Chinese culture and how they feel about being Australian and being Chinese. The interview was recorded and later coded by two independent assessors. This interview section was designed to make salient either their Australian social identity or Chinese social identity. The recording was used as a behavioural measure of personality. Participants also reported identification and self-rated personality. Results suggest that participants demonstrated change in both self-rated personality and behaviour rating of personality when switching between their salient social identities. Responses also suggest that participants were aware of this change in their personality. This study supported our hypothesis that people’s self-definition and behaviour vary depending on which social group membership is salient in a given condition and this can affect self-definition and behaviour.

Studies 1 to 3 were all about switching between two cultural or social categories that people belong to and social identification was assessed. In Chapter 6 the focus was to explore the role of identification in personality variability during the process of formation of cultural group membership (acculturation). In order to do so, we used data from the New Zealand Attitude and Value Study to investigate personality variability longitudinally as a function of ethnic and national identity. The data sets comprises
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responses from a large representative sample of New Zealand residents, and follows the same group of 18,000 New Zealanders each year, currently it is up to wave seven. We used wave one to wave four longitudinal data, where close to three thousand participants completed all four time points, among them 89 were Asian. New Zealand patriotism was used as a proxy for national identification. A key finding was that ethnic identification and patriotism predicted both baseline personality levels and its change over time. In particular amongst Asian New Zealanders, we found that those who did not identify with being Asian and those who highly endorse being New Zealanders showed change of personality consistent with being more similar to the typical personality profile of New Zealanders (as Westerners). In this study we found longitudinal evidence of the acculturation of personality, and most importantly, that identity processes play an important role in this process.

In summary the findings across these studies are informative in a number of ways. First, they provide further evidence of personality variability as a function of changes in context. Second, they show that making salient different social identities can impact on personality responses and behaviour. Third, social identification processes are related to personality and personality change over time. Using a range of methods including experimental and longitudinal design and observer rating in addition to self-report, there is evidence that social identity processes impact on personality.
Chapter 2: Personality stability and malleability

Personality, by definition, is a system of enduring, inner characteristics of individuals that contributes to consistency in their thoughts, feelings, and behaviour (Leary, 2005, p. 3). It is proposed that personality characteristics can be described using words in a natural language (Allport, 1937; Goldberg, 1981) and categorize into traits, states, societal evaluations and other physical characteristics such as capacities and talents (Allport & Odbert, 1936). Most personality research has focused on traits and the view traits as largely biologically determined and relatively stable over time, leading to a certain degree of consistency in how people respond across different situations.

In this chapter personality models and in particular the trait approach are described in detail. First, the development of the Big Five theory is outlined. Then in this chapter the debate of personality stability is described including its genetic makeup, the debate about whether it can be influenced by the environment, and whether personality remains unchanged in adulthood. Finally, theoretical frameworks and empirical evidence of personality malleability is reviewed. The aim is to provide an overview of the ‘state-of-the-field’ with respect to personality stability and malleability. Such an overview provides a context in which to understand the empirical work of this thesis that, as summarised in Chapter 1, concerns explaining personality change across contexts and the role of social identity processes in this variability.

Historical overview and emergence of trait theory

Personality traits are “dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions” (McCrae & Costa, 2003, p.
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25). They are adjectives such as shy, careful, and enthusiastic. There are thousands of these adjectives, and researchers have used such descriptions to identify ways to classify and structure descriptions of people’s character.

During WWII, the need to create a diagnosable psychometric test became necessary to better identify mental health problems and recruit defence personnel. Cattell (Cattell, 1946; Cattell, Eber, & Tatsuoka, 1970) started with a massive list of trait word and reduced them to 35 variables using semantic and empirical clustering procedures. Using this set of 35 variables, he developed a personality test with 16 factors. Cattell’s findings have been replicated with some inconsistent results (e.g., Becker, 1960; Digman & Takemoto-Chock, 1981). However, Cattell’s method of using adjectives was adopted by other researchers who continued the effort to identify ways to structure and classify people’s characteristics.

The Five Factor Model emerged from the trajectory of research that followed Cattell’s discoveries. Using the list of variables derived from Cattell, numerous researchers have tried to find a clear structure or classification for personality by self-rating and peer-rating (e.g., Borgatta, 1964). Tupes and Christal (1961) conducted further analysis of Cattell’s data and found five recurring factors: "Surgency/Extraversion", "Agreeableness", "Conscientiousness", "Emotional Stability/Neuroticism", and “Culture”. Later Norman (1963) confirmed these five factors and came to the conclusion that five factors are sufficient. These factors eventually became known as the Big Five Model which includes Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience. This
name first coined by Goldberg (1981) was not meant to suggest that these five factors cover all personality individual differences, but to indicate that these broad factors are useful in describing personality. Each of these factors cover a large number of distinct traits.

In the late 1980s, a different list of personality trait descriptive words was compiled and sorted into 75 semantic categories. Using this new list, Goldberg confirmed the existence and stability of the Five Factors across a number of methods of factor extraction and rotation (Goldberg, 1990). Additional studies have confirmed that these five factors are able to be consistently replicated (Saucier, 1997; Saucier & Goldberg, 1996). McCrae and Costa also independently confirmed the five factors and called it the Five Factor Model of personality (FFM, McCrae & Costa, 1985).

Another leader in this area was Eysenck who developed a personality scale that was based on factor analysing questions about behaviour. Eysenck identified three dimensions of personality: Extraversion, Neuroticism and Psychoticism (Eysenck & Eysenck, 1975). Extraversion is a personality dimension related to being sociable and enjoying the company of others (e.g., going to parties). Neuroticism reflects intensity of emotional experiences. Psychoticism is about non-conformity and risk-taking. This work is referred to as the Three Factor Model and it has been very influential. Eysenck argued that his model of Three Factors was better than alternative models such as the Five Factor Model because his factors are not correlated with each other. On the other hand, within the FFM the Conscientiousness and Agreeableness factors usually correlate. Eysenck considered the factor of Psychoticism to be a hierarchical factor that
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incorporates both Conscientiousness and Agreeableness. Furthermore, Eysenck (1992) argued his Three Factor Model can account for the genetic influence on behaviour, but the factors of Agreeableness, Conscientiousness and Openness could not.

The methodology used to identify the Big Three and the Five Factors is different. Researchers such as Eysenck used constructs derived from personality theory and descriptions of behaviour to compose their personality questionnaires, whereas Cattell and other personality researchers adopted the lexical approach and used adjectives that represent traits to seek personality dimensions and constructs. The aim was to identify the fewest reliable dimensions that can be used to make sense of the full range of adjectives used to describe people’s character. Many personality theorists believed that Extraversion and Neuroticism are central constructs and these two factors are included in a wide variety of personality measurements. However, these two factors cannot represent the full range of diversity between the characteristics of people, and despite the argument of whether the Three Factor Model or the Five Factor Model is better, the Five Factor Model has received widespread support.

The number of publications related to the Five Factor Model for each five-year interval has exceeded the number of publications related to Eysenck’s Three Factor model or Cattell’s model and continues to grow rapidly (John, Naumann & Soto, 2008). The present thesis also adopts the Five Factor Model, rather than the Big Three.

The Five Factor Model and its extension

The five factors of FFM are Extraversion (E), Agreeableness (A), Conscientiousness (C), Neuroticism (N), and Openness to Experience (O). These factors
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are very broad and can be described on continuums, where each person is argued to vary on these five continuums (McCrae & John, 1998). The Extraversion-Introversion continuum described activity level, need for stimulation, capacity for joy, and need and capacity for interpersonal interaction. Examples of adjectives for Extraversion include talkative, assertive, energetic, outgoing, and gregarious. Agreeableness captures the continuum of being compassionate to hostile in thoughts and attitudes. Examples of adjectives for Agreeableness include forgiving, generous, kind, sympathetic and trustful. Conscientiousness describes the degree of motivation in goal-directing behaviour, organisation, persistence and self-discipline. The Neuroticism-Emotional Stability continuum is associated with individual characteristics of prone to psychological distress, unrealistic ideas, excessive urges and maladaptive coping responses. Openness describes proactive seeking and appreciation of experience, exploration of the unfamiliar and tolerance the peculiar.

There are numerous measurement tools available to assess the Big Five personality model. The NEO-PI-R is the most widely used non-clinical measure of the five personality dimensions, with 30 subscales measuring six specific facets of each of the five dimensions (Costa & McCrae, 1985; 1992). However, as it contains 240 items and can sometimes be time consuming for research purposes, shorter measurements of the Five Factor Model have also been developed. The NEO-FFI (Costa & McCrae, 1992) is the shorter version of NEO-PI-R, and contains 60 items, 12 items for each of the five dimensions. Both of these two inventories are widely used for research purposes. Other inventories include the Big Five Inventory (BFI, John & Srivastava,
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1999), a 44-item short questionnaire for the five factors, the International Personality Item Pool (IPIP, Goldberg, 1999) and the Five Factor Model Rating Form (FFMRF; Mullins-Sweatt, Jamerson, Samuel, Olson, & Widiger, 2006) which is a 30-item short instrument with one item for each of the 30 facets.

There are also new measurement tools that build on, but also extend, the Five Factor Model. One example is the HEXACO model, which contains all five domains in the Five Factor Model, but also an additional construct termed Honesty-Humility (Ashton et. al., 2004). The rationale for this new construct is that the original Five Factor Model was discovered in psycholexical studies using a small number of English descriptive adjectives and therefore is limited as a tool relevant for use with other languages and cultures.

When using languages other than English to conduct psycholexical studies often a sixth dimension of trustworthy versus hypocritical was found (e.g., De Raad & Szirmak, 1994; Di Blas & Forzi, 1998; Angleitner & Ostendorf, 1989). On the basis of these studies conducted in Dutch, French, German, Italian, Hungarian, Polish and Korean, Ashton and colleagues (Ashton et al., 2004) proposed a six-dimension of personality and called it the HEXACO model. The sixth factor was named Honesty-Humility and captures traits such as honest, trustworthy, and altruistic, versus hypocritical, greedy, deceiving and selfish. The other five dimensions, although very similar to the factors in the Five Factor Model, are not identical to it. Empirical tests also suggest that the HEXACO model can explain the “Dark Triad” of personality (Psychopathy, Machiavellianism and Narcissism) better than the Five Factor Model.
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(Lee & Ashton, 2004). The HEXACO model is argued to be optimal, however as a newly developed model, it is less widely used than the Five Factor Model.

The emergence of the HEXACO model and more widespread related research on personality traits outside of western English speaking countries raises questions about whether the original Five Factors were relevant in cross-cultural settings (for example, Yang & Bond, 1990 for Chinese lexical study, Benet-Martinez & Waller, 1997 for Spanish study, Church & Katigbak, 1989 for Tagalog study). Psycholexical studies in Dutch and German have found five stable factors, which were similar to the Five Factors in English (De Raad et al., 1988; Ostendorf, 1990). In most of the other studies, factors similar to the Five Factor Model have been supported, but sometimes not exactly in the same structure, and sometimes indigenous factors have also been found. Similarly, lexical studies using other languages also proposed additional personality dimensions to capture personality traits unique to the specific culture and language context (Benet-Martinez & Waller, 1997).

Turning to the Chinese cultural context specifically (which is relevant to the research conducted in this thesis), one lexical study in Chinese proposed a Big Seven model (Wang & Cui, 2003). This model contains dimensions such as Extraversion, Kindness, Behaviour Styles, Human Relations, and Way of Life. These dimensions overlap with many of the Five Factor Model dimensions and facets, but also are characterised by differences. When researchers investigated NEO-PI-R and EPQ-RS using Chinese samples, they found that the subscales of Conscientiousness, Agreeableness and Neuroticism had most items retained after factor analysis, but
Extraversion and Openness had poor structural validity (Wang, Cui & Zhou, 2004; Wang, Cui & Zhu, 2004). These researchers came to the conclusion that the Five Factor Model measurement tools such as NEO-PI-R can only capture the etic (global) part of the personality structure, therefore it is insufficient to assess the emic (focal) part of both Westerners and Chinese peoples. Etic refers to the similarities in basic psychological processes across cultures whereas emic captures the uniqueness and distinctiveness of a psychological process in a given culture. However, factor analysis of the Chinese version of MMPI, EPQ, and NEO-PI-R all demonstrated good replicability across language, indicating that the personality structure discovered in US/western research still holds some relevance in the Chinese context (Eysenck & Chan, 1982; Zou, Zhao & Jiang, 1989).

Another widely used personality measure specific for use in the Chinese cultural context is the Chinese Personality Assessment Inventory (CPAI, Cheung et al., 1996). This indigenous measurement tool has 22 personality scales, 1 clinical scale and 3 validation scales. The personality scales can be grouped into four factors: Social Potency, Dependability, Accommodations, and Interpersonal Relatedness. A series of studies using CPAI and NEO-PI-R showed that the CPAI factors Social Potency, Dependability and Accommodations largely overlap with Big Five factors (FFM) except Openness (Cheung et al., 2001). The factor of Interpersonal Relatedness includes relationship orientation, flexibility, optimism versus pessimism, defensiveness, harmony, face and logical versus affective orientation, and was not covered in the FFM. Cheung and colleagues (2001) call for a six factor model with the combination of FFM
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and CPAI factors for the Chinese population to account for both the emic and etic aspects of Chinese personality.

Despite being criticized for not being able to capture the unique personality factors across cultures, the Five Factor Model has been tested and broadly validated in various populations (McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005). As a result, it is argued that the Five Factor Model can universally describe the characteristics of people within the minimum number of dimensions that differentiate people (McCrae & Costa, 1997). Work is continuing but it appears as if the factors Neuroticism and Openness might be less replicable across languages (De Raad et al., 2010).

Cross-cultural patterns of personality

Interest in whether the Big Five personality dimensions exist across cultures has led to an increase in research investigating cultural differences in personality. The widespread practice is to use personality scales developed in the American context and translate the scale into other languages to assess the personality profiles of other countries and cultures (e.g., McCrae, 2001). This practice has been criticized for assuming the “western” way of thinking as a standard for other cultures (Markus, 2004). It is the case, though, that behaviours appropriate in one culture may be relevant for another, and behaviours could have different meanings across contexts, and cultures.

The literature on the reference group effect (Heine, Lehman, Peng, & Greenholtz, 2002) suggest that people tend to evaluate themselves in reference to others, and there are different motives when choosing the reference groups. When making
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Cross-cultural comparisons using self-report Likert scales, the results may be unclear because it is inherent for people to use their own cultural group as the reference group. For example, when a Chinese person rates himself on a personality scale, he will compare with other Chinese and may rate himself as quite extraverted, but when making comparisons with Europeans would rate himself lower. It is not that his extraversion has changed what has changed is the frame of reference associated with the self-assessment. Associated with this effect, it is often found that the difference between people from different cultures may be smaller than the difference between people within the same country (e.g., McCrae, 2004).

One way to answer these questions is to demonstrate good internal reliability of personality scales, and factorial structure consistency across languages and cultures (Allik, 2005). The Eysenck’s Personality Questionnaire (EPQ) was measured in 37 countries to test its internal reliability and factorial structure consistency (Barrett et al., 1998; Lynn & Martin, 1995), and it was found that the EPQ has good cross-cultural replicability and generalizability. NEO-PI-R (Costa & McCrae, 1992) was also tested in 36 countries across five major languages and found good internal reliability and factorial consistency (McCrae, 2001; 2002; McCrae, Terracciano, & 79 Members of the Personality Profiles of Cultures Project, 2005). In addition, the Big Five Inventory (John & Srivastava, 1999) was translated to 28 languages and tested in 56 nations, and also showed good reliability and factorial consistency (Schmitt et al., 2007). These results suggest that cross-cultural comparisons of FFM can be performed in a reliable and valid way.
Some interesting trends have been observed as a function of this cross-country research. For example, people from European and American cultures tend to have higher Extraversion than people in Asian and African cultures. Asians also tend to have higher Neuroticism levels, along with members of some European countries. North East Asians (Korean, China, and Japan) as well as the Australasia areas scored lower on Conscientiousness compared to South East Asians (Allik, 2005; Allik & McCrae, 2004; McCrae et al., 2005). The results on Openness were inconclusive, though, in some studies Asians scored lower than Americans and English-speakers, but in others, they scored slightly higher (e.g., McCrae, 2001; McCrae et al., 2005).

Moreover, there has been an attempt to use dimensions of culture to explain cultural difference in personality (Hofstede & McCrae, 2004). As we will explain in more detail in Chapter 3, Hofstede identify several dimensions of culture, including Individualism-Collectivism (the degree to which members of a society are integrated into groups), Power Distance (the belief about power equality and the structure of power distribution), Uncertainty Avoidance (a society’s tolerance level of ambiguity) and Masculinity (a preference in society for assertiveness, heroism, achievement and material rewards). Using these cultural dimensions, Ching and colleagues (e.g., Ching et al., 2013) discovered strong correlations between Extraversion and Individualism, Extraversion and Power Distance, Conscientiousness with Power Distance, Openness with Masculinity and with Power Distance, Neuroticism with both Masculinity and Uncertainty Avoidance, and finally Agreeableness with Masculinity and Uncertainty Avoidance. Asian countries usually fall towards the collectivism category and European
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and American cultures are considered more individualistic, which corresponds with the finding of a strong positive correlation between Extraversion and Individualism.

Similarly, the correlation between Uncertainty Avoidance and Neuroticism, and Power Distance with Conscientiousness also received conceptual support (Smith & Bond, 1993). However, it is hard to determine the causal pathway between culture and personality, as they most likely shape each other and are increasingly considered to be shaped by evolutionary forces (e.g., Buss, 2001; Kitayama & Uskul, 2011). The next chapter (Chapter 3) will outline in detail the relationship between personality, society and culture.

In addition to finding a universal pattern of personality traits and reliable measure of personality across cultures and contexts, there has been trajectory of work concerning personality differences, and in particular the influence of genetics (nature) and the environment (nurture), including the cultural environment and the present context. In the next part of the chapter the role of genetic and environmental factors in explaining personality and its stability is outlined.

The genetic vs. environmental influence on personality

The basic assumption of the personality construct is that individual characteristics are relatively invariant across situations and over time. McCrae argued that personality is largely dependent on genetics and although impacted by early life experiences, the maturation process of personality development is complete by age 30 and from this point personality remains relatively stable (Costa & McCrae, 1988). This conclusion was informed by numerous twin and adoption studies. Twin studies provide
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a context to investigate genetic and environmental influence on personality. Identical or monozygotic twins share the same genes and are argued to have “equal home environments” while fraternal or dizygotic twins only share the same home environment therefore it is possible to compare these two sets of twins to determine the role of genetic influences. Adopted children, on the other hand, have different genes but the same home environment as their unrelated siblings.

Many twin studies have compared identical twins and fraternal twins, and explained personality variance by examining genetic factors and environmental factors in the model. In one of these twin studies, about 40% to 60% of personality variance was explained by genetic factors (Jang, Livesley & Vernon, 1996). In another twin study concerning personality disorders (Jang, Livesley, Vernon & Jackson, 1996), similar results were found for genetic factors, but unique (non-shared) environmental effects explained about 44% to 65% of the variance. The genetic effect was only dominant for the dimension of Openness, suggesting that the environment is also highly influential in shaping personality. In both of these two studies, identical twins had much higher correlations on almost all dimensions compared to fraternal twins. Such results are interpreted as indicating genetic influence on personality (if it is argued that identical and fraternal twins do not share the same environment because having an identical twin creates a different environment then it is harder to draw such conclusion (for a summary of these points see Branscombe & Reynolds, 2015).

With respect to adoption studies where children who are biologically unrelated are reared in the same home environment, environment emerges as being a less
important factor. One study by Loehlin and colleagues, for example, looked at adopted children and biological children of the adopting parents to investigate the environmental effects on personality and concluded that environment did not predict personality (Loehlin, Horn & Willerman, 1990). This study tracked adopted and biological children living in the same family for approximately 10 years. Adopted siblings did not become more alike or move in the same direction in their personality responses across the 10 years of living in the same environment. Parents’ personality scores also did not predict personality change in either their adopted children or their biological children.

As heritability is defined as the portion of observed variability of a given trait that can be accounted for by genetic differences among individuals at a particular time (Plomin & Nesselroade, 1990), heritability can change as a function of age. However, there is no conclusive evidence that can point to an increase or decrease of genetic influence by age. Although one would expect the genetic influence on personality to decrease with age as people start to experience more diverse life events, after reviewing genetic studies during infancy, childhood and adulthood, Plomin (1986) came to the conclusion that heritability seemed to increase with age, especially for general cognitive ability. There is also abundant evidence contradicting this conclusion and suggests that the genetic effects that are observed may be stronger early in life compared to later in life which points to a role for the non-shared environment and accumulative effects across time (e.g., McCartney, Harris & Bernieri, 1990; Pogue-Geile & Rose, 1985). McCartney and colleagues examined twin studies on personality and intelligence from 1967 to 1985 to estimate the effect size of genetic factors on personality and
intelligence. They also entered age as a moderator. The correlation between identical twins was found to be higher than for the correlation between fraternal twins, suggesting genetic influence on personality on all dimensions including sociability, task orientation and masculinity-femininity (which were previously considered to be influenced more by environment). However, when age was included as a moderator, the overall pattern of correlations became negative, which suggest that when twins get older, they became less alike (McCartney, Harris & Bernieri, 1990). A longitudinal study analysing the genetic and environmental influence on adult personality also found that heritability decreased from late adolescence to the late 20s, and either remained stable afterwards or slightly decreased in the 50s. Meanwhile, significant new environmental influence on personality emerged at every age (Viken, Rose, Kaprio & Koskenvuo, 1994). Evidence from twin studies pointed to strong influence of genetic factors, and an increase in influence of environmental factors over time, especially from late adolescence.

The next question concerns the genetic and environmental influences in explaining personality stability and change. Which one of these two factors contributes to personality change? One of the studies that looked at this question included identical twins and fraternal twins and assessed them on two occasions in early adulthood (early twenties and then again when they were 30 years old; McGue, Bacon & Lykken, 1993). Over time, the twins exhibited increases in Constrain (conservative, non-risk-taking, traditional, avoiding excitement) and decreases in Negative Emotionality (similar to Neuroticism in the Big Five Model), and stable Positive Emotionality (similar to
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Extraversion in the Big Five Model). The correlation between identical twins was consistently larger than the correlation between fraternal twins, as expected. However, when analysing the residual variance of personality change over time, they discovered that over 70% of the residual variance was associated with non-shared environmental factors. The researchers concluded that the stable core of personality is associated with genetic factors, and personality change was largely due to environmental factors. Along these same lines, another longitudinal twin study also came to the conclusion that the genetic effect was modest at best for explaining adult personality change (Pogue-Geile & Rose, 1985).

Altogether, the empirical evidence from twin and adoption studies suggests that there are strong biological and genetic components of personality. In addition, results suggest that in adulthood the influence of genetic factors wanes and environmental influences seem to increase. In light of such work, attention has been directed to personality models that can account for both genetic and environmental influences and evidence of change in personality across the life span.

In addition to the genetic basis of personality, there are studies that link personality traits to brain structure (DeYoung et al., 2010). After controlling for age, sex and brain volume, they discovered that four of the five personality traits (except Openness) covaried with volumes of certain brain regions. Extraversion, for example, was associated with the part of brain involved in processing reward information, and Conscientiousness was associated with a part of brain involved in planning and the voluntary control of behaviour. This neurological study supports the assumption that the
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Five Factor personality traits are biologically based. However, given that the human (and other animal) brain can be influenced and shaped by environment, it did not rule out the possibility of personality change as a function of context and environmental factors (e.g., Cotman & Berchtold, 2002).

Moreover, the expression of genes is influenced by experience and environment (Caspi et al., 2002), which means the expression of any genetic basis for personality depends on environment factors. Increasingly a role for genes and environment and importantly the interaction between the two is used to explain the expression of personality. Caspi et al (2002) identified a MAOA gene that serves as a protective factor for children exposed to abuse from developing delinquent behaviours, and found that the expression of this particular gene depend on whether the child experienced abuse. For children who suffered from abuse, the environment triggered the expression of this MAOA gene which helps them buffer the effect of abuse and prevents the development of delinquent behaviours among these children. For children who live in healthy environments their MAOA gene may never be activated and expressed. This example demonstrated that there is a gene by environment interaction, which should be taken into account when considering the effect of environment or the effect of biological factors on personality.

**Personality stability across life span**

Despite the genetic component of personality as discovered in twin and adoption studies, the biological factors account for about half of the total variance, which means the rest of the variance is most likely explained by environmental and other factors. In
light of the influence of environmental factors there has been increasing interest in personality malleability or change. Theorists proposed four types of personality stability and change (Robins, Fraley, Roberts & Trzesniewski, 2001), which are normative change, rank-order stability, structural stability, and ipsative stability. Normative change is the change of the mean-level personality traits of a population as a whole. Rank-order stability refers to the degree to which the relative ordering of individuals on a trait changes over time, which is assessed by the intercorrelation between personality scores across times. The structural stability refers to the stability of the personality dimensions. Finally, the ipsative stability is the degree to which the levels of personality traits change or remain invariant for an individual over time. Ipsative stability is the only one of the four that concerns the change of intra-individual personality. Many of the empirical studies related to personality stability concern the normative stability and focus on the effect of age and significant life events on the mean-level change of a particular group. Fewer studies have been conducted on ipsative stability as it is difficult to calculate indices of ipsative stability for each participant. However, studies have found that about 20% to 30% of participants demonstrated individual personality change (Vaidya, Gray, Haig & Watson, 2002). In this longitudinal study, researchers calculated the reliable change index for each participant based on their two personality ratings in a two and a half year period, and found that most people did not change over time, but some demonstrated significant personality change over time. Their analysis on rank-order stability also revealed that the dimensions of Extraversion and Openness were more stable than the other three dimensions.
Within the Five Factor Theory (Costa & McCrae, 1992) a genetic explanation is proposed to account for ipsative stability. It is argued that most of the personality development and change occurs in adolescence and young adulthood, and remains stable (or what set in plaster) after 30 (Costa & McCrae, 1994). It is suggested that this developmental process is a genetic phenomenon and although influenced by the environment is not driven by it. That is, no matter what environment an individual is in or what life events an individual goes through, his/her personality will develop in a certain way that is already pre-programmed by genes, and when personality development is complete around the age of 30, it will no longer change across the remainder of the life span. Traits are considered as “endogenous dispositions that follow intrinsic paths of development essentially independent of environmental influences” (McCrae et al., 2000, p. 173).

However, recent and growing evidence points to continuous change of personality across the lifespan, and that context can lead to personality variability. For example, one study with a very large sample of adults aged 21-60 years showed that changes across the five dimensions do not stop after age 30 and in fact for Agreeableness change increased after age 30 (Srivastava, John, Gosling & Potter, 2003). Furthermore, personality rank-order stability is an inverse-U curve with mean-level changes across the lifespan (e.g., Specht, Egloff & Schmukle, 2011; Wortman, Lucas & Donnellan, 2012).

Cross-sectional studies on aging and personality suggest that there is a tendency for people to become more agreeable, conscientious, and less extraverted and neurotic
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across the life span (Donnellan & Lucas, 2008; Helson, Kwan, John, & Jones, 2002; McCrae et al., 2000; Roberts, Walton, & Viechtbauer, 2006; Srivastava, John, Gosling, & Potter, 2003). In the 2000 paper, McCrae and colleagues argued that context or environment plays a role in the expression of personality in behavioural patterns or experiences, but not on personality traits. They argued that if personality development was under the influence of environment factors, people from different cultural background would have different personality development trajectories, but that was not found to be the case. Data from a range of countries including Italy, Croatia, Russia, Turkey, China, Germany, the United Kingdom, and Spain all supported the findings that Extraversion, Neuroticism and Openness decrease with age, and Agreeableness and Conscientiousness increase with age (McCrae et al., 1999; Xiu, Wu, Wu, and Shui, 1996). McCrae attributed this personality development to functions of the genes turning on and off during the lifespan. It is also possible that people experience similar life changes as a function of stages of development (starting work, relationships and marriage, parenting) and it is the consistency in the life trajectory that produces cross-cultural similarities (not the maturation of genes per se). These ideas suggest that it is stable life contexts and not genetics that can help explain personality stability. Although having a strong genetic component, personality is gradually accepted to be flexible to an extent. Similarly, if life events are in flux and people experience life change personality shift may also be expected (Branscombe & Reynolds, 2015; Turner et al., 2006)).
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Alternative frameworks to understand personality malleability

In addition to empirical evidence that suggest personality is subject to change by context, several theoretical frameworks outline the influence of the environment on personality. The social investment principle focuses on the role of life experiences, the Personality and Role Identity Structural Model (PRISM) explores the structure of personality and integrates roles, and the Cognitive-Affective system theory addresses the interaction between people and the context. In this section, we will introduce these three frameworks and their central argument, along with empirical evidence that supports their arguments.

The Cognitive-Affective system theory by Mischel and Shoda (1995) is essentially a mediation model of personality where situations are the meditator. Similar to the Five Factor Model, Mischel and colleagues also assume the invariance of personality, but proposed this theory to resolve the discrepancy between this assumption and the abundant evidence of personality and behaviour variation across situations. In this theory, situations are not simply a set of stimulus in the environment that activates a set of cognitive and affective reactions based on the individual’s prior experiences in similar situations. To an individual, appropriate behaviour under certain situation is not only determined by the features in the external environment, but also by features that are derived from past experiences, understandings, thoughts and fantasies related to that situation. Reaction to a situation depends on how one interprets the situation along with the affective response to the situation. Features of a situation that holds no meaning to an individual has no impact on one’s reaction. A situation needs to go through cognitive
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and emotional encoding to have an impact on behaviour and personality expression. 
Through this process, people transform their cognitions and affect into stable, 
meaningful patterns of social action in relationship to situations they experience. This 
process comes from the Cognitive-Affective personality system, which reflects the inner 
characteristics of the person. Therefore, it is not appropriate to merely look at 
someone’s behaviour to assess his or her personality. The subjective perception of the 
situation must be taken into account.

The central argument is that personality is not necessarily altered if an individual 
behaves differently across situations. Rather, personality is a stable system that mediates 
how the individual responds to contextual information and generates social behaviour. 
Patterns of variability are seen as reflecting essential expressions of a stable personality 
system rather than error. They also assume that people have the ability to adjust their 
behaviour based on the judgement of the situation, or rather, the psychological features 
of the situation.

Different from the Cognitive-Affective system theory, both the social 
investment principle and the PRISM endorsed the idea of personality variability. The 
social investment principle builds on the assumptions that people make psychological 
commitments in different social roles such as work, marriage, family, community or as 
a citizen (Roberts, Wood & Smith, 2005). Each of these social roles comes with a set of 
expectations and norms about what type of behaviour is desirable and expected when 
performing the role. For example being a spouse comes with the expectation of being 
emotionally stable and agreeable, being an employee come with the expectation of
being conscientious and finish work on time with a relatively high quality. When this expectation is being met people receive emotional or material reward, which could promote personality development in the normative direction of being more socially dominant, agreeable, conscientious and less neurotic. Within social investment theory and research it is hypothesized that committing to a social role also means accepting the norms and being committed to meeting the expectations associated with it. The crucial process of the social investment principle is that people need to commit to these new social roles which at the outset are “outside” of one’s existing self structure. It is through psychological commitment (or identification) that the expectations and contingencies of these new social roles become a part of one’s existing self structure and can come to shape people’s attitudes and behaviours and their self-definition including personality. This psychological commitment is what links social roles and one’s personality. If one adopted a new social role but did not commit to it or make social investment to meet the norm of the role, limited personality change should be observed.

There is research evidence that supports the relationship between role experiences and personality change. Both working experience and relationship quality have been shown to influence personality. For example, having a romantic partner was related to a decrease in sense of insecurity and predicted the increase in self-esteem and a decrease in Neuroticism and shyness (Neyer & Lehnart, 2007). Also, the satisfaction people feel in their relationships and work was associated with a decrease in Neuroticism and an increase in Extraversion (Scollon & Diener, 2006). Roberts and
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colleagues’ study on work experience also linked aspects of work status with personality change, supporting the idea that role commitment predicted personality change (Roberts, Caspi & Moffitt, 2003; Roberts & Chapman, 2000). They discovered that young adults who obtained higher levels of resource power in their jobs became more socially dominant, hard-working and happy. Higher work satisfaction was also associated with decreases in Neuroticism. Similarly, it was found that high labour force participation was associated with increases in self-confidence, assertiveness and status seeking among women (Clausen & Gilens, 1990). These results suggest that experiences at work can shape personality.

More compelling evidence comes from research examining the relationship between role commitment and personality change. Roberts, O’Donnell and Robins (2004) linked life goals with personality change in their longitudinal study of college students, and found that not only do life goals correlate with personality, the change in life goals also predicted personality change. For example, endorsement of relationship goals (getting married and start a family) correlated with higher Extraversion and Agreeableness, and young adults who valued relationship goals more over time demonstrated increases in Agreeableness and Conscientiousness. Those who valued economic goals more over time increased in Conscientiousness. This change is considered to be associated with an increase in investment in these goals. Meta-analysis on the social investment in work, family, religion and volunteer roles also supports the effect of investment in personality change (Lodi-Smith & Roberts, 2007). For example, work-related social investment was significantly related to Agreeableness,
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Conscientiousness and Emotional Stability, and psychological indices of work investment were more strongly related to personality traits than demographic indices, such as job attendance and tenure. This research supports the notion that identifying with one’s social role is the crucial link between obtaining a social role and personality change. The same pattern was also found for family and religious social investments (Lodi-Smith & Roberts, 2007).

However, despite emphasizing the importance of commitment and investment into social roles, such as work and family, there are a few studies which have tried to gather empirical evidence on role expectation or role investment. Moreover, going through traumatic life events such as losing a spouse or natural disaster can also induce personality change, which the social investment principle is unable to explain. Nevertheless, the social investment principle provides a strong alternative explanation to personality development and change.

In addition to the social investment principle, researchers proposed the Personality and Role Identity Structural Model (PRISM; Wood & Roberts, 2006) that emphasizes the influence of the situation on personality. Despite building up from the same concept of role expectation, PRISM is a more complex model that concerns the structure of personality, rather than roles, as a mechanism of personality change. In PRISM, roles come with sets of expectations and requirements that capture the psychological meaning of situations. For example, one’s professional role may require one to be hard working, assertive and confident, while one’s role in a family may require one to be agreeable, emotionally stable and warm. To meet these expectations
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and requirements one needs to behave differently across situations and roles, therefore demonstrating different personality traits through their different behaviours. This assumption is the same as in the social investment principle, but what is unique in PRISM is the emphasis on role identity and the proposed structure of personality. Role identity is the accumulated characteristics and behaviours within a social role, such as how one sees oneself or behaves as a family member, a friend or a co-worker. As people commit to and internalize their social roles, the norms of the role became meaningful to them and shape their personality and behaviour in the direction of the norms. Possessing multiple role identities means people have different sets of perceptions of who they are under different roles, such as how they see themselves as an employee, as a father, as a husband or as a religious person. These role identities aggregate into a general identity that represents how the person sees oneself in general. In this way, personality can be broken down into four levels, with general identity on the top of the hierarchy, role identities at the next level, aggregated role experiences nested under each role identity at the third level of the hierarchy, and finally at the bottom are single role experiences. In this model it is clear that not only can situations and experiences shape one’s personality, people can demonstrate personality variation across different situations and roles. For example, someone who is emotionally stable at work can have large mood swings when in a family context with loved ones, or someone generally shy and quiet can be extraverted when the work role demands it. In addition, this model may be able to explain the limited impact of single life experience on general personality traits. The
role identities may serve as a buffer for the negative impact of traumatic life events by 
isolating the impact within a particular role identity.

A study measuring role experiences and personality in general, within romantic 
and other key role identities, discovered that role experiences under different role 
identities were not correlated, which supported the relatively independent structure of 
role identities in the model (Wood & Roberts, 2006). In addition, participants 
demonstrated differences between the mean-levels of general and role-identity 
personality traits. For example, they reported themselves to be higher on Extraversion 
and Agreeableness in romantic identity contexts and less agreeable but more 
conscientious in work identity than in general identity contexts. Also, the correlation 
between role identity traits and the correlations between role identities and general 
identity were very high, but the correlation between role identities reduced significantly 
after controlling for the correlation with general identity traits. This also supports the 
thory that the general identity is the result of an aggregate of the different all role 
identities.

The Cognitive-Affective system theory, the social investment principle and the 
PRISM all recognized the variability in personality across contexts, and are developed 
to explain this variability. However, the Cognitive-Affective system theory sees this 
variability as the outcome of an interaction between environmental factors and the 
underlying stable personality system, whereas both the social investment principle and 
the PRISM associate this variability to the different expectations and norms that come 
with different situations. PRISM further argues that this variability is the product of
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people switching between their different social roles and their effort to meet the
localised norms and expectations. Under certain conditions, changes in the personality
system can be triggered. A longitudinal follow-up study found that personality
associated with role identities was as stable as general identity personality, and their
changes were correlated. Moreover, role identity personality change by role experiences
was larger than general identity personality change by role experiences (Wood &
Roberts, 2006). These results in large support the hierarchical model of personality and
the notion of role identity aggregate into general identity personality.

This argument is very similar to the social identity perspective in social
psychology and the dynamic constructivist approach in cultural psychology. The
research methods used to support this argument are also similar and can be adapted to
cultural and social studies of personality variability by cultural and social factors, which
we will talk about in more detail in the next chapter.

Research Methods concerning personality stability and variability

There are several ways to research personality across contexts. Heller and
colleagues identified them as the explicit method, the diary approach, and the
manipulation method (Heller, Watson, Komar, Min & Perunovic, 2007). The more
traditional way is to ask participants to rate their personality explicitly across contexts
and roles, for example “rate your personality of you as a student/friend/employee”. Suh
(2002) asked participants to describe themselves first as “general self” on 25 personality
traits, then to rate themselves on how they were when they interact with parents, loved
one, friend or a stranger. The results indicated that some participants demonstrated high
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consistency across these roles, but for others their self-view can vary significantly across contexts, to the point that their five profiles were not significantly correlated. These findings suggest that personality stability might be an individual characteristic. This explicit method can be applied to bicultural and cross-cultural research, however very few studies have used this method. Although this research method is widely used in personality studies, the explicit measure may create artificial variability between roles (Heller et al., 2007). This weakness urged researchers to develop more subtle assessments of personality variability across roles and contexts.

One novel approach to investigate personality variability across roles is the diary design. When participants reported their personality and roles, researchers aggregated the personality states within each role in a bottom-up method in forming role personalities. This is a relatively new method to measure personality variability, but has been widely used to measure relationships, emotions or activities (e.g., Gershuny, 2002; Kirchler, 1989). The merit of this approach is that it collects personality patterns for each role experience rather than the role personality aggregated from the experiences, and should be more accurate. However this method may not apply to bicultural studies as in many circumstances it might be difficult for bicultural individuals to be aware of the activated cultural mindset they have under the specific context, and the identities may not be mutually exclusively in some contexts.

Finally, personality variability can be measured across roles and contexts implicitly, either by manipulating the identities under which the personality will be measured, or by asking participants to complete personality measures across situations.
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rather than roles (e.g., “complete the questionnaire during or immediately after an academic-related situation” rather than “complete the questionnaire while thinking yourself as a student”). In this way personality under different contexts can be measured without the participant knowing the research intention. This method is also widely used in cross-cultural and bicultural studies, as well as social identity research (e.g., Ng & Lai, 2009; Reynolds et al., 2012).

**Summary**

In this chapter we reviewed the development of trait theory and the Five Factor Model, the argument of personality being genetically determined and stable across context, and new developments in the field that consider personality as variable and able to change across contexts. Several theoretical models of personality variability, and relevant research methods to explore personality variability, were outlined in this section. Overall, personality change is demonstrated to fluctuate as a function of age, major life events and societal environment. Theories propose that it is the commitment people make to meet the expectations that come with the social roles that contributes to the long-term change in personality. Also, people have role identities which come with distinct role personality patterns, and when people switch between these roles they exhibit personality variability across context. In both the social investment principle and the Personality and Role Identity Structural Model, role identity is placed in the centre.

This perspective is similar to the social identity perspective (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher & Wetherell, 1987), which we will describe in detail in the next chapter. The more people commit to a social role, the more they will
internalize the norms, values and behaviours associated with the role. Similarly, people can internalize the norms, values and behaviours of a social group and the strength of this internalization depends on their identification with the group, or in other words, the cognitive and emotional significance of the group to them. However, within the literature of personality psychology there is limited work conceptualising context and role identity in this way.

There is a rich literature on personality variability and changes of self-definition by context in the cross-cultural and bicultural psychology. It is possible that the life event of migration to another culture can change one’s personality pattern. Culture can also be seen as a different context that shapes who we are and can help explain variability in our self-concepts. Obtaining a new cultural identity, not only influences people as an event of significant life change, it also means a completely new social environment. Adopting a new living environment, new language and facing new life challenges should also shape personality. The Cognitive and Affective System Theory of Personality argues that we need to factor in the influence of environment when we look at personality, and the Personality and Role Identity Structural Model propose and provide evidence that personality is subject to change by role identities and context. In the broader field of cultural psychology and social psychology, context and situational factors shape how we perceive the world and ourselves, and determine our behaviour. The framework and empirical evidence provided by cultural psychology and the social identity perspective can provide support to personality variability across context. In the next chapter, we will review how culture and social identity shape the way people...
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perceive themselves and the way people act, and how switching between cultural and social identities may change personality and behaviour.
Chapter 3: Cultural and social theories in explaining self-concept flexibility

In the last chapter we reviewed personality and trait theory, and concluded that the validity of Five Factor Model is supported by cross-cultural studies (with some modification). Debate also continues to surround the genetic versus environment determination of personality as the field moves away from the twin methodology to assessing genetic material. We also reviewed evidence that shows that personality can vary across the developmental cycle and in response to different contexts (e.g., roles, identities) in the short term, and also can be shaped by life experiences over the longer term. In this chapter, we will discuss two factors that define people’s social context; the societal culture in which they live (which affects language, rituals, social norms, values and expectations) and the identities that relate to these cultural group memberships (e.g., Chinese, Australian). These are two factors that are interdependent but function at different levels; culture usually is seen as the broader context or back-drop, whereas social identity is usually activated by the immediate context. It is argued that the salient identity in a particular context can directly shapes self-definition (including as defined by personality dimensions), motivation and behaviour (Turner & Onorato, 1999). For example, a group of people may all share the same cultural group of being Chinese but it is when this cultural self-identity is meaningful and salient that culture will have most impact on attitudes and behaviour (Kitayama & Tompson, 2010) particularly when salient in a given context.

In this chapter, the aim is to review cultural and social factors that shape the self. This is important in the context of the thesis because the central idea is that our self-
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concept and personality is culturally and socially determined. In order to place these ideas in the wider context of existing theory and research in this chapter we first consider what culture is and how it is argued to influence individual personality and behaviour from the point of view of cross-cultural and bicultural psychology. The argument that the self is culturally determined is outlined. The focus of this part will be on biculturalism and acculturation.

In the second section, we will talk about social identity process in personality and examine the question of stability and variability more closely from this perspective. In the third section we move to talk about cultural (social) identity specifically, and outline the empirical program that forms an important part of this thesis. What emerges is evidence of connection and points of integration between the role theories, bicultural self literature of cultural psychology and the social identity perspective in social psychology. The empirical studies in this thesis are designed to investigate the integration of these perspectives and to showcase how these theories may advance understandings of personality stability and variability.

Culture and cross-cultural psychology: Biculturalism and acculturation

There are many ways of defining culture, but it usually is seen as a historically derived pattern of representations, behaviours and artefacts that spread in a society. Cole (1998) defines it as “the entire pool of artifacts accumulated by the social group in the course of its historical experience” (p.110). Culture and language define the broad social environmental context in which humans function as individuals and impacts on the individuals’ psychological functioning. In this way, culture can be defined as “networks
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of knowledge, consisting of learned routines of thinking, feeling, and interacting with other people, as well as a corpus of substantive assertions and ideas about aspects of the world” (Wyer, Chiu & Hong, 2009, p.4). Culture then affects the way individuals engage with and behave in the environment, but also the underlying psychological process behind these behaviours (what Turner and Oakes, 1997 refer to as the socially-structured mind).

Cultural psychology, from this sociocultural perspective, should focus on the implicit and explicit patterns of meaning, practices, and how people are incorporated and changed. It should not research culture as a set of traits different in levels among different groups of people such as Latinos or Caucasians. There are currently five major approaches that relate to the dynamic influence of culture on people and the society-at-large (Markus & Hamedani, 2007). We will outline the five approaches below, and give examples of the empirical work of these approaches.

Within the Dimensional approach it is argued that there are characteristics within the sociocultural system, and that culture can be classified or differentiated on these dimensions. The combination of these dimensions determines the culture and can be used to explain cultural differences in behaviours, beliefs and customs on the individual level. Much like the personality approach where traits were being categorized into dimensions (which we reviewed in the previous chapter), this approach aims to identify ways to categorize culture into key dimensions. Triandis (1989) called these dimensions “cultural syndromes” that can be used as parameters to explain the distribution of behaviour patterns, attitudes and personality across cultures and contexts.
Hofstede (1980) used the IBM database that included the responses from IBM employees’ attitude survey. Responses were collected in 71 countries and based on his analyses Hofstede identified four dimensions of national culture: Power Distance; Uncertainty Avoidance; Individualism vs. Collectivism; and Masculinity vs. Femininity. Later he added two more dimensions (Long-term versus Short-term Orientation, and Indulgence versus Restraint) but the distribution of these dimensions among cultures were less widely available. Power Distance refers to the extent to which the less powerful members of a group or organization endorse the idea of power inequality. In a culture with high Power Distance, people would exhibit obedience rather than initiative. Uncertainty Avoidance refers to how people in a culture cope with unorganized and unstructured situations. Cultures high on Uncertainty Avoiding tend to be uncomfortable with unstructured novel situations and try to minimize the presence of these situations by strict regulations and rules. Their people arguably have higher levels of anxiety and are more neurotic. Individualism versus Collectivism refers to the degree to which people bond with their groups. Within individualistic cultures people emphasize their own free will and they usually do not have tight bonds with other group members. In collective cultures people put the interest of their group before their own and bond with other group members more strongly. Masculinity and Femininity refers to the roles a culture distributes to men. In masculine cultures men are expected to be very assertive and competitive and the gap between the expectations of men and women is wide. In a feminine culture men are expected to be caring and modest, similar to its expectations of women. Long and Short-term Orientation is about connecting the past to
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the present and future. Cultures with Short-term Orientations respect the tradition, emphasize fulfilling social obligations and protect one’s tradition. Long-term Orientation are about values adaptation, thrift and perseverance. Finally, Indulgence vs. Restraint refers to the degree to which people believe they should enjoy their life and have fun.

There are other ways of categorizing cultural dimensions. Triandis used the dimensions of tight vs. loose, complexity, active vs. passive, honour, individualism vs. collectivism, and vertical-horizontal relationships (Triandis, 1996). Schwartz categorized cultural difference on mastery, hierarchy, conservatism, affective autonomy, intellectual authority, egalitarian commitment, and harmony (Schwartz & Bilsky, 1990). The most widely used dimension, however, is Individualism vs. Collectivism. Countless studies have used this dimension to try to explain the cultural differences that are observed in cross-cultural comparisons. In the last chapter we mentioned the attempt to link personality dimensions with Hofstede’s culture dimensions (Ching et al., 2013). For example in that study, there was a strong correlation between Individualism and Extraversion. This is consistent with the distribution of both these two factors such that Extraversion is high in Western cultures which endorse Individualism, and low for Eastern cultures where Collectivism is well-accepted. Uncertainty Avoidance is high for Japanese and German speaking countries, but low for Anglo and Chinese cultures, which coincides with the distribution pattern of Neuroticism and the reverse of Agreeableness. We will come back to the link between culture and personality after we describe the five approaches of cultural psychology.
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Sociocultural models focus more on the interaction between the sociocultural environment and the self. For example, the cultural model of agency (Kitayama & Uchida, 2005) argues that westerners usually have independent agency and easterners usually have interdependent agency. That is, westerners usually construct their action based on their personal needs and goals, whereas easterners usually make decisions based on the desires and ideas of people around them with their social networks.

Although agency, defined as one’s ability to act in accordance with their own set of standards and rules, should be personal by nature, the force behind every personal decision and motivation also involves the sociocultural environment. In eastern cultures where opinions and desires of significant others are structured as part of the self, even the most personal aspect of the self can be interdependent rather than completely independent. As agency is a cultural construction, it means that our motivation, emotion and cognition are also culturally determined. Culture influences the action and decisions people make and often in an implicit way. This approach therefore tries to establish the influence of culture by studying personal level variables such as the self systems, agency, cognitive and social development, well-being, emotions.

The tool kit approach (Nisbett, Peng, Choi & Norenzayan, 2001) describes culture as a set of tools that provide guidance for people to perceive and interpret meaning in the world. This tool kit comes from a long term exposure to the intellectual history, beliefs and theories about how the world is constructed and functions. This leads Asians to adopt a more holistic cognitive style whereas Westerners tend to adopt an analytic cognitive style. It is argued that this difference in cognitive style can explain
many cultural differences observed in cross-cultural studies. This approach is similar to the sociocultural models approach as they both see culture as having an impact on fundamental psychological processes, although the tool kit approach focus more on the cognitive process and the sociocultural model approach focuses more on the construction of the self.

The ecocultural approach portrays the cultural context as a combination of ecological and socio-political factors, and investigates the interdependent relationship between cultural and psychological process by examining cultural adaptation at both population and individual level. For example, Berry (2003) proposed the bidimensional model of acculturation, a phenomenon of cultural adaptation at the individual level. The basic assumption of the ecocultural approach is that basic psychological processes, such as cognitive processing and perception, present in every culture and cultural variation occur as each culture faces unique adaptation challenges in the physical and social environment (Berry, 2000). The adaptation to the objective requirements of this physical and social environment leads to variations in culture, and impact on psychological functioning. For any psychological processes and behaviour, there is a universal shared component for any human being, but there is also the component of cultural variations created by adaptation to the unique environments people live in. The concept of indigenous cognition (Berry, 1993) was proposed as acknowledgment of this culture variation and to avoid misuse of the terms, measures and standards developed in one culture. This approach has been adopted to study variations in the development of
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cognitive competence and adaptation (e.g., Berry, 2004), cognitive processes and acculturation.

The dynamic constructivist approach (Hong, Morris, Chiu & Benet-Martinez, 2000) has a stronger emphasis on the social context than the other approaches. From this approach reducing culture to dimensions does not make sense. Culture is not considered to be a general structure that functions in all conditions, it is rather an internalized form of a loose network of domain-specific knowledge systems shared widely within a culture. Many beliefs may function under one domain but not in other domains and different or sometimes even contradicted beliefs can co-exist in the one culture because they function in different domains and in different ways. It is the context that determines which beliefs will be activated under the current condition. Whether culture impacts cognition or not depends on the social context and the accessibility, availability and applicability of shared assumptions in the context. The influence of culture on cognition are circumscribed by the context of knowledge application, rather than always and all the time. In addition to exploring the effects of culture on cognitions, the dynamic constructivist approach also seeks to identify when and why cultural influences on human psychology will emerge and disappear. This approach frequently uses cultural priming to activate one cultural mindset or another among bicultural individuals and observed behaviours, attitudes and values corresponding with the cultural frame that is made salient, known as the phenomenon of cultural frame switching (CFS). CFS is described in more detail in the first empirical chapter of this thesis.
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Both the ecocultural approach and the dynamic constructivist approach emphasize on the importance of context, and both these approaches expanded their research from cross-cultural comparison to bicultural studies, as it is among bicultural individuals that one can see the adaptation process of a new culture and explore the relationship between sociocultural factors and psychological processes across various situations. The dimension approach and the tool kit approach use cross-cultural comparison because they focus more on using culture to explain differences among groups of people. Of course, the five approaches are not exclusive to one another and no one of them is superior to others, as they provide different perspectives on how to capture the dynamic influence of culture on the person. As these approaches focus on different areas and analyse the problem from different angles, the best results may come from utilizing multiple approaches in combination.

For example, one study that used the methods of the dynamic constructivist approach to research the idea of a culturally embedded construction of the self is the fMRI study by Ng and colleagues (Ng, Han, Mao & Lai, 2010). They proposed that although self-inclusiveness and self-other differentiation are both universal mechanisms, the degree of inclusiveness in defining the self is influenced by cultural context. This hypothesis came from the sociocultural model of the self. The different ways people from the east and the west construct the self are interdependent and independent self-construals (Markus & Kitayama, 1991), which closely parallels the Collectivism versus Individualism dimension of the dimensional approach. Previous empirical evidence has suggested that the Chinese had a more interdependent self-
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construal, whereas Westerners had more independent self-construal with stronger self-other differentiation (Zhu, Zhang, Fan & Han, 2007). In that study, Chinese participants were found to activate the same brain area when thinking about oneself and their mothers, whereas Westerners activated different brain areas to represent themselves and their mothers (Zhu et al., 2007). With cultural priming using pictures that symbolized Western and Chinese cultures, Ng and colleagues replicated this result using bicultural Hong Kong participants, and found that when primed with Western culture, bicultural Hong Kong participants revealed differentiated brain activity between self and the non-important target person and even stronger differentiation between self and mother. When primed with Chinese cultural symbols, though, the brain activity for self and mother and non-important person showed no differentiation. This result provided neurological evidence that supports cultural frame switching, a phenomenon that the cultural cues embedded in situations make corresponding cultural frames to become salient and lead bicultural individuals to behave according to the current cultural context under guidance of the activated cultural frame. This research also supports the idea that Easterners and Westerners differ on level of self-inclusiveness and self-other differentiation and their styles of self-construal, and provided biologically based support for the idea that the mechanism underlying self-presentation and personality is culturally sensitive.

These models established different ways that culture influences the way we perceive ourselves and the world. Dimensions of the culture such as individualism, power distance, uncertainty avoidance and masculinity contribute to how we process the
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world (the Dimensional Approach). Culture shapes our motivations and decision-making style, which means its influences the self in implicit ways (the sociocultural models). Culture provides tools for us to perceive and understand the world. It is a force that casts influence on our most fundamental psychological processes (the tool kit approach). During the acquisition of a new culture, we can see its impact more clearly as the process of acculturation is when one learns all the assumptions and knowledge and this new learning can change one’s self-perception and cognitive processes (the ecocultural approach and the dynamic constructivist approach). The approaches and models analyse the field from different standpoints and angles, providing us with a more complete picture of how to understand personality variability and change in the self-concept as a function of cultural contexts. They each have their own merits and focus, and are not mutually exclusive.

Self and personality as culturally based concepts

From the perspective of cultural psychology, culture and the self are mutually constituted. Cultural psychology actively rejects the idea that culture is merely a variable that casts influence on the dependent variable of personality. Rather, as the definition of culture by Cole (1998) explained, culture provides an interpretive framework by which people make sense of the environment, understand patterns of behaviours and organize their own behaviours. Culture is not an independent variable external to the self, rather it is a force that shapes and constitute the human mind and the self. Culture should be taken into account when interpreting an individual’s personality and behaviour. Taking the case of agency as an example, which reflects how people
make decisions about their behaviours, Japanese people have interdependent agency whereas Westerners have an independent style of agency (Kitayama & Uchida, 2005). The culturally constituted nature of this construct challenges existing psychological theories and motivates further consideration of what other constructs can be culturally constituted, for instance behaviour. Personality and behaviour could also be cultural products and not just an outcome of genetic make-up and personal experiences. The underlying assumptions concerning the appropriateness of behaviour can be different in different cultures, resulting in different ways of interpreting behaviour, and in some cases a behaviour can be perceived to reflect different personality traits in different cultural frameworks. For example, a smiling face is associated with being intelligent in the American culture, but not in the Japanese culture (Matsumoto & Kudoh, 1993). In the American cultural context, the behaviour of smiling is associated with high level of Openness; however this association does not exist in Japanese culture. The different ways of perceiving personality across cultures suggests that personality is also a culturally constructed concept. It means that when people move to a new culture and internalize a new set of cultural knowledge and norms, they also accept a new set of implicit theories on how to understand behaviour and related personality. This could lead to changes in their behaviour and their self-concepts.

In fact, it could be argued that the definition of personality and the underlying assumption of trait theory reflected the individualism that imbues Western cultures. The underlying assumption is that a person is an autonomous entity defined by a set of attributes and qualities, and that behaviour is driven by internal attributes and processes
IDENTITY PROCESSES IN PERSONALITY VARIABILITY (Markus & Kitayama, 1991). This assumption may not make sense in other cultures where the self is constituted through interaction with others and defined as “a connected, fluid, flexible, committed being who is bound to others” (Markus & Kitayama, 1998, p. 69). For example, in Asian cultures, relationality (being highly attuned to social relations and the expectation of others) is an important aspect of social life and is cultivated in families and in schools. Being interdependent is an aspect of Asian personality, however it is not reflected in Western personality theories nor measured in Western-developed personality measurement tools. In the Chinese Personality Assessment Inventory (CPAI, Cheung et al., 1996), a sixth factor of Interpersonal Relatedness was found to be robust and culturally relevant. Other factors, although similar to the factors in the Big Five model, have a different structure. The factor of Openness was missing from the first version of this Chinese personality structure, but later added in CPAI-2 (Cheung et al., 2001). Using a cultural perspective within personality theory and research raises questions about the generality of a more Western approach to personhood, individuality and the self which is reflected in the style of measurement and dimensions of personality.

Along these lines, Markus and Kitayama (1998) are opposed to using self-reported inventories to measure personality, as rating oneself on a list of distinctive characteristics is more natural and appropriate for people from an individualistic cultural context who are more practised at describing themselves using trait attributes. In fact, a different measure, the Twenty Statements Test (TST) might be more appropriate for people in collective cultures, such as East Asian, as it allows these
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people to represent themselves in more relational and flexible ways. The TST (Kuhn & McPartland, 1954) is an open-end inventory used to measure people’s spontaneous self-concept, in which participants write up to twenty statements about themselves to answer the question “I am...”. Indeed when asked to describe themselves using TST, Asians mention more concrete, context-specific characteristics or make social descriptions about themselves more so than American respondents. In contrast, Americans use abstract personality traits, context-free characteristics and autonomous self-descriptions to describe themselves more than Asians (Cousins, 1989). But as the TST is used primarily as a tool to measure spontaneous self-concept, which includes one’s personality, attributes, self-esteem, and some aspects of identity, it has been questioned as a measure of personality per se.

The TST is widely used in cross-cultural and bicultural research, as it captures and reveals cultural differences assessed at the individual level (e.g., Pouliasi & Verkuyten, 2012). Using a modified version of TST, Hong and colleagues (Hong, Ip, Chiu, Morris & Menon, 2001) asked Hong Kong Chinese and American participants to complete TST in the individual self condition (“I”) and then in the cultural identity salient condition (“I being Chinese/American), or when their collective self and cultural identity of being Chinese and Americans were activated (“we being Chinese” or “we being Americans”). Comparing the individual self to the collective self condition, both Hong Kong Chinese and Americans reported more duties and behaviours, and less physical attributes and psychological processes (attitudes, values, motivation, wishes and emotions) in the collective self condition. Comparing the self conditions to the
cultural identity conditions, Hong Kong Chinese described themselves with more duties whereas Americans described themselves with more rights (i.e., voting rights, privileges) in the cultural identity condition. The cultural difference between Chinese and Americans was reinforced when the cultural identity was activated.

These results support the dynamic constructivist approach, which suggests that the influence of culture on the self is context dependent and can be manipulated. The same cultural difference in the self-concept was also found when manipulating bicultural Chinese American participants’ cultural identities. This result not only supports the cultural constitution of the self, but also points out an interesting direction for bicultural research. Within bicultural individuals, two different cultural identities can co-exist and can be activated under different contexts to guide the mental processes, self-concept and behaviours. This brings us to our next section of the thesis, the process of acculturation, biculturalism and multiculturalism, and multiple identities.

**Multiculturalism and Biculturalism**

Both the ecocultural approach and the dynamic constructivist approach advocate research on the acculturation processes of bicultural individuals to see clearly the influence of culture on basic psychological processes. The above TST study on bicultural American and Chinese individuals also demonstrated this influence of how people perceive themselves. Biculturalism, multiculturalism and the acculturation processes are popular research areas within cultural psychology. Moreover, given increasing global migration the topics of biculturalism and multiculturalism have been increasingly the subject of social and political debate, and a focus of social
psychological research. The influx of immigrants has a huge impact on a people’s existing national identity, intergroup relations and social cohesion. It also creates disruption and opportunities for immigrants through the acculturation process, sociocultural and psychological adaptation, identity loss and gain, and cultural transition. It is argued that when there is a mismatch between the new host society (acquired) and immigrants preferred strategies on acculturation, intergroup (ethnic) relations can deteriorate, and social cohesion may decrease (Bourhis, Moise, Perreault & Senecal, 1997). Much theories and research focuses on this transition from old to acquired culture and its psychological consequences for one’s values and beliefs, attitudes and behaviour.

What happens to immigrants after they moved to a new country and how would the new culture affect their self-concept and behaviour? The neuro-culture interaction model by Kitayama and colleagues (Kitayama & Uskul, 2010; see also Kitayama & Tompson, 2010) proposed a way culture can affect behaviour and the brain. Culture as an external environment provides behavioural routines known as practices. These practices are loaded with cultural values such as independence vs. interdependence, shaped by ecological and societal factors. The pool of behavioural routines accumulated into cultural wisdom are those that help people figure out how to survive and what is good or bad in the social and eco environment. The wisdom accumulated in the mindsets of cultural members and for newcomers can change the brain connectivity when people engage in these behavioural routines actively and repeatedly. That is, repeat engagement in tasks involved with cultural values should lead to change in
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functional connectivity and the physical structure of the brain (Draganski et al., 2004). However, this engagement must be voluntary and wilful for this cultural influence to occur. Only this way can one perceive their goal as something that they want to achieve and approach it with attention, effort and curiosity. In animal studies it was clearly established that voluntary engagement in physical activity leads to increases in the production of neurons in mice, but forced engagement did not result in any increases (van Praag, Kempermann & Gage, 1999). Furthermore, people who agree with and identify with the cultural values may be more likely to wilfully and voluntarily engage in these culturally scripted behaviour routines, that is, when they perceive congruence between their self-concept and the values of the culture (Kitayama & Tompson, 2010). The more people identify with these cultural practices, the more they are likely to engage in them actively and repeatedly, and potentially the larger change in their brain connectivity and structure.

When culturally patterned neural activities are formed through long-term potentiation (persistent strengthening of synapses), people are more likely to spontaneously perform such culturally scripted behaviours. The culturally modified brain connectivity may foster relevant culturally scripted behaviour and lead to changes in behaviour (Kitayama & Tompson, 2010). This culturally normative behavioural pattern may in turn affirm their membership of the cultural group and reinforce the identification with that cultural group.

Although the core of this model is brain connectivity, it puts great emphasis on cultural self-identity. As the model proposed that neuroplasticity should occur when one
willingly and repeatedly engages in cultural practices, it means that those with high levels of cultural self-identity should have long-term change in behaviour and neural connectivity, and more so than those with low cultural self-identity (because they would engage in those practices unwillingly or being forced). This model is somewhat similar to the social investment principle of personality change (as outlined in Chapter 2), which argues that it is the commitment one puts into his or her social role that leads to the desire to meet the set of requirements that are associated with the role, and a person may change his or her personality in the process to meet these requirements.

Of course, in the neuro-culture interaction model, whether one engages in cultural practices or not and whether they perform those practices willingly or not can lead to different acculturation outcomes. Taking a different angle on this problem, researchers have been trying to describe and categorize these outcomes. One influential model is Berry’s bi-dimensional model of acculturation (Berry, 1997). Acculturation strategy in this work refers to the strategies immigrants take to cope with the change due to moving to a different culture and interacting with people from a different cultural background. Acculturation can happen on a variety of dimensions such as attitudes, behaviours, and values, and in essence can affect a person’s sense of self. It is assumed that accepting or rejecting a new cultural identity is rather independent from keeping or abandoning an old cultural identity. Accepting a new cultural identity does not mean one has to give up one’s old or heritage cultural identity.

Based on this model, there are four different strategies people use to manage the balance between the culture people used to live in (old or heritage culture) and the
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culture they move to (mainstream/acquired culture): Integration, Assimilation, Separation, and Marginalization. An Integration strategy involves adopting core aspects of the mainstream culture and also maintaining one’s heritage cultural identity. People under the Assimilation strategy give up their heritage cultural identity and adopt the mainstream identity. Separation involves sticking to the heritage cultural identity and as a result being separated from the mainstream culture. Finally, people who adopt a Marginalization strategy give up their heritage cultural identity but do not obtain the mainstream cultural identity either and lose connection to members of both groups.

Immigrants can fall into one of these four categories with Marginalization being the least frequent. Whether immigrants are in one or the other category has profound implications for well-being, outlook and opportunities in the new acquired society. Assimilation and Integration both predict good sociocultural and psychological adaptation, but Integration was linked with less psychological stress, and Assimilation was linked to less social problems (Ward & Rana-Deuba, 1999). Also, a longer time spent in the mainstream culture (e.g., if a person moved or emigrated at a young age) predicts stronger identification with the mainstream culture, but this is less the case for those who emigrated later in life. Interestingly, neither age of immigration or time spent in the acquired culture predicts one’s identification with the heritage (old) culture (Cheung, Chudek, & Heine, 2011).

Berry’s acculturation strategy model is most widely used in both theoretical and empirical studies on acculturation. However it does not address the question of how the two cultural identities come to be integrated in a compatible manner within the person.
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To address this question we have to tap into the area of identity complexity and identity integration. First, let us look at the models of second-culture acquisition (LaFromboise, Coleman & Gerton, 1993), which may provide some ideas about how the heritage and mainstream cultural identities can come to co-exist for immigrants.

The models of second culture acquisition although proposed as models of biculturalism, can also be viewed as model of acculturation, but tend to focus on assimilation and integration. In one widely used model there are five forms of second culture acquisition: Assimilation, Acculturation, Alteration, Multicultural and Fusion (LaFromboise et al., 1993). Assimilation is similar to Berry’s model where individuals became full members of the host society and lose their heritage cultural identity. Acculturation is similar to Integration, with the additional hypothesis that the two cultural identities are in a hierarchical order. Moreover, the acculturation process happens involuntarily. Immigrants usually are forced to blend in and learn the new culture in order to survive. The Alternation model refers to individuals having a good understanding of both cultures and being able to alter their behaviours to fit a particular social context. These individuals can choose the degree and manner in which they affiliate with both cultures. In this model, bicultural individuals can maintain a positive relationship with both cultures and the two cultures can have equal status or priority for the individual, rather than one being superior or higher up the hierarchy than the other as in the acculturation model. The famous “multicultural man” hypothesis proposed that people capable of alternating between two cultures have less stress and anxiety, and may have higher intuitive, emotional and cognitive functioning (Adler, 1975; 1977).
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The Multicultural model is developed to deal with two or more cultures. A multicultural society should encourage all groups to maintain their own group identity, and be accepting and tolerant towards other groups, engage in intergroup contact, and maintain positive intergroup relations. In essence this model sees the mainstream society as a dynamic fluid entity and its identity is formed through contact and sharing of all the cultural groups within it. However such a multicultural society might be hard to maintain, but it is possible that the culture of a minority group can cast its influence onto the mainstream culture.

Finally, the Fusion model argues that the cultures within a society will fuse together into a new culture, which means not only are immigrants shaped by the mainstream culture, but they are also shaping and changing the mainstream culture. However the dynamic interplay between immigrant groups and the host society are rarely researched, and currently there is no actual example of a fused culture.

Of the five type of models, the latter two models emphasize the adaptation of the host society facing the incoming immigrants. Research demonstrated that hostile attitudes of the host society towards the immigrants can lead to less willingness to blend in. For example, Verkuyten argued that in European countries where people from other ethnic backgrounds are less accepted and find it harder to develop a sense of belonging, there is a negative association between immigrants’ ethnic and national identification. Indeed in his studies on Muslim immigrants in Dutch there is a repeated pattern of negative relation between religious identification, ethnic identification and Dutch identification (e.g., Verkuyten, Thijs, & Stevens, 2012). In more accepting countries
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such as America or Australia, such negative association is not as evident. He also found that some immigrants actively separate from and reject the idea of themselves being a member of the host society, a phenomenon he named “national disidentification” (Verkuyten & Martinovic, 2012; Verkuyten & Yildiz, 2007). Similarly, Badea and colleagues also found that when new comers sensed rejection from the mainstream society, immigrants identified with the mainstream culture less and were less likely to adopt the integration or assimilation strategy (Badea, Jetten, Iyer & Er-Rafiy, 2011). This finding suggests that a new cultural or social identity is not “given”, and immersion in a new culture does not always lead to identification with it.

Verkuyten also emphasizes the importance of realizing an identity and communicating this identity through behaviours and practices. In his research it was found that inability to practice Muslim religion leads Muslim immigrants in Germany to disidentify with being German. It suggests a dynamic link between ethnic and national identification among immigrants. This phenomenon of disidentification suggests that immersing in the mainstream culture may not necessarily lead to acceptance or identification of the membership.

Nevertheless, the theory and research surrounding second culture acquisition points to several ways cultural identities can co-exist: in a hierarchical order, exist alternatively depending on context, fuse together and merge into one single cultural identity. Birman (1994) has extended the model and proposed four types of bicultural individuals: the blended, instrumental, integrated, and explorers. More specifically, the blended type resembles the fused model where a new identity emerges that integrates
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and resolves the inconsistency between the minority and mainstream groups. The instrumental bicultural individuals are those who adapt to the behavioural norms of both culture but do not identify with either (almost like role playing). The integrated bicultural individuals are those who adapt to the behavioural norm of both cultures but identify with only the ethnic heritage culture. The explorers behaviourally assimilate to the mainstream society but identify only with their heritage culture (Birman, 2004).

This way of categorizing bicultural types addresses how two identities co-exist by suggesting one can be behaviourally oriented to both cultures but only identify with one. What is novel in this analysis is that it assumed that people can behaviourally act in terms of the norms and expectations of the host or heritage cultural groups for instrumental reasons without identifying with the cultural groups. Such behaviour is differentiated from instances where these groups are psychological meaningful and the norms of the group are internalised and shape people’s psychological and cognitive processes. Reference to cultural self-identity, internalization of roles and social identity (see below) concern instances where the ‘group’ becomes self-relevant and self-defining. It is possible using Birman’s framework that “acting” the role over time could come to affect self-definition.

Since the development of Berry’s two-dimensional acculturation strategy, research on cultural identities has developed rapidly and there are now many models of acculturation and culture acquisition. We now know that ethnic or heritage cultural identity and mainstream or national identity can co-exist without being negatively associated with each other. Among those who have both cultural identities whom we
called bicultural individuals, Phinney and Devich-Navarro (1997) identified two types: the fused (which they called the blended) and the alternating. Both types identified with both cultures psychologically and behaviourally. The fused type, though, do not feel conflicted whereas the alternating does feel conflict between the two cultural identities. This qualitative study supported the consistency of behaviour and identity, rather than the mismatch that Birman (2004) proposed.

As we mentioned earlier, Birman (1994) differentiates between acting behaviourally and identifying with the relevant group. It is also evident in the different measures used to assess biculturalism that there is variability in whether they assess category membership and which group is more important (assess sociological membership) or identification with particular cultural groups (assess psychological membership). However, sociological membership did not always imply psychological membership, as the case of national disidentification proposed by Verkuyten demonstrated. Physically being a member of the mainstream culture does not always mean psychological identification with the mainstream culture, especially for immigrants who do not engage with cultural practices of the mainstream society.

What is clear is that people can be a member of a range of different groups, can instrumentally or for other reasons behave in line with the norms, values and practise of these group and these groups can become psychologically meaningful and shape self-definition. When the aim is to better understanding how culture and groups memberships affect self-definition and personality processes it is the psychological membership which is important. To explain these processes in more detail we turn to
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social identity theory and self-categorization theory jointly referred to as the social identity perspective (Turner & Reynolds, 2001). We will then outline the empirical program of the thesis.

Identity process: the social identity perspective

Social Identity Theory (Tajfel & Turner, 1979) is a theory developed to identify the minimal conditions of discrimination and to explain why people discriminate others as group members. The categorization—identity—comparison—positive distinctiveness sequence, the interpersonal—intergroup continuum, and the strategies people use to cope with permeability and legitimacy of group boundaries (individual mobility, social creativity and social competition) are the tripod of SIT (Turner & Reynolds, 2010). We will outline the development of SIT and SCT and describe these key constructs in this section.

Social identity theory started initially to address the problem of intergroup conflict, discrimination and prejudice. Discrimination and prejudice are not only personal phenomenon, they are of interest because they are group-based with certain views become widely shared where members of one group treat members of another group negatively. As group members, people actively discriminate against members from other groups and favour members of their own group. It was discovered using the minimal group paradigm that people demonstrated intergroup discrimination and ingroup bias even when the group membership was randomly assigned and there was no prior history of conflict. The key hypothesis of SIT is that people seek to achieve a positive identity and they achieve this by positively differentiating their own group from
other groups. By actively favouring ingroup members people achieve positive self-esteem and self-evaluation, which was seen as a key driver of prejudice and intergroup discrimination (Turner, 1972; 1975).

The process was argued to start from social categorization, which leads to social identity and then social comparison, then eventually positive distinctiveness (see Turner & Reynolds, 2010). Categorization as group members provides an important basis for self-definition and these memberships are important aspects of one’s self-concept. These group memberships were defined and evaluated by the process of social comparison with other groups and there was a motive to define these identities positively. This motive for positive ingroup distinctiveness leads to ingroup favouritism and discrimination under certain circumstances. However, the results from minimal group paradigm suggested that, discrimination and prejudice are most likely when someone encounters another individual in circumstances that make the ‘other’ to be defined as a member of an outgroup rather than as a unique individual. In another words, when a group-based comparison is made salient in a social context.

SIT pointed out the important distinction between “acting in terms of self” and “acting in terms of group”, also known as the interpersonal—intergroup continuum. There is a qualitative psychological distinction between acting as an individual and acting collectively as a group member. People do not always act as a unique human being, nor do they always act in terms of social identity processes and as group members. People are capable of doing both and shift between the two in line with the specific conditions in the context. The continuum was later modified to differentiate
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personal and social identities where both were “acting in terms of self” but the self-concept could expand to include others as group members in contrast to non-ingroup or outgroup members (Turner, 1978). SCT focused on explaining this shift in self-definition from “I” to “we” and its consequences.

Intergroup relationships are complex. Groups have different positions in the society, and their reaction to each other also depends on the status relations between these groups in the society. A particular emphasis of SIT is explaining how members of groups in low status, devalued and disadvantaged positions come to define their group and themselves as group members positively. If there is a motivation for positive distinctiveness how can positivity be achieved if the group one belongs to is considered lazy, aggressive, and incompetent? In SIT it is argued that the nature of the social structure and people’s theories about group relations within this social structure shape responses of low (and high status) group members. The permeability, legitimacy and stability of the social structure emerge as being particularly important. Permeability refers to the perception of the group boundary being permeable or impermeable. Legitimacy regards the perception of group status being legitimate or illegitimate. Stability refers to the intergroup relation being stable or unstable. These factors determined how members of groups with high or low status react to each other. Group members can adopt one or more different strategies (individual mobility, social creativity, and social competition, Tajfel & Turner, 1979; Turner & Brown, 1978) to maintain positive distinctiveness.
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In sum, SIT is about WHY being in a group shapes people’s behaviour, not about the nature of the psychological group or HOW belonging to a group changes people’s behaviour. It is a theory of intergroup conflict, ingroup bias, ethnocentrism and social change. On the other hand, SCT was developed to explain how the group membership in the minimal group paradigm became relevant and meaningful to people and the cognitive process of categorization. It is a theory of group formation and group dynamics. SCT started with the personal—social identity distinction and interpersonal-intergroup continuum developed within SIT, which later developed into the concept of levels of self-categorization. A difference in SIT and SCT is that in SIT the interpersonal—intergroup continuum has one end defined as acting in terms of self and the other end of acting in terms of the group; whereas in SCT, both personal and social identity were acting in terms of self (Turner, 1978, 1982).

In SCT, the core process of self-categorization is depersonalization, a process when people shift from defining the self as individual person to defining the self as a social category member. This process of depersonalization in self-categorization is crucial to the formation of psychological group memberships. The group is not merely a collection of individuals and group dynamics are not the simple the aggregate of interpersonal relationships. Groups are argued to be formed based on the group-derived similarities rather than interpersonal attractions (Turner, 1978). When people define themselves as a member of a group, there is a perceptual accentuation of intragroup similarities and intergroup differences. Individuals go through processes of depersonalization or self-stereotyping, in which they perceive themselves as members
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of a social category who possess the same defining attributes of the category, rather than
as being unique individuals with distinct attributes. This self-stereotyping leads to
increased identification between self and other ingroup members, and increased
perceptions of difference between the emergent sense of “us” and outgroup members.
People come to perceive themselves less as unique individuals, and more as
interchangeable members of a shared social category defined by the stereotypes of the
group.

In SCT, then, depersonalization is a process that minimizes individual
differences and emphasizes shared attributes. However, depersonalization is not the loss
of individuality or the loss of self. It involves changes the level of the self, and its
content. When people identify with their group and the depersonalization process
happens, they shift their attitudes, values and behaviours from unique human being to
the values, attitudes and behaviours that represent the group.

Group formation process and self-categorization process both requires social
comparison. Turner (1985) hypothesized that a collection of people are more likely to
be categorized as a group if the difference between them is smaller than the difference
between them and other people in the comparative context. This is the principle of
meta-contrast. Also, when the perceived difference of a group member to ingroup
members is smaller than the difference between this group member and outgroup
members, this person is considered to be prototypical, which means he or she is more
representative and normative (Turner & Oakes, 1986). Prototypicality is an important
notion in the leadership and group polarization literature (e.g., Turner & Haslam, 2001).
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This group formation process by meta-contrast indicates that people embody group norms rather than producing a group norm in social influence. Groups form based on the similarity of their members and during this formation process the group norm is established. A group norm expresses the identity of the group as an entity in contrast to other groups, rather than the sum or average of the individual property of its members (Turner & Reynolds, 2011).

In SCT, the personal—social identity continuum later developed into the hierarchical model of self-categorizations, defined by levels of inclusiveness or abstraction. The levels are “functionally antagonistic in their perceptual effects at any given time but nevertheless mutually dependent” (Turner & Reynolds, 2010, p. 22). The formation of the identity comes from social comparison, nonetheless. At the interpersonal level, self is defined as a unique individual compared with other individuals. This is the personal level of identity. At the intergroup level, self is defined as being a group member comparing to a relevant outgroup. This in the social level of identity, and with each comparison to a relevant outgroup, it is possible that a different social identity is formed. At the superordinate level which is the highest level of abstraction, self is defined as a human being in comparison with other species or life forms (Onorato & Turner, 2004). The lower level self-categories (and judgements of similarity and difference) are formed based on the social comparison that happens within the higher level similarities that define the self-category.

A person is a member of different social groups, such as gender groups, occupation groups, national groups, interest groups, and so on. Under certain conditions
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these social groups become psychologically important and shape self-definition. Also in
certain social contexts personal identity will be activated, in other contexts it could be
social identity that will be activated (Turner, Oakes, Haslam & McGarty, 1994). Two
factors determine which identity emerges in a given situation: accessibility and fit. The
former was also known as perceiver readiness, and the latter can be broken down to
normative fit and comparative fit (Oakes, 1987). Accessibility, or perceiver readiness,
reflects one’s experiences and expectations when interpreting a given social context. If
one has categorized oneself frequently in relation to a particular identity, this group
membership can become chronically salient and the level of social identification with
the group may be higher. Normative and comparative fit refer to the way stimuli are
given meaning and relate to the structure and content of the cognitive categories that are
formed. Normative fit is the degree to which perceived features of category members
match people’s existing knowledge and understandings. For example, if being a
University student means being hard-working and smart, then meeting a hard-working
and smart young person fits the norm of this particular social identity, and this identity
is more likely to be activated and become salient. On the other hand, comparative fit is
determined by the meta-contrast principle. When interacting with more than one
individual, categories are activated through comparing the similarity and difference
between the stimuli which can include self and others. For example, when talking to a
colleague one on one, personal identity might be salient. But when people from outside
of the workplace joined in, those people might be perceived as outgroup members and
Both the formation of personal and social identity involves and are context dependent and variable. At different times under different situations, we define ourselves differently. This means our response to the situation, our attitudes and behaviours, are also flexible and not independent of environmental influence. However, rather than the stable and constant self interacting with social environment factors, the social identity perspective states that the self is context dependent and flexible, and the self-categorization as an outcome of the interaction process with social environmental factors, determines attitudes and behaviours.

When becoming a group member, the beliefs, values and behaviours that define the group become self-defining. The distinct group norms describe and define group membership, and whether certain behaviours are appropriate or inappropriate for its members. It is what distinguish the ingroup from other outgroups and is used as a strategy to positively differentiate the ingroup from other groups. These norms will provide people guidance about what is appropriate and what is not, under specific contexts when their group membership is relevant and activated. When the group membership is activated, people would think and behave in the way that is consistent with their group norm.

Furthermore, the more people internalize this particular group membership the stronger this group norm influences them and shapes their beliefs and behaviours. Over time, the group membership is gradually internalized and can become chronically
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salient, and people come to value the group membership and the norms to a greater extent. The more people value particular group norms, the more accurate people think these norms are, the more people will identify with this group, and hence they are more likely to define themselves as group members and behave according to these group norms. In sum, the strength of this internalization process depends on level of identification.

The rich literature of the social identity approach offers many measurement tools of social identification. Doosje, Ellemers and Spears’ (1995) original identification measure used four seven-point items to cover the cognitive, evaluative and affective aspects of identification. The four items are as follows; “I identify with other psychology students,”, “I see myself as a psychology student”, “I am glad to be a psychology student”, and “I feel strong ties with psychology students”. Cameron (2004) proposed a three-dimensional model of social identity measurement which contains three components: cognitive centrality, ingroup affect, and ingroup ties. There are 4 items in each subscale and are measured in a 7-point likert scale. He argues that this three-factor model is better than either a one-dimensional model or a simple distinction between cognitive and affective facets of social identity. This scale is widely used as it not only assesses the importance of a group to the individual, but also the emotional connection. Postmes and colleagues introduced a single-item measure that assesses rates of agreement with the statement “I identify with my group” (Postmes, Haslam & Jans, 2012). They argued that this item has good reliability. A similar one-item approach has been widely used in cross-cultural studies, such as “I feel Chinese/Mexican” or “I
identify with the Chinese/Mexican culture” (e.g., Benet-Martinez, Lee & Leu, 2006; Miramontez, Benet-Martinez & Nguyen, 2008). Although simple, there is evidence such items are valid measure of assessing levels of identification.

In self-categorisation theory, social identity is a process of depersonalisation where people see themselves as a member of a certain group rather than as a unique individual. People connect with others from the same group by their common attachment to the group rather than by personal relationship with others. SCT put a lot of emphasis on context specificity, which means only the social identity that is most relevant to the context will become salient. In the situation when identities that a person holds as being important to their sense of self conflict the identity that becomes salient will be one that attempts to resolve the inconsistencies between two or more social identities or level of identification will be weaker. Roccas and Brewer’s (2002) have examined these questions in more detail in their theory of multiple identity complexity.

Roccas and Brewer (2002) proposed four different types of strategies in which the individual may structure his/her perception of the conflicting social identities to define his/her social self. One model is hyphenated identities: in which individuals define the ingroup or locate one’s cultural/social identity as the intersection of multiple identities, in this case the ethnic identity and the dominant identity come to form a blended bicultural identity. This is the most exclusive way of identifying ingroup members as only those who share the same identities on every category are seen as ingroup members. This model has the least complexity. Another way of coping with competing social identities is to adopt one dominant group identification and treat other
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identities as subordinated. In the acculturation context (Berry, 1997) this is similar to
the assimilation or separation strategy. However, when all identities are equally
important to an individual, he/she might adopt **compartmentalisation** and maintain
multiple group identity by separating them such that these identities will not become
activated simultaneously. The final model is **merger**, where multiple identities are
combined and integrated into one. The multiple identities do not contain shifts between
two or more identities because all identities merge into one.

The four types of multiple identity complexity strategies are similar to the
acculturation model and the two types of bicultural individuals. The
compartmentalisation model is similar to the alternation model of second-culture
acquisition that LaFromboise et al. (1993) proposed, in which bicultural individuals
understand both cultures and choose the degree to which they affiliate with either the
mainstream culture or their heritage culture to fit in to the social contexts they were in.
The merger model of multiple identity complexity is also similar to the fusion model of
biculturalism by LaFromboise and colleagues (1993), where two cultures fuse together
until they became indistinguishable and essentially a new culture. The hyphenation
model of multiple identity complexity has no corresponding model in biculturalism,
however in reality, there are people who identify only with the intersection of their two
cultural identities (e.g., those who only identify with being Canadian Chinese or Dutch
Chinese, Bélanger & Verkuyten, 2010; see also Chapter 5 of this thesis). This
hyphenated identity could also be seen as a type of biculturalism.
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The key point of multiple identity complexity is that these are psychological groups and not merely sociological ones. This work draws on the social identity perspective and recognises the functioning of social identity in line with these theories. In this way, a bicultural immigrant can define his or her cultural identity as the intersection of the two identities, the two identities fused into one, or two identities kept distinct with one or the other becoming salient depending on context.

Along the line of social identity perspective including SIT and SCT, we can see why people need to belong to social groups, and how being a group member changes us. The processes of depersonalization, group formation and identification are outlined. The social identity perspective explains in detail that belonging to a group shapes who we are through the constructs of identification and salience. The models of multiple identity complexity complete the picture as in reality people usually have more than one social identity whose meaning does not necessarily align and need to find a way to reconcile differences. We also outlined the importance of identity process in biculturalism and acculturation. Cultural psychology argued that self is culturally determined. Similarly, the social identity perspective also argues for the role of social factors in shaping the self. In the next section, we describe in more detail the dynamic nature of the self from the social identity perspective, and the role of identity processes in shaping our self-concept and behaviour.

The dynamic nature of self-concept in SCT

The self-concept in SCT refers to how an individual categorizes oneself to understand and give meaning to the current social context (Turner et al., 1994; Turner &
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Onorato, 1999). It is one’s current self-category, a cognitive representation that is context dependent. How people self-categorize in order to make sense of the situation is determined by many factors in the context. With the situation changes from time to time, so too can one’s self-category because the self-concept is flexible and dynamic. Variation in level of self-categorization (personal vs. social), and variation between one’s multiple social identities are ever present as a function of the contextual factors and the perceiver factors.

SCT is a theory that serves to explain how the self-process functions to “manage” instances of contextual stability and change. It is the case that often this theory has to be investigated in contexts where group memberships and identities have already formed and are part of people’s psychology. It is difficult to explore the theoretically proposed dynamic nature of the self and its context dependence when people’s self-concepts are established and the circumstances they live in do not change dramatically. It is the case that within a day people shift contexts from work to home and a different self-definition may come to the fore in one context compared to another leading to changes in self-definition and behaviour. But for people who go through life changes such as dramatic life events or migration, the information, knowledge and framework they use may change drastically, resulting in different self-definition and behaviours. Life events can include political and social changes in the society in which they live (which people did not necessarily choose or expect) and also role change across the lifespan (e.g., partner, employee, manage, parent) and such changes can
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impact on people’s attitudes, values and behaviours. Needless to say a fixed self-structure not able to adapt to contextual factors would be maladaptive.

It is worth pointing out that this self-concept idea is not the same as the Five Factor Model proposed about situational variability in personality. Rather than having a stable self-concept and personality that interacts with environmental factors to produce attitudes and behaviours, it is long-term knowledge system or framework of the self (perceiver readiness), related to both personal and collective levels of experience that interacts with contextual factors to produce a certain self-categorization, which lead to certain attitudes and behaviours (Turner & Onorato, 1999; Turner et al., 2006). The FFM reflects the perspective of mechanical interactionism, which argues that the interaction between “person” factors and “situation” factors can be used to explain behaviour, and these person factors are assumed to be stable characteristics. This perspective treats person and social factors as separate, and through the interaction, social factors can influence the expression of personal factors, but not the actual person.

SCT is rooted in dynamic interactionism, which does not isolate the person from the situation, rather it takes into account how the person gives meaning to the situation and argues it is the psychological meaning people give to the situation that is crucial for understanding behaviour. Self is not purely personal. On the contrary, the personal self as an individual in contrast to other individuals is just one level of the self. The social self as a member of a social group as determined by the attributes of that group, is another level of the self. There might be other levels of the self vary in the level of inclusiveness. The content and the level of the self is shaped by the context, and how
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people understand the context (Turner & Onorato, 1999). This perspective is clearly
presented in the social identity perspective.

One recent example examining these ideas is provided by Reynolds et al.,
(Reynolds, Bizumic, Subasic, Turner, Branscombe, Mavor & Batalha, 2012) which
examined the relationship between social identity and personality processes. They tested
the idea that social identity salience could affect self-rated personality. When
participants’ non-aboriginal Australian identity was made salient, they demonstrated
much higher level of Neuroticism compared to when their other social identities of
being university student and being Australian was made salient. This effect was
accentuated after participants read a paragraph about an apology for negative treatment
by non-aboriginal Australians towards aboriginal Australians. Reading this paragraph
was argued to increase their identification as non-aboriginal Australians, and increased
their sense of depression and self-consciousness, both sub-factors of Neuroticism. This
study indicated that, when people highly identify with their group, they use the values
and beliefs of their group to interpret and understand the world, which was reflected in
self-rated personality.

Bringing it all together: the current research

In chapter 2 the literature on personality is reviewed and it is established that
environmental factors and personal experiences can have an impact on personality and
lead to its change. Specifically, theories of personality variability as a function of major
life events or social roles are also outlined. In chapter 3 we reviewed cultural influences
on the self-concept and the social identity approach, which suggests that, in addition to
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major life events and social roles, languages, cultural mindsets, and identification could also be important mechanisms in understanding personality change. It is argued that through repeated and voluntary engagement of cultural practices, culture can shape one’s self and behaviour, including personality. Similarly, social roles also influence people through active and voluntary engagement of role activities. These trajectories of work are very similar to the social identity approach mentioned above. When people internalize a group norm, whether it is a role or a cultural group, they define themselves based on the values, beliefs and behavioural scripts of that group. The more so when they identify strongly with being a member of that group. When a particular role or cultural identity becomes salient it will define one’s self-definition and behaviour in that context. We believe that whether personality is flexible as the function of social roles, life events or culture, the underlying mechanism is identification with being a member of a specific category.

The research by Reynolds and colleagues (2012) provided a rare empirical example of investigating the social identity analysis and personality processes (individuality, personal self). Most of the work on the relationship between social identities and person change (e.g., well-being, personality) remains theoretical. More work is emerging on the impact of group memberships and social identity processes on well-being (Jetten, Haslam & Haslam, 2012) and in the educational domain (achievement, bullying; Bizumic, Reynolds, Turner, Bromhead & Subasic, 2009). The empirical aim of this thesis is to expand this line of enquiry to personality processes. Specifically, the empirical work is focused on exploring the role of social identification
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on personality and how changes in social identification may be related to changes in personality.

One of the challenges in this research area is that increasingly it is recognised that to the degree that people’s social contexts remain stable so too will their psychology. Much of the work conducted on personality occurs at sites where people’s experiences, roles and identities are unlikely to be in flux. How then do researchers study social identity variability on personality variability? Branscombe and Reynolds (2015) highlight that to understand the dynamics of identity and personality change it is necessary to investigate people in contexts where change is likely (Hansen & Postmes, 2013). They argue that much work is conducted at sites of psychological stability making it difficult to fully explore the issue of person (and personality) change.

Along these lines, there is some empirical evidence within the personality literature that personality can change as a function of role commitment or role experience but in this work there is limited integration of the social self and social identity processes. There is limited research testing the idea of personality change as a function of taking a new social role or change of personality as a function of one role of the other becoming self-defining. There is recognition that people can internalise new roles and norms but the process or mechanism through which one or the other will come to the fore is note really explained. More empirical work focused on the question of personality variability and the role of the social psychological level of analysis and identification processes needs to be conducted. The idea that person (personality) change is connected to group (social identity) change is underexplored. Such group
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(social identity) change could either occur through a different identity being made salient or acquiring a new group and identity.

One promising avenue to explore these ideas relates to work in cross-cultural and bicultural psychology. Multiculturalism and biculturalism provided contexts that are in flux and where people go through changes in their life. Empirical evidence in this area looked at changes in identity, values, cognitive function and attitudes. However, this theory and research has not really engaged with the personality domain. Understanding the immigrant experience and the transition from heritage to acquired culture may have particular importance in better understanding personality stability and change. If the cultural and social context has a role to play in shaping cognitive processes including self-definition (and personality processes) then studying the transition may shed light on the interdependence between social context and personality and the way personality can and does change with environment.

Although this work draws on a variety of perspectives including self-categorization and social identity processes there is more work that can be done integrating the social identity perspective. Furthermore this research area provides potential methodological models that can be used to explore social identity variability. Importantly there are pockets of work that have incorporated self-description including through the use of Five Factor personality measures.

In order to highlight these points in more detail example studies from the cross-cultural area will be outlined. These studies are important because they inform the empirical work of the current thesis. One key study that explored culture and
personality change was conducted by Ramirez-Esparza and colleagues (Ramirez-Esparza, Gosling, Benet-Martinez, Potter & Pennebaker, 2006). The participants were Spanish-English bilinguals living in the US and in Mexico. They completed a personality inventory in both English and Spanish. It was found that there was personality change for all the Big Five domains (Ramirez-Esparza et al., 2006).

Completing the personality inventory in Spanish lead people to respond in a way more typical of Mexicans and speaking English lead to people responding in a way that was more consistent with the profile of the typical American.

Chen and Bond (2010) conducted a similar study with Hong Kong participants fluent in Chinese and English but they also extended the methodology by including a behavioural measure of personality as well as self-reported personality. Hong Kong bilinguals rated themselves to be closer to native Chinese speakers on a personality scale when they completed it in Chinese, and rated themselves to be closer to native English speakers when they completed personality ratings in English. Chen and Bond also had independent coders rate the observed behaviour of participants as they conducted an interview in either Cantonese or English. They observed behavioural differences on the dimension of Openness and Extraversion when being interviewed in English compared to in Cantonese. These results suggest that the personality shift indicated by self-report responses also can be observed with behavioural change. Moving away from self-reported personality to behaviour increases the meaningfulness of the findings and their reliability.
Key theoretical perspectives that underpin this research are cultural frame switching and cultural accommodation (Bond & Yang, 1982), the former we mentioned in relation to the dynamic constructivist approach. It is proposed that cultural knowledge is acquired through socialisation and learning and such knowledge structures can be activated by stimulus in the environment. As a result a particular set of meanings and cognitions – mindsets - come to the fore and shape the self-concept. A cultural mindset is a network of domain-specific knowledge, which is formed a network of loosely connected constructs, similar to implicit theories. When one cultural mindset is activated by cues in the context, it guides the cognition and behaviour of people.

Cultural frame switching occurs when bicultural individuals switch between the internalized cultural mindsets, which was activated by context to guide thoughts and behaviours, resulting in changes in thoughts, feelings and behaviours. CFS occur through the use of cultural symbols, geographical location, the ethnicity of an interaction partner, and rituals that are experienced in the environment. The assumption that individuals are capable of acquiring more than one cultural frame also parallel assumptions about the self-concept in the social identity perspective; that people can belong to more than one social group and acquire multiple group memberships. The similarity between models of multiple identity complexity proposed by Roccas and Brewer (2002) and the models of biculturalism further suggest that cultural group is similar to other social groups and cultural mindsets or frames can be understood a social identity.
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One of the few studies which have used cultural symbols as a form of priming of mindsets also investigate the perception and the definition of self (e.g., Lechuga, 2008; Mok, Cheng & Morris, 2010; Mok & Morris, 2009). Similar to the fMRI study we mentioned before (Ng et al., 2010), Ng and colleagues asked bicultural Hong Kong residents to conduct a referencing task, where they had to indicate whether a series of phrases described themselves/their mother/a nonidentified person (NIP), after they received either a Chinese or Western cultural mindset priming. The mindset prime constituted of 13 pictures that captured the essence of the culture, for example food, art, movie stars, religious, legend, folklores and famous architecture. After a 20-minute distraction task, participants completed a memory task of the phrases used in the referencing task. As can be expected, NIP referencing required significantly longer encoding time, but no differences were found between self-referencing and mother-referencing. In the Chinese mindset prime condition, the referencing difference between self-mother and self-NIP were both not significant, but in the Western priming condition both were marginally significant. These results indicate that cultural priming can change the connectedness of the self with others and in ways that reflect more self-other association in the Chinese cultural priming setting (Ng & Lai, 2008). As highlighted above, the later fMRI study found the same effects, and demonstrate these same patterns through the neurological brain processes.

While issues persist with self-report and even observer ratings, these findings are related to processes outside of the individual’s conscious processes. There is overlap between the arguments surrounding mindsets and CFS and self-categorization
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processes. Further integration of these ideas may advance understandings of person variability and change. Coming to define oneself as Chinese or Western as a function of language use or cultural symbols can be interpreted as a process of social identity salience. One group membership rather than another comes to the fore in a situation and obtains psychological significance and meaning in that context, and determines how people define oneself. The research by Ng and colleagues reveals that how we define ourselves is variable and context-dependent and such changes can be observed at a neural level.

In both the constructionist approach and the social identity perspective it is assumed that cues embedded in the environment can trigger the activation of loose constructs which guide how people perceive the environment and themselves, and their behaviours. The key part of the process in the social identity perspective is one’s own self-categorization or self-definition when a particular social (or personal) identity becomes salient. From this perspective also the degree to which a person identifies with a group, even if they are cultural immersed in it, will affect the impact on their self-definition and behaviour. The dynamic constructivist approach does not deal with the strength of this internalization of culture.

Bringing these points together, there is an emerging trajectory of work across a number of areas – social, cross-cultural, biological – that suggests that self-definition can shift and change with contextual variation and that these changes can be observed on a range of measures (personality, behaviour ratings, brain activation). Often in these studies though direct measures of social identification are not included, which make it
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difficult to systematically explore the relationships between changes in social identity
and person change. None of the frameworks we mentioned above, including the social
investment principle and PRISM in the personality domain (see Chapter 2), explicitly
explore the ideas of roles and group memberships, social identity salience and strength
of identification. Also although work has looked at changes in social identity salience,
there are other ways to explore social identity change. It is possible to identify sites of
actual group membership change (immigration experiences), changes in social
identification (with one’s ethnic and new national group) and its implications.

Further engagement with social identity processes also could help to clarify a
range of issues and inconsistent findings that have emerged using CFS. The first issue
concerns whether living in two “cultures” and speaking different languages actually
makes someone bi-cultural. Often being bicultural is assumed but not measured. One
interesting thing about CFS studies is that in many cases being bicultural is assumed
rather than measured. In the neuroimaging study by Ng and colleagues mentioned
above, language use, preference for both Western and Chinese entertainments and
festivals, and bicultural integration was assessed (Ng et al., 2010). These criteria may
not actually indicate the internalization of the culture. In the neuro-cultural interaction
model, Kitayama and Tompson (2010) have referred to the added dimension of cultural
self-identity as being important. They argued that only those who identified with the
new culture will engage with cultural practices willingly and voluntarily, which then
leads to stronger culturally modified brain connectivity, and changes in the self-concept
and behaviour. This argument speaks precisely to the degree of identification and
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associated internalization of particular cultural group norms, values and practices and connections to the social identity perspective, point that Kitayama and colleagues recognise.

The second issue concerns some evidence that language use (e.g., English rather than Chinese) is not associated with particular culturally-consistent responses (those of being Western) but the opposite (those of being Chinese); referred to as a boomerang effect. Sometimes the priming triggered the opposite effect, that is, after watching Western cultural icons or reading the items in English, participants respond in a way that endorsed Chinese (rather than the expected Western) values. This effect was repeatedly found when investigate the language effect on Hong Kong bilinguals’ value endorsement, and was named ethnic affirmation in the bilingual literature (Yang & Bond, 1980).

A series of studies have been conducted to explore ethnic affirmation further. Numerous possible explanations have been provided as to why and how this boomerang effect occurs (Bond & Cheung, 1984; Bond & Yang, 1982; Chen & Bond, 2007), but efforts are ongoing. Similarly, boomerang effects were also found when bicultural individuals react to cultural mindset primes. Bicultural Chinese and American participants made stronger internal attribution when received American cultural priming, which is inconsistent with the Western cultural norm (Benet-Martinez, Leu, Lee & Morris, 2002). Benet-Martinez and colleagues attribute this reverse priming effect to bicultural identity integration (BII), a continuum of whether bicultural individuals perceive their dual cultural identities as compatible or oppositional.
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These researchers proposed that BII moderates the cultural frame switching process. Those who have high levels of BII experience no conflicts between their two cultural orientations, therefore they should engage in cultural frame switching fluidly and smoothly. On the other hand, bicultural individuals with low levels of BII see their ethnic and mainstream identities as in some was opposite or inconsistent and the activation of one cultural system may spread to the other, causing them to react to cultural priming in the opposite way.

A range of terms have been introduced to explain such integration including social identity complexity (Roccas & Brewer, 2002) and more recently dual identity (Gaertner, &Dovidio, 2014). These explanations are embedded in the psychological literature drawing on ideas surrounding social identity processes. If people psychologically identify with being members of two cultures then they will internalise the respective norms and values and in if the contextual factors are in place for one or the other will become salient. Those who strongly identify with both cultures would be more bicultural than those who identify with one group stronger than another. Ethnic affirmation may emerge because cultural self-identity is not evident or strong irrespective of language use or knowledge of cultural symbols. The systematic investigation of social identity processes in this domain may advance understanding both of when and how CFS occurs and also more broadly the ways in which group memberships (cultural groups) can come to affect self-categorization and associated personality and behaviour. The process of immigration and acculturation to the mainstream culture is similar to that of acquiring a new group membership.
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Despite the rich literature in the dynamic constructivist approach about shifts in self-definition, values, attribution and behaviour, there is more work to be done and potential opportunities to advance understanding through the integration of the social identity perspective. Equally the context of cultural accommodation and mindsets (and the creation of new cultural groups through investigating the immigration experience) provide opportunities to explore social (cultural) identity change and to assess its impact on personality and related processes.

To date there is one study that serves to integrate these approaches. Verkuyten and Pouliaisi (2006) proposed and tested the mediation effect of group identification in explaining the effect of CFS on personality processes. In this study, bicultural participants of Greek descent living in The Netherlands either receive a Dutch mindset prime or the Greek mindset prime. In the priming, they not only were presented with pictures of cultural icons, but also completed measures in the corresponding language (either Dutch or Greek). Participants also indicated both their levels of Greek and Dutch identification each on a single item. The results showed that those who received Dutch cultural mindset priming reported higher Dutch identification than Greek identification, and vice versa. Priming also lead to variation in self-evaluation and self-stereotyping such that the patterns that emerged were similar to those of the typical Dutch or Greek group member. Moreover, identification also predicted self-stereotyping and partially mediated the relationship between cultural mindset prime and self-evaluation. This study is important as it demonstrated that cues in the context (language and symbols) lead to elevated level of group identification, which in turn influenced self-perception.
This thesis extends these arguments and existing research and has three main aims: 1) to highlight the social identity perspective as an integrative framework that can help explain the impact of role and cultural groups on personality variability; 2) to investigate the role of social identification processes in personality variability using both cultural frame switching (Study 1 and 2) and social identity salience (Study 3) and 3) to investigate the role of social identification processes in personality variability using a longitudinal design (Study 4). The overarching aim is to highlight the processes of both salience and social identification in explaining personality variability with particular relevance to role theory, cultural mindsets and cultural frame switching.

In the first empirical chapter of this thesis (chapter 4), two experiments are outlined. Both studies are designed to explore the role of identification in cultural frame switching. In Study 1 we explored language effect on CFS, among Australian Chinese bilinguals and including pre-measures of identification before the language manipulation to uncover the variability of personality. In Study 2 we used cultural symbols and icons as our CFS priming among Australian Chinese bicultural individuals and also included pre-measures of identification.
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Chapter 4: Language, cultural mindsets and social identity: Explaining variability in self-definition

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Context statement

This chapter is written as a submittable journal article as part of the requirements of the PhD program. Some sections in this chapter might be replicating parts in Chapter 2 and Chapter 3, such as the section about acculturation and cultural frame switching. Some empirical examples might also appear in previous chapters.
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Abstract

Many studies have suggested that language and cultural mindsets can trigger changes in self-concept among bicultural individuals (e.g. Ramirez-Esparza, Gosling, Benet-Martinez, Potter & Pennebaker, 2006; Chen & Bond, 2010). Cultural frame switching and cultural accommodation are proposed to be the mechanisms behind this phenomenon. It is proposed that the language or cultural icons associated with a culture activate the corresponding cultural meaning system, which guide people to process information and to behave in line with the cultural norm. This model is similar to the social identity perspective which suggests that environmental cues make an identity salient, which in turn allows people to behave in a way that is desirable and appropriate to ingroup norms. Two studies were conducted to investigate cultural primes, bicultural identity integration, and social identification in the definition of the self-concept (using Big Five personality). Culture was primed by having bicultural Australian-Chinese participants complete questionnaires in English and Chinese (Study 1) or through the presentation of cultural icons (Study 2). In line with predictions results suggest that social identity mediates the relationship between language and cultural mindset and self-concept changes among bicultural individuals. Implications of the findings for theoretical integration and future directions for research are outlined.

Keywords: culture, language, personality processes, identity and categorization
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Introduction

Culture is a very important aspect of people’s lives because it shapes their self-concept and beliefs. How culture comes to shape our cognitive function, self-concept and behaviour is a popular topic in social and cultural psychology. There is a rich body of research that has examined the impact of culture on cognition and attribution (e.g., Morris & Peng, 1994). The influx of migration in the past decades inspired research on how living in a new culture influences and shapes people. A close examination of migrants and people who change cultures also has revealed some important findings about the self-process (e.g., Ward & Chang, 1997). If self-definition and personality changes for those who move from one culture to another then it informs theories of the stability or malleability of personality and illuminates the role of the cultural environment in shaping the individual. When immigrants move from one culture to another, they face challenges in their attitudes, values, beliefs and behaviour, and may go through modification and adjustment of their thinking and behaviour in order to fit in to the new culture.

The research on immigrants reveals that people adopt different acculturation strategies, and some people can internalize the new culture without giving up on their heritage culture. These people are referred to as bicultural individuals. A large body of work focuses on these bicultural individuals and investigates shifts in their attitudes and cognitive function when they switch between the two cultures. However, there are some inconsistencies in the literature and clear mechanisms that explain the shift remains unclear.
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The present research aims to explore this mechanism and link shifts of self-concept to social identity processes. In the introduction we will first describe the concepts of acculturation, cultural accommodation and cultural frame switching. We will then outline in detail the inconsistent findings in cultural accommodation and cultural frame switching and the proposed explanations. The social identity perspective will be introduced as a possible framework in explaining cultural frame switching and its related findings. Our research project and its aim will be outlined.

**Acculturation and biculturalism**

When immigrants move from their heritage culture to another country, they face a different set of values, behaviour customs, routines and rituals. Acculturation refers to how immigrants cope with their acquired mainstream cultural identity and their heritage cultural identity. For a long time researchers have proposed two ways of constructing acculturation models, unidimensional and bidimensional model. Unidimensional models assume that the acculturation process takes place along a single continuum and one identity will eventually replace another (Gans, 1979; Gordon, 1964). This model builds on the assumption that immigrants will have more exposure to the mainstream culture over time and hence they will assimilate to the mainstream culture gradually over time and generations. Bidimensional models, on the other hand, see the two cultural identities as relatively independent dimensions and can co-exist (e.g., Berry, 1997). Individuals can adopt one set of beliefs and behavioural standards without giving up the old belief system. For example, the most widely accepted and researched acculturation framework by Berry (1980; 1997) proposed four types of acculturation strategies:
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Integration, Assimilation, Separation and Marginalization. Integration is the strategy where people accept the mainstream identity and maintain their heritage identity at the same time. Assimilation is where immigrants blend in to the mainstream culture and abandon their heritage identity. Separation refers to refusal to accept the mainstream culture and keep the heritage identity only. Marginalization refers to retreat from both cultures and seek other ways to identify the self.

Ryder and colleagues tested the unidimensional and bidimensional models of acculturation in a series of studies, and concluded that the bidimensional model is more valid and useful (Ryder, Alden & Paulhus, 2000). They found that the heritage and mainstream endorsement/acculturation were not strongly negatively correlated with each other. Also, the heritage cultural endorsement was associated with interdependent self-construal and the mainstream cultural endorsement was associated with independent self-construal. This study support the bidimensional model of acculturation, and also suggests that cultural endorsement is associated with self-concepts such as personality and self-construal (Ryder et al., 2000). To date Berry’s model of acculturation is widely used and the assumption that people can internalize two or more cultures are well accepted. These people are referred to as bicultural individuals.

The area of cultural psychology has been particularly interested in bicultural individuals and their ability to internalize two sets of cultural norms and identities. Beliefs and customs derived from different cultures are often contradictory and hard to integrate and align. The dynamic constructivist approach of culture (Hong & Chiu,
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2001) proposes that the influences of culture on cognition are determined by the context of knowledge application, rather than always and all the time. Culture is not internalized as a general structure that functions in all conditions, it is rather internalized as a loose network of domain-specific knowledge systems shared widely within a culture. Many beliefs may function under one domain but not in other domains and different or sometimes even contradicted beliefs can co-exist in one culture because they function in different domains and in different ways. It is the context that determines which beliefs will be activated as a function of the current condition. The concept of cultural mindset switching emerged from this approach and investigates the cognition, values and beliefs of bicultural individuals (Hong, Morris, Chiu & Benet-Martinez, 2000). Cultural frame switching proposes that for bicultural individuals, it is possible to switch between different cultural frames in response to cultural symbols associated with a particular culture. Cultural cues in the social environment increase the accessibility of relevant cultural knowledge (or mindsets), which become activated and guide people’s thinking and behaviour. Therefore, bicultural individuals can switch between cultural mindsets which allow them to demonstrate culturally appropriate behaviour for both the mainstream (acquired) and heritage cultures. The argument is that conflicting constructs or beliefs can simultaneously exist but cannot simultaneously become activated and guide behaviours.

The effect of cultural frame switching has been demonstrated in a range of domains such as reasoning and categorization (Ji, Zhang & Nisbett, 2004), values (Briley, Morris & Simonson, 2005), attribution (Benet-Martinez, Leu, Lee & Morris,
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2002), and cognitive complexity (Benet-Martinez, Lee & Leu, 2006). In most studies, cultural icons such as the national flag, famous figures, landscapes or architecture were used to evoke “a particular frame of mind” (Hong et al., 2000, p. 711). For example in one study, Hong Kong Chinese participants received either Chinese cultural priming, American cultural priming or neutral priming before completing an attribution task. Priming was conducted by pictures of cultural symbols, figures from folklore or cartoons, famous people and landmarks. The attribution task was a picture of a fish swimming in front of a school of fish. Participants who received Chinese cultural priming were more likely to make external attributions (e.g., being chased by other fish) and those who received American cultural priming were more likely to make internal attribution (e.g., the fish was leading the other fish). In a follow-up study, participants completed a different attribution task where they read a short story about an obese boy and made attributions on why the boy was obese. Again similar results were found. Those who received American cultural priming were more inclined to make internal compared to external attributions (Hong et al., 1997, study 2 and 3). As Chinese culture encourages people to make external attribution and American culture tends to foster internal attributions, these results are consistent with cultural influences. Results supported the idea that cultural mindsets were activated by these cultural icons and guide people’s thinking.

Cultural accommodation is a phenomenon similar to cultural frame switching and makes similar assumptions. It is argued that individuals will respond in a manner that favours or accommodates the culture associated with the language of presentation.
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(Yang & Bond, 1990). The underlying theoretical base of this phenomenon is rather
different from cultural frame switching and more similar to the arguments of the social
identity approach. It is developed based on the communication accommodation theory
(Giles & Ogay, 2006) which assumes that bilinguals have the ability to adjust their
communicative behaviours to express their group memberships and accommodate an
outgroup member’s cultural norms when using the outgroup member’s language. The
detail of this theory will be outlined in the next section of this chapter. Language as a
method of cultural priming has mostly been investigated through assessing the impact
on the self-concept and self-construal (e.g., Kemmelmeier & Cheng, 2004), as well as
problem solving strategies (Briley, Morris & Simonson, 2005), self-description
(Boucher & O’Dowd, 2011; Trafimow, Silverman, Fan & Law, 1997), implicit attitude
(Danziger & Ward, 2010), and emotion (Caldwell-Harris & Aycicegi-Dinn, 2009). In
one study, English was used to activate an individual mindset and Chinese was used to
activate a collective mindset to see the effect of self-enhancement among bilingual
Hong Kong students (Lee, Oysterman & Bond, 2010). Both cultural frame switching
and cultural accommodation result in the same phenomenon: changes in cognition,
feelings, attitudes and behaviour when switching between cultures or languages. Chen
also stated that most of the cultural accommodation findings can be explained by
cultural frame switching in ways that bicultural individuals shift their values and
attributions toward the norms of the primed culture to accommodate the norm of that
culture (Chen & Bond, 2007, p. 400).
There are also several studies that suggest language can lead to personality shifts among bilingual individuals. For example, bicultural English and Spanish speaking Mexicans in the United States had different personality responses as a function of the language in which the scales were completed (Ramirez-Esparza, Gosling, Benet-Martinez, Potter & Pennebaker, 2006). There was variability in Extraversion, Agreeableness, Conscientiousness and Neuroticism. In another study looking at language effects on personality, bilingual Hong Kong Chinese also were found to shift their personality patterns based on the language in which the personality measures were completed (Chen & Bond, 2010, study 1). They reported to be more similar to a typical Chinese personality profile when they rated their own personality using the Chinese language, and more similar to the typical Western personality profile when they rated themselves using the English language.

Both language and cultural icons and symbols are used as two different methods of achieving the same goal—priming culture (Lechuga, 2008). These methods, though, do not always lead to a consistent pattern of results. In some studies, for example, Hong Kong participants were found to endorse modern Western beliefs more when the instructions were in Chinese and were found to endorse traditional Chinese beliefs more when the instructions were given in English (Bond & Yang, 1982; Chen & Bond, 2007; Yang & Bond, 1980). So rather than language serving as a cultural prime making certain culturally aligned self-definitions, beliefs, and behaviour salient the opposite seems to be occurring. This phenomenon is referred to as ethnic affirmation; where participants affirm their ethnicity when cued by a second language (i.e., English).
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One explanation of ethnic affiliation concerns the connection between the dependent measure and the culture associated with that language. When the connection is obvious to the participants, they might be more likely to affirm to their ethnicity. However this explanation was found not to be supported (Bond, 1983). Chen and Bond (2007) later proposed that the mixed findings may be related to an identity being activated by the language priming and the expectation of the ethnic membership of the audience. Bilinguals can choose either to accommodate to the outgroup norms, or to distinguish themselves from the outgroup when using the outgroup language (Giles & Ogay, 2006). Chen and Bond (2007) used Chinese and English language priming and measured identification and self-esteem among Hong Kong Chinese bilinguals. Participants who completed the measure in English reported higher identification with the Chinese culture and lower identification with the Western culture compared to those who completed the measure in Chinese. These results confirm ethnic affirmation. This study suggests that identification could be an important factor when examining the language effect.

Similarly, contrast effect was observed in cultural frame switching. Research suggests that if there are inner conflicts between being members of both groups then cultural reactance could occur. An example of such reactance is provided by Benet-Martinez and colleagues (Benet-Martinez, Leu, Lee & Morris, 2002). In this work, bicultural American Chinese were randomly assigned to receive either American cultural priming or Chinese cultural priming using pictures of cultural icons. Participants then completed the fish attribution task outlined above (Hong et al., 1997).
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For those participants who had an integrated bicultural American Chinese identity there was evidence of stronger internal attributions when primed with Chinese cues and stronger external attributions when primed with American cues. In other words, participants responded to the attribution task in the same direction as predicted. The bicultural individuals who experience more cultural conflict and perceived their cultural groups as separate and oppositional, on the other hand, demonstrated reverse results. They respond to the Chinese prime with internal attribution which is characteristics of the American culture, and vice versa.

Both ethnic affirmation and cultural reactance demonstrated that some bicultural individuals’ respond to a cultural prime in ways inconsistent with cultural beliefs and norms. It is also the case that the explanations of how cultural primes come to impact on self-definition and behaviour have centred on accessibility of information in memory which makes it difficult to explain the evidence that sometimes despite being primed, responses are in a direction counter to the primed information. If language does activate relevant cultural mindsets or cultural frames, as is suggested, then ethnic affirmation is difficult to explain. After all, it is more likely that the language or cultural icons activated some other constructs, than people endorse Western values and thinking when their Chinese mindset was activated. However, it is not clear how the priming of Western information activates Chinese cultural frames. The effect of cultural priming appears to be more complicated than simply the activation of cultural mindsets.

There are some complications with this analysis because it has also been found in cross-cultural research that as the cultural context changes so too does the "standard"
or "reference" that frames the judgments. It is unclear whether it is self-judgments that are shifting or the standard used for comparison that is shifting (Heine et al., 2002). The reference group effect argues that people choose a reference group to compare themselves to when making self-evaluations. For example, a Japanese person will choose to evaluate him or herself compared to other Japanese, and an American will choose other Americans as the reference group. These changes in the reference group changes the standards from which one-self is compared. For the case of bicultural individuals, the choice of reference group may be more complicated. The choice of the reference group is influenced by the context in which people find themselves, when placed in different context, such as use of different languages or looking at pictures of different cultures, bicultural individuals may use a reference group associated with that context, which could result in different self-evaluation outcomes. What is being argued in this thesis is a process that it quite different. It is not simply that the reference group is changing, what is argued to be changing is also one's own self-categorization and social identity. As the self-categorization changes so too will the reference group. These two processes go together and do affect one's self-judgments. Therefore, when discussing the effect of culture on changes to the self, it is even more important to consider social identity.

Constructs that have been investigated draw on social identity theory (Tafel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher & Wetherell, 1987) and concern levels of identification to Chinese attitudes and beliefs and cultural self-identity (e.g., Kitiyama & Tompson, 2010). The central idea is that
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people may be members of different cultural groups (heritage and mainstream) and be socialized through their experiences living in such groups. The broader social context has an impact on beliefs and behaviour. They may learn what beliefs and behaviours are acceptable and appropriate in that social context by being immersed in it, and behave accordingly. But within these processes of general socialization there are some cultural members who more strongly internalise and define themselves in relation to the norms, values and beliefs of the group (e.g., those with high social identification). These individuals can be described as having a have stronger cultural social identity.

More specifically, a social identity is defined as an individual’s “knowledge that he (or she) belongs to certain groups together with some emotional and value significance to him (or her) of the group membership” (Tajfel, 1972, p. 31). When individuals self-define as a member of a particular group, they will gradually form or learn the stereotypical norms of the group. When group members learn these norms, they discover that certain ways of behaving are appropriate, expected, or desirable and serve to distinguish the group from others. The norms, values and beliefs of the group are internalised and behaviour becomes more normative.

It is widely accepted that a person can belong to different groups at the same time and when a particular group membership becomes salient, the social norms of that group will come to shape self-definition and behaviour. When an individual has high perceiver readiness and the context fits a particular identity or group membership, this identity will become salient, and individual’s self-definition and behaviour will shift in line with the relevant norms (Turner, Oakes, Haslam & McGarty, 1994). These
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processes are adaptive because they enable people to respond to a dynamic social, political and cultural environment such that if the social landscape changes (e.g., through immigration) so to can their psychology and self-definition. It is also the case that the social landscape and people’s group affiliations can remain relatively stable. The psychological processes related to social identity enable social relationships and one’s position in relation to these social relations to be represented.

There is a large body of work on language and social identity referred to as communication accommodation theory (CAT; Giles & Ogay, 2006; Giles & Smith, 1979) where it is recognised that use of language can make salient social identity processes. People accommodate to others and express their social identities by adjusting their speech, vocal patterns and gestures. Language is not just a channel to communicate thoughts and ideas, but also a tool to emphasize or minimize the social differences between themselves and the other party. It is effectively a tool to communicate social identity and group membership. In face-to-face interaction, the perception of the context activates a relevant social identity, which is communicated and reinforced through verbal and nonverbal communication. For example, in the case of cultural accommodation, bilinguals change their communicative behaviours to accommodate to members of the outgroup when using their language (i.e., English used by bilingual Hong Kong Chinese).

It is also possible to draw on social identity processes and CAT to explain ethnic affirmation and cultural reactance. The study of Chen and Bond (2007) suggests that in certain contexts English could make Hong Kong bilinguals aware of their differences
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and distinctions from the Western culture, and hence activate their ethnic identity, rather than their Western identity. This identity salience depends on how bilingual individuals perceive the context. Similarly, in one bicultural study, American Chinese participants reported their attitudes toward their American and Chinese group, more favourable attitudes can be seen as their identification and disidentification towards their two cultural backgrounds. They then received either the American or the Chinese cultural priming before completing an attribution task (Zou, Morris & Benet-Martinez, 2008). What they found was that those who identify with the primed culture showed responses that were consistent with the prime, and those who disidentified with the primed culture showed contrast effects relevant to the prime. Taking these studies together, identification seems to be an important factor in the effect of language or cultural priming. Note that both of these two studies used between-subject design and did not actually observe the changes in cognition, attitude and behaviour when people switch between their two cultural identities. An important consideration then in cultural frame switching and cultural accommodation among bicultural individuals is social identification. Through social identification it is possible to better understand which identity is salient in a given context which could help explain whether culturally consistent or inconsistent self-definition, beliefs and behaviour are likely to occur.

In one study that explores the relationship between cultural frame switching and group identification, Verkuyten and Pouliasi (2006) demonstrated the role of identification in the relationship between cultural frame switching and self-evaluations. In this study, bicultural Greek Dutch participants received either Dutch or Greek
priming procedure of language and cultural icons combined, and their results on positive versus negative self-evaluation, self-stereotyping, attitudes toward family integrity and friendship were compared with native Dutch and native Greek. The bicultural participants also indicated their level of Dutch and Greek identifications. Results indicated that among bicultural participants the two identifications were negatively correlated, and each correlated with relevant self-evaluation and self-stereotyping. Identification also mediated the effect of cultural frame switching, although it was unclear whether priming predicted identification. Overall, this study demonstrated the role of identification in cultural frame switching.

A study by Lechuga (2008) compared the two different priming methods on identification and acculturation. In two separate studies with between-subject design, bilingual and bicultural Mexican American participants either received language priming, or cultural mindset priming. They reported self-construal, ethnic identity, self-classification as Mexican or Hispanic (Mexican American), and endorsement towards the American and Mexican culture. Cultural mindset priming had no impact on ethnic identification or feelings associated with being Mexican. However, language use predicted heritage cultural identification, and self-classification as Hispanic predicted stronger American identification compared to self-classification as Mexican. Both priming methods showed effect on self-construal though. Participants reported higher agreement with collectivist statements when primed with Mexican cultural icons or Spanish. This research concluded that the two priming methods may work differently in
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terms of their effects on identification. Therefore, the present research looked at these
priming methods separately in two studies.

The current research examines language and cultural mindset priming on
personality, and explores the effect of identification in this process explicitly. Social
identification measures are included in studies where cultural frame switching is
manipulated through language (Study 1) and cultural icons (Study 2). In order to
examine the impact of cultural mindsets on the self, Big Five personality is assessed
(Costa & McCrae, 1992) using a within-subject design in the same way as Ramirez-
Esparza and colleagues with Spanish and English bilinguals (Ramirez-Esparza et al.,
2006). As the purpose of the present thesis was to examine personality shift within the
individual when different social identity or group membership was made salient, within-
subject design was employed to observe this personality shift. Previous studies have
indicated that personality differences between Australian and Chinese populations
include Extraversion, Openness and Neuroticism (McCrae et al., 2005; Schmitt et al.,
2007). Australian tend to score higher on Extraversion and Openness, and lower on
Neuroticism compare to Chinese people. Therefore it is expected that
bilingual/bicultural Australian Chinese participants will rate themselves as higher in
Extraversion, Openness and lower in Neuroticism when their Australian cultural
identity is primed. In line with these theoretical arguments it is also possible that
identification mediates the relationship between cultural priming and personality.

In addition to this main hypothesis, we are also interested in how bicultural
individuals integrate their mainstream and ethnic identity. Previous research on cultural
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reactance suggests that the pattern of findings is different depending on whether there are feelings of conflict between the heritage and mainstream cultures. Therefore the measure of bicultural identity integration is included in Study 2. Examining the relationship between integration and social identification may provide further insight into the overlap between these constructs and areas of research.

Study 1

Method

Design and Participants. The present study used a 2 (language: English vs. Chinese) X 2 (order: English first vs. Chinese first) within subject design with language use as the main independent variable. Participants completed a measure of personality in both Chinese and English, with the order counterbalanced. They also completed in English measures of Chinese and Australian identification prior to completing both versions of personality scale.

Participants were ethnic Chinese who had obtained Australian citizenship or permanent residency and they were recruited by posters and snowball sampling methods. Although not used for participant selection criteria, participants showed high level of both Australian and Chinese identification. Initially 55 participants responded to recruitment advertisements, but 31 of them had to drop out of the study because their language skills in either Mandarin or English were insufficient to successfully complete the tasks. In the end, twenty-four participants (12 women, 12 men, age range 19 to 54 years with the mean of 29.7 years) completed both language versions.
Procedure and materials. The relevant measures were completed via an online survey in participants own time. Participants first completed the Australian and Chinese identification measures, with the order counterbalanced. Both measures were presented in English to ensure consistency. Participants then were instructed to complete the Big Five personality measure. Participants were randomly provided with the English or Chinese version. They then completed a filler task composed of 15 Raven’s test items. After the filler task they completed the personality measure in the other language. Finally they were asked a range of demographic questions, and also were debriefed and thanked for their efforts and participation in the research. The full questionnaire is presented in Appendix 1A.

The measures were as follows:

1. **Australian and Chinese identification.** Identification was measured using eight items. Responses were made on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). These 8 items are widely used to assess social identification and were based on social identification measurements such as those by Cameron (2004) and Leach et al (2008). Example items are as follows: “In general, I feel similar to other members of the Australian [Chinese] community” and “I feel good about being a member of the Australian [Chinese] cultural group”. The alphas for the Australian and Chinese identification scales were both .923. Participants rated their identification of being Australian slightly higher than the mean point ($M =$
4.40, $SD = 1.32$), and reported highly identified as being Chinese ($M = 5.29$, $SD = 1.35$).

2. **Personality.** The Big Five Inventory (BFI; John, Naumann, & Soto, 2008; John & Srivastava, 1999) was used to assess personality. In both versions personality is measured in 5-point Likert-type scale that range from 1 (*strongly disagree*) to 5 (*strongly agree*). All items start with the statement “I am someone who...” and participants were asked to what extent they agreed or disagreed with each statement. The five dimensions BFI are: Openness (10 items), Conscientiousness (9 items), Agreeableness (9 items), Extraversion (8 items) and Neuroticism (8 items). This personality measure is widely used in bilingual and cross-cultural studies, and is an effective and relatively brief measurement of Big Five personality with good psychometric properties. The alphas of both language versions of BFI are outlined in Table 4.1 below. The reliability for Agreeableness was lower for both English and Chinese versions which suggest caution when interpreting the data.

<table>
<thead>
<tr>
<th>Personality Dimension</th>
<th>Chinese $\alpha$</th>
<th>English $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>.79</td>
<td>.78</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>.46</td>
<td>.55</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>.70</td>
<td>.80</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.85</td>
<td>.83</td>
</tr>
<tr>
<td>Openness</td>
<td>.78</td>
<td>.70</td>
</tr>
</tbody>
</table>
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3. Demographic information. Participants reported their language proficiency and usage, as well as their residency, place of birth and the age they were when they arrived to Australia.

Results

As can be seen from Table 4.2, Chinese identification did not correlate with Australian identification. The two identifications were relatively independent of each other. Strongly identifying with being Chinese did not increase or decrease identification as being Australian. Interestingly, both Chinese and Australian identification seemed to have some level of association with personality dimensions. Australian identification was marginally correlated with the English version of Extraversion, Agreeableness and Neuroticism, and the Chinese version of Neuroticism. Chinese identification was marginally correlated with the English version of Conscientiousness. Also results suggest that the more people identified with being Australian, the more extraverted, emotionally stable and less agreeable they were. The more people identified with being Chinese, the more conscientious they were. This may indicate that identification is associated with personality, and may play a role in the cultural frame switching of personality.

Table 4.2. Correlations between constructs

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. English</td>
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<tr>
<td>Extraversion</td>
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<tr>
<td>2. English</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>.23</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>3. English</td>
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<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.15</td>
<td>.13</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td>4. English</td>
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</tr>
<tr>
<td>Neuroticism</td>
<td>.16</td>
<td>-.15</td>
<td>-.14</td>
<td></td>
<td></td>
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<td>5. English</td>
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<tr>
<td>Openness</td>
<td>.26</td>
<td>.29</td>
<td>.17</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Cultural mindsets and variability in self-definition

One-way ANOVAs were conducted for each of the Big Five personality factors across each Language condition. As can be seen in Table 4.3, participants scored higher on all the Five Factor personality dimensions in the English language compared to the Chinese language conditions. There was a significant difference for Extraversion with participants reporting significantly higher extraversion in the English compared to Chinese language condition.

Table 4.3. Means and Standard Deviations of the Personality Measures

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Chinese</th>
<th>F (1,21)</th>
<th>P</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>3.04 (.55)</td>
<td>2.92 (.56)</td>
<td>5.051</td>
<td>.035</td>
<td>.180</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.68 (.50)</td>
<td>3.57 (.48)</td>
<td>1.934</td>
<td>.178</td>
<td>.078</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.61 (.41)</td>
<td>3.54 (.40)</td>
<td>1.447</td>
<td>.241</td>
<td>.059</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>3.00 (.70)</td>
<td>2.96 (.68)</td>
<td>.268</td>
<td>.609</td>
<td>.012</td>
</tr>
<tr>
<td>Openness</td>
<td>3.23 (.41)</td>
<td>3.20 (.54)</td>
<td>.237</td>
<td>.631</td>
<td>.010</td>
</tr>
</tbody>
</table>
Mixed model analysis on identification and language

Analyses were conducted to examine the impact of language and Australian and Chinese identification on self-definition in terms of self-reported personality. For each personality construct it is possible to assess whether language and/or identification are impacting on responses. Significant findings were found only for Extraversion and Neuroticism, all other $t < 1.96$, n.s.

**Extraversion.** When identification was included in these models, language did not have a significant impact on Extraversion. Rather the main finding was that Australian identity was significant in predicting Extraversion ($b = .17, p = .006$) such that the more participants identify with being Australian, the more extraverted they describe themselves. There were no significant results for Chinese identification.

**Neuroticism.** Language had no impact on Neuroticism responses. Australian identity was a significant predictor. The more participants identified with being Australian, the less neuroticism they reported. There were no significant results for Chinese identification.

Table 4.4. Mixed model results on Extraversion

<table>
<thead>
<tr>
<th></th>
<th>Estimate</th>
<th>Std. Error</th>
<th>t (46)</th>
<th>Sig.</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LL</td>
</tr>
<tr>
<td>Extraversion</td>
<td>Intercept</td>
<td>2.82</td>
<td>.45</td>
<td>6.30</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>-.12</td>
<td>.07</td>
<td>-1.60</td>
<td>.117</td>
</tr>
<tr>
<td></td>
<td>identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Australian</td>
<td>.17</td>
<td>.06</td>
<td>2.87</td>
<td>.006</td>
</tr>
<tr>
<td></td>
<td>identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>.15</td>
<td>.15</td>
<td>1.04</td>
<td>.301</td>
</tr>
</tbody>
</table>
Discussion

This experiment concerned the impact of new cultural experiences, which includes being a member of both a heritage (Chinese) and mainstream (Australian) group, on self-definition processes. Participants were immigrants to Australia from China and were citizens or residents of Australia. Language (English or Chinese) was used to prime or make salient one ethnic mindset compared to the other and the impact on the self-concept was assessed using the Five Factor personality (McCrae & Costa, 1985). In line with previous research it was hypothesized that language use would impact on personality (e.g., Chen & Bond, 2010) and furthermore that cultural self-identify or social identification with the cultural group would help explain the relationship between language use and self-definition.

In terms of findings there was evidence that self-reported Extraversion was higher in the English language compared to Chinese language condition. There were no other significant findings for the other personality constructs (Agreeableness, Conscientiousness, Neuroticism, and Openness). Based on past results of cross-cultural profiles of personality, we hypothesized that when completing the English version of the personality scale, participants would report higher levels of Extraversion, Openness
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and lower level of Neuroticism compare to their responses to the Chinese version of BFI. In line with this prediction Extraversion increased when a more Western sense of self was made contextually relevant, but no significant results were found for Openness and Neuroticism.

In relation to the second aim of the research, which was to investigate the role of social identification with the heritage and mainstream cultural groups, the results were promising. Interestingly identifying as being Chinese has no significant correlation with identifying as being Australian, which suggests the two identifications are independent of each other. This provided further support for the bidimensional model of acculturation proposed by Berry (1997). Stronger identification with being Australian was significantly positively related to Extraversion and significantly negatively related to Neuroticism. When identification as an Australian with included in the model concerning Extraversion, the main effect for Language became non-significant. What this suggests, in line with predictions, is that social identification does mediate the relationship between language primes and self-definition. The results for Extraversion and Neuroticism suggest that the more people identify with being Australian the more extraverted and less neurotic their responses. This is consistent with the Australian personality profile of being more extraverted and less neurotic compared to Asians countries such as China. In other words, the more people identify with being Australian, the more their personality patterns become similar to typical Australians. Moreover, identity process may be the mechanism of this language effect.

Limitations and future directions
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The present study has a number of limitations which point to important future directions for research. First of all, the sample size was small due to the difficulty recruiting bilingual participants. A larger sample size is needed to more carefully examine the impact of cultural mindsets on self-definition and personality processes. A larger sample size is also necessary to further investigate the reliability of the personality measures in both languages where Agreeableness in particular was less reliable. Secondly, there is no identification measure after the language priming. With a before-and-after identification measure, we would be able to see why and how language works as a method of priming social identity. However, due to issue that measuring identity could make it salient (see also Haslam et al., 2006) we chose to measure identification only in the beginning of the study, before the language manipulation.

Over and above these points language use is only one method that has been used to invoke cultural mindsets which then in turn are argued to impact on self-definition. Using cultural icons to prime cultural mindsets, Ng and colleagues found that alternating between cultural mindsets did impact on the social connectedness and inclusiveness of the self (Ng & Lai, 2008; Ng, Han, Mao & Lai, 2010). Although Lechuga (2008) did not find effect of cultural mindset priming on participants’ ethnic identification, cultural mindset priming did impact on participants’ self-construal. It is intriguing, therefore, to see the role of identification in mindset priming through cultural icons.

The use of Big Five personality as an indicator of the impact of culture on the individual is important because such personality constructs are argued to be difficult to
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culture change and relatively stable (McCrae et al., 2000). Showing that invoking particular cultures can impact on personality provides insight into the importance of cultural group memberships and identification to such memberships in shaping attitudes, beliefs and behaviours. More broadly it helps in understanding the variability of the self-process and the role of group memberships (particularly when internalised as part of one’s social identity) on the individual. In the next experiment cultural mindsets are manipulated through icons and symbols rather than language. This manipulation enables a larger sample size so the findings of this first study can be further investigated.

Study 2

In Study 2, we used cultural icons to prime cultural mindsets. Similar to Study 1, we hypothesized that bicultural Australian Chinese participants will rate themselves as higher in Extraversion, Openness and lower in Neuroticism when they received the Australian cultural mindset primes compare to when they receive the Chinese mindset primes. In addition to this hypothesis, we also hypothesize that Australian and Chinese identification may mediate this effect. Also, we explore the role of bicultural identity integration in this cultural frame switching and its interaction with identification. As mentioned in the introduction section, bicultural identity integration was nominated as the mechanism behind cultural reactance when people receive cultural mindset priming (Benet-Martinez et al., 2002). Research also proposed that identification and disidentification was associated with this cultural reactance (Zou et al., 2008). However, the line of bicultural research did not provide clear explanation as to why people who
experienced conflicts between their two cultural identities would activate Western cultural mindset when receive Chinese mindset priming and vice versa. We hope the relation between bicultural identity integration and identifications may offer some clarity to the issue.

**Method**

**Design and participants.**

The present study used a 2 (cultural mindset priming: Australian vs. Chinese) X 2 (order: Australian first vs. Chinese first) design with cultural mindset priming as the main independent variable. Participants were randomly assigned to either an Australian cultural prime first or Chinese cultural prime first condition. At the beginning participants completed measures of both Chinese and Australian identification. After completing the cultural mindset priming exercise, participants completed a measure of Big Five personality. A filler task was then provided, as well as a measure of bicultural identity integration followed by the alternative cultural prime and Big Five personality assessment. At the end participants also reported their demographic information. All measurements were completed in English.

Two waves of data collection were conducted in order to achieve a large enough sample (in line with Tabachnick & Fidell, 2007 that case-to-predictor ratio should be greater than 15). The first wave occurred from October 2013 to April 2014, and the second wave occurred September 2014 to January 2015. The only change was that in the second wave a manipulation check was included (that was omitted in the first wave). In total, sixty seven Australian Chinese participants currently living in Australia.
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participated in the study with 62 (Male = 32; Female = 29) of these completing all the required measures. Of the 62 participants, 44 were citizens, 10 were permanent resident, and 7 were residents from other countries. Participants originated from Mainland China (38), Taiwan (2), Hong Kong or Macau (7), Singapore (3), Malaysia (4), with 7 originating from other regions. The age range of participants was 17 to 55 years with the mean of 27.6 years. Participants reported high level of both Australian and Chinese identification (reported below in the manipulation check section), which indicate that they were bicultural individuals.

Participants were recruited by posters, snowball sampling methods or were approached by researchers during club activities. Participants were provided with the survey link and completed the survey from their own computer in their own time. The option was available to leave their mailing address so a $10 gift card could be sent to thank them for their time and effort in completing the questionnaire.

**Materials.**

The measures that were used in this study were similar to Study 1. The same personality and social identification measures were used. In addition measure of bicultural identity integration was included in Study 2. Below the new materials are described including the cultural prime manipulation that used images of cultural symbols and icons, manipulation checks, and bicultural identity integration.

_Bicultural identity integration (BII, Benet-Martinez & Haritatos, 2005)._ BII was measured between the two personality scales just after the filler task. BII assesses the compatible or conflicting between different group memberships in this case Chinese and
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Australian. It is included in study 2, because literature suggest that BII subscale of
blendedness was associated with higher overlap between the self and the norm of the
culture (Miramontez, Benet-Martinez & Nguyen, 2008). The scale was slightly
modified from the original (Benet-Martinez & Haritatos, 2005) to suit the Australian
context. It contains eight items, with four measuring distance and the other four items
measuring conflicts. Responses were measured on a 5-point Likert scale. Sample items
were included in the appendix 1A.

Table 4.5. Reliabilities of the constructs

<table>
<thead>
<tr>
<th>Scale</th>
<th>Cronbach’s α</th>
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<tbody>
<tr>
<td>Australian identification</td>
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<tr>
<td>Chinese identification</td>
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<tr>
<td>identity conflict</td>
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<td>Australian priming Extraversion</td>
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<td>Australian priming Agreeableness</td>
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<td>Australian priming Conscientiousness</td>
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<td>Australian priming Neuroticism</td>
<td>.74</td>
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<tr>
<td>Australian priming Openness</td>
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<td>Chinese priming Extraversion</td>
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<td>Chinese priming Agreeableness</td>
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<td>Chinese priming Conscientiousness</td>
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<tr>
<td>Chinese priming Neuroticism</td>
<td>.74</td>
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<tr>
<td>Chinese priming Openness</td>
<td>.80</td>
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</tbody>
</table>

Prime of cultural mindset: Stimuli that could be used to prime Chinese and
Australian cultural mindsets were developed for this study. None of the existing
literature outlined the development process for the stimuli. The first stage of the
process was the selection of the images that were representative of Australian and
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Chinese cultural groups. The second stage involved presenting these images to members of the target population and assessing whether a particular cultural prime was evident through exposure to these images.

In terms of selecting particular images, a sample of 42 participants (20 for the Australian icons and 22 for the Chinese icons) were asked to evaluate the pictures of icons and symbols associated with the Australian culture and Chinese culture. In total 33 pictures of Australian cultural icons were presented to native Australians with Caucasian background to assess. These pictures including famous figures, indigenous arts, local animals and flowers, famous landscapes, sports, food, and lifestyle. Similarly, 36 pictures of Chinese cultures were presented to native Chinese who arrived in Australia only recently.

The participants were asked to rate each picture on three dimensions representativeness (“This picture represents Australia”), emotion (“This picture makes me feel more Australian”), and familiarity (“The kind of images in this picture are familiar to me”). All questions were rated on a seven-point Likert scale from “strongly disagree” to “strongly agree”. Only those pictures that scored a high mean score for all three questions were selected. The selected pictures for Chinese culture were porcelain, Chinese dragon, panda, Terracotta warriors, the Great Wall, and the “four treasures of the study” calligraphy materials. The selected pictures for Australian culture were indigenous boomerang, kangaroo, emu, Ayers rock, Opera House, and koala. None of the food or lifestyle pictures were chosen to represent the two cultures.
In terms of assessing whether exposure to the images did in fact make salient a particular cultural group membership, 10 ethnic Chinese who obtained Australian citizenship or permanent residency were asked to respond to the images. More specifically, participants were presented with the images and asked to respond to the following questions on a 1 (not at all) to 7 (very much) scale; 1) How much do you think these pictures represent Chinese/Australia? 2) How much do you think these pictures make you feel more Chinese/Australian? 3) How familiar are the images in these pictures to you? 4) Do you think these pictures are enough for you to associate yourself with Chinese culture/Australian culture? Finally, participants provided an open-ended response to the set of pictures and whether they thought there were any other images that better represented the two cultural groups. The results indicated high agreement across participants. The selected pictures were rated as being strongly associated with respective cultures, and on presentation to make respondents feel more Australian or more Chinese. They were chosen to not only activate relevant cultural mindsets, but also make salient social and cultural identities. Therefore, these pictures (presented in Appendix 1B) were selected as mindset priming pictures for the main experiment.

**Manipulation check:** In wave 2 of Study 2 a manipulation check for the cultural prime was included. After being exposed to the images of cultural icons participants (N = 20) were asked the following; 1) “I have a lot in common with other members of the Australian/Chinese community”, 2) “In general, being a member of the Australian/Chinese community is an important part of my self-image”, and 3) “When
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completing the measure above what best describe the way you thought about yourself?”. Responses for items 1 and 2 were made on a 1 (strongly disagree) to 7 (strongly agree) scale and for item 3 the ends were labelled “more like a Chinese” (1) and “more like an Australian” (7). These first two items are the same as was included in the social identification measure assessed before exposure to the cultural prime. These items can be assessed before and after the cultural prime to assess the impact of the manipulation.

Demographic information: Participants reported their language proficiency and usage, as well as their residency, place of birth and age when they arrived to Australia.

Procedure

The online tasks and questions were structured so participants first completed the Australian and Chinese identification measures, with the order counterbalanced. Participants then completed the cultural mindset priming task and the personality measure for one cultural group (randomly assigned). This was followed by the BII scale, and as in Study 1, a filler task where participants were requested to complete 15 Raven’s matrix questions. Because the BII scale may bring participants to think about both cultural identities they have and therefore interfere with cultural mindset priming, it was arranged to be filled out before the filler task to control its effect. After the filler task participants completed the cultural priming task and personality measures with respect to the other cultural group. Finally they completed the demographic questions and were thanked for their research participation and debriefed.
Results

Data Screening and manipulation checks

Univariate outliers were screened through histogram and boxplot. In total 7 outliers were found in the boxplot. Extreme outliers were replaced with the next less extreme value.

Due to the fact that we included manipulation checks only in the second wave of data collection, twenty participants completed this manipulation check. Responses for the items “I have a lot in common with other members of the Australian [Chinese] community.” and “In general, being a member of the Australian [Chinese] community is an important part of my self-image” were averaged and analyses as a scale pre- and post-manipulation. The mean Australian identification pre-priming was 5.25 ($SD = .90$) and post-priming was 5.40 ($SD = .74$). Participants’ level of Australian identification was slightly elevated after the priming, however this difference was not significant, $t(19) = 1.10, p > .10$. The mean Chinese identification pre and post priming was 5.63 (.99) and 5.35 (1.23), respectively. This difference was only marginally significant, $t(19) = 1.93, p = .069$. However, it may suggest that our manipulation of the Chinese cultural mindset was not successful given identification was higher at pre-test.

The third manipulation check item, “When completing the measure above what best describe the way you thought about yourself?” was completed in both the Australian prime and Chinese prime conditions. It was expected that the means would be above the mid-point in the Australian prime condition and below the mid-point in the Chinese prime condition. The mean of the Australian condition was 4.05 ($SD = 1.54$),
slightly above the mid-point indicating responses more indicative of self-definition as Australian. In the Chinese condition the mean was 4.00 (SD = 1.59). The mean difference did not reach significance. Overall the manipulation checks provides some evidence that the Australian cultural mindset priming was successful in making Australian culture salient but the Chinese cultural mindset priming was not.

**Correlation of identification, BII and personality score**

Similar to Study 1, Australian identification was not correlated with Chinese identification, r = .119. Australian identification and Chinese identification were both correlated with personality under both priming conditions. The more people identified with being Chinese the higher reported levels of Conscientiousness, Agreeableness, Openness, and lower levels of Neuroticism. Identification with being Australian was positively correlated with Agreeableness and Openness. The more people identify with being Chinese, the more conscientious, agreeable, open to experience and emotionally stable they are. The more people identify with being Australian, the more open and agreeable they are as well. This result is similar to the correlation in Study 1, but stronger. The sub-factors of BII which assessed cultural distance and cultural conflict were not correlated with either identification or any of the personality dimensions.

**Table 4.6. Intercorrelations for scores on the BFI in both conditions, identification and BII**

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<td>Extraversion</td>
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<tr>
<td>Conscientiousness</td>
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<tr>
<td>Agreeableness</td>
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<tr>
<td>Neuroticism</td>
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<td>-.28*</td>
<td>-.47**</td>
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</table>
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5. Australian Openness .31* .19 .26* -.27*
6. Chinese Extraversion .85** .20 .15 -.14 .23†
7. Chinese Conscientiousness .25† .74** .44** -.26* .16 .27
8. Chinese Agreeableness .32* .47** .79** -.24† .18 .25† .51**
9. Chinese Neuroticism -.30 -.30* -.45** -.70** -.31* -.23† -.49** -.39**
10. Chinese Openness .31* .14 .20 -.18 .73** .25* .21 .30* -.28*
11. Australian identification .20 .22 .51** -.17 .40** .15 .26* .39** -.28* .38**
12. Chinese identification .16 .26* .35** -.11 .31* .17 .36** .37** -.33* .28* .12
13. BII cultural distance -.06 .03 .06 .19 .11 -.01 -.01 -.14 .12 -.13 .06 -.01
14. BII cultural conflict -.22 -.19 -.20 .04 -.26† -.22 .07 -.08 -.28† -.05 -.23 -.25 -.22

†p < 0.1    *p < 0.05   **p < 0.01

Cultural prime, identification and personality

Participants reported relatively high levels of Chinese and Australian identification prior to accepting the cultural mindset priming, with slightly stronger Australian identification ($M = 5.23, SD = .71$) than Chinese identification ($M = 5.13, SD = .91$). As can be seen from Table 4.7, after being exposed to the Australian cultural prime, participants reported slightly higher mean levels of each of the five personality traits except for Openness.

Table 4.7. Mean and Standard Deviations for personality in both conditions

<table>
<thead>
<tr>
<th></th>
<th>Chinese priming</th>
<th>Australian priming</th>
</tr>
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<tbody>
<tr>
<td>Extraversion</td>
<td>3.24 (.49)</td>
<td>3.26 (.51)</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.63 (.53)</td>
<td>3.65 (.54)</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.42 (.52)</td>
<td>3.46 (.47)</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>2.82 (.51)</td>
<td>2.86 (.54)</td>
</tr>
<tr>
<td>Openness</td>
<td>3.52 (.47)</td>
<td>3.42 (.44)</td>
</tr>
</tbody>
</table>
Responses on the personality measures were further analysed using a repeated measures ANOVA. The result suggests that the cultural priming manipulation did significantly impact on Openness, $F(1, 59) = 6.159, p = 0.016$, partial eta squared was 0.095. Participants reported lower Openness when their Australian cultural mindset was primed compared to when their Chinese mindset was primed. No other significant findings emerged for the other personality factors.

A series of ANCOVAs were also conducted where Australian identification and Chinese identification were included in the models as covariates. Such analyses enable an investigation of identification processes as predictors of personality. There were significant findings for Conscientiousness, Agreeableness and Openness. For Conscientiousness, there were no main or interaction effects for cultural prime and order but Chinese identification did significantly predict Conscientiousness, $F(1, 55) = 5.845, p = .019$, partial Eta square = .096.

With respect to Agreeableness, there were no significant main or interaction effects with respect to cultural prime or order. Both Australian ($F(1, 53) = 14.542, p < .001$, partial Eta square = .215) and Chinese identification ($F(1, 53) = 9.671, p = .003$, partial Eta square = .154) were significant in predicting Agreeableness.

The analyses for Openness confirmed the main effect for cultural priming, and also found a significant interaction between order and priming ($F(1, 60) = 8.775, p = .004$, partial Eta square = .128). Participants who received Chinese cultural priming first scored higher on Openness in the Chinese priming condition ($M = 3.69, SD = .46$) compared to the Australian priming condition ($M = 3.45, SD = .45$). There were no
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effects depending on whether the Australian cultural prime was completed first or second. When entering identification into the model, both Australian identification ($F(1, 57) = 18.192, p < .001$, partial Eta square = .242) and Chinese identification ($F(1, 57) = 6.075, p = .017$, partial Eta square = .096) significantly predicted Openness. More importantly, the effect of mindset priming decreased to non-significant when identification measures were entered in the ANCOVA models. This could suggest full mediation effects of Australian identification on Australian cultural priming.

In order to test the moderation effect of identification on cultural frame switching, we performed repeated ANOVAs using categorical variables of Australian and Chinese identification as predictors. Zou et al. (2008) suggested that people who highly identify with the primed culture would react to cultural mindset priming in a way consistent with the priming, whereas those who disidentify with the primed culture would react in the opposite way. We categorized the sample into a low identifier group and high identifier group, respectively. The result showed that there was significant interaction effect of priming x Australian identification, $F(1, 40) = 4.805, p = .034$. Low Australian identifiers reported increases on their Agreeableness level when they received the Chinese mindset priming ($M = 3.45, SD = .43$) compared to the Australian priming ($M = 3.35, SD = .40$), whereas high identifiers reported lower levels of Agreeableness after they received Chinese mindset priming ($M = 3.68, SD = .57$ compared to $M = 3.77, SD = .59$ for the Australian condition). This result confirmed the findings of Zou et al. (2008) that identification may be the key to cultural frame switching and cultural reactance.
Regarding the construct of bicultural identity integration, although it did not correlate with either Australian or Chinese identification, when comparing the identification level among people with low or high cultural conflict and cultural distance, we found that people who experienced more conflicts between their cultural identities reported lower levels of Australian and Chinese identification. For people with low cultural conflict, the mean for Australian identification was $M = 5.32 (.75)$ and it was $5.20 (1.07)$ for Chinese identification. Those people with high cultural conflict reported Australian identification of $M = 5.03(.64)$ and Chinese identification of $M = 4.74 (.63)$. However this difference was not significant.

We also conducted ANCOVA with BII cultural conflict and distance entered as covariates to see if BII had an impact on how bicultural individuals responded to cultural mindset priming. We found that there was an interaction effect of priming and cultural conflict on Conscientiousness ($F (1, 38) = 5.715, p = .022$, partial Eta square $= .131$). Bicultural individuals who experienced low cultural conflict reported lower level of Conscientiousness when primed with Chinese cultural mindset ($M = 3.39, SD = .53$) compared to when primed with Australian cultural mindset ($M = 3.56, SD = .49$). In contrast those who experienced high cultural conflict reported slightly higher levels of Conscientiousness after being primed with the Chinese cultural mindset ($M = 3.36, SD = .44$) compare to the Australian priming condition ($M = 3.31, SD = .44$).

**Discussion**

This aim of this study was to explore the role of identification in cultural frame switching when cultural mindsets are used as primes. Participants initially reported
above mean levels of Australian and Chinese identification. After the Australian priming, participants identified with being Australian more than before they received the prime, which suggests that our Australian priming was effective. However, participants’ level of Chinese identification was higher before they received the Chinese mindset priming. This could mean either that our Chinese mindset priming did not work, or that it activated constructs other than Chinese identification.

We only observed personality shift on the dimension of Openness, however the direction in the means was opposite to what was expected. When the Chinese mindset was primed first (before the Australian mindset) higher levels of Openness were found in the Chinese prime condition compared to the Australian prime condition. The same results were not observed when the Chinese mindset was primed second (after the Australian mindset). In the context of a mindset prime that was weak, order could be affecting the salience or meaning of the category. What is clear is that the personality dimension of Openness did show significant variability. Still, the effect on Openness, (whether Chinese priming resulted in an increase of Openness, or the Australian priming resulted in a decrease of Openness) was not consistent with our hypothesis. This finding could be an example of the boomerang effect found in other studies, or it could be related to the weaker Chinese mindset priming. Nonetheless, the culture priming had a significant effect on Openness, which indicated that cultural priming contributed to personality shift. Future research needs to address this problem through the inclusion of a stronger manipulation of cultural mindset priming and a larger representative sample.
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Identification of being Australian and being Chinese as covariates were significant in predicting personality on Conscientiousness, Agreeableness and Openness, with a quite large effect size. This result, combined with the manipulation check, suggests that the activation of social identification may be associated with personality in cultural frame switching. Moreover, the effect of cultural mindset priming on Openness disappeared when identification was taken into account, which suggest the mediation role of identification. This means that identification may be behind the effect of cultural mindset priming and mindset priming may function through activation of cultural identification. Also, both Australian and Chinese identification were positively correlated with Agreeableness and Openness. The positive correlations between Australian identification and these personality dimensions are consistent with the literature, as Australians tend to score higher on Agreeableness and Openness compared to Chinese (who are assessed in China). However, the positive correlations of Agreeableness and Openness related to Chinese identification were unexpected. One plausible interpretation for these positive correlations with Chinese identification would be that people who now live in Australia who identity with their heritage culture might already have this particular personality type. It is difficult to interpret this finding without more information about the meaning or the content of what it means to be Chinese for these participants. What characteristics of the group are they specifically identifying with?

The significant interaction between Australian identification and priming suggested that high or low identifiers may show different reaction to the cultural
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priming, confirming the findings of Zou et al. (2008). Participants who highly identify
with being Australian reported consistently higher level of Agreeableness than low
 identifiers, and they reported higher level of Agreeableness when primed with the
Australian mindset compared to when primed with the Chinese mindset. In contrast,
those who did not identify strongly with being Australian reported higher level of
Agreeableness when primed with the Chinese mindset. Nonetheless, this moderation
role of identification demonstrated the important role of identity processes in cultural
frame switching.

We also explored the effect of BII in explaining cultural frame switching. We
found a limited effect of cultural conflict on Conscientiousness, where people with low
or high levels of cultural conflict responded to the priming differently. The findings
suggest that in our study participants with low levels of cultural conflict responded to
the Chinese priming consistent with the Chinese cultural norm, and participants with
high levels of cultural conflict responded in ways opposite to the cultural norm.

Although BII was not correlated with identification, we did find that people who
experienced high cultural conflict reported lower mainstream and heritage identification
than those who did not. This could mean that experiencing cultural conflicts obstructed
people from identifying highly with their heritage and mainstream identity. It could also
mean that people need to learn how to resolve these cultural conflicts to identify highly
with their cultural groups.
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General Discussion

In these two studies, we tested the phenomenon of cultural frame switching on Australian and Chinese bilingual and bicultural individuals with language and cultural icons as priming methods. Moreover, we explored the role of identification in the process of cultural frame switching. Our hypothesis regarding the priming effect was that language and cultural icons can trigger cultural mindset activation and lead to personality shift among bilingual and bicultural Australian Chinese individuals. Specifically, we hypothesized that this frame switching occurs on the dimensions of Extraversion, Neuroticism and Openness. Our key hypothesis was that Australian and Chinese identification predicts personality change. Regarding bicultural identity integration in Study 2, BII may relate to levels of Australian and Chinese identification.

Our results in Studies 1 and 2 both supported our first hypothesis, although on different personality dimensions. In Study 1, we used language as the priming method for cultural mindset, and we found some language effects for personality, with a significant difference between the Chinese language and English language conditions for Extraversion. In Study 2, we used cultural icons to prime Australian and Chinese cultural mindsets, and although the Chinese priming did not work as we expected, we found a significant difference for Openness between the Australian and Chinese conditions.

The key hypothesis of these two studies is that Australian and Chinese identification will play a role in the cultural frame switching process. In both studies we found evidence that identification, especially Australian identification, predicted levels
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of personality. In Study 1, Australian identification predicted Extraversion and Neuroticism. In Study 2, both Australian and Chinese identification predicted Conscientiousness, Agreeableness and Openness. Despite that we were not able to find consistent effects on the same personality dimensions across studies, there is consistency of the effect of identification on personality. In study 1, the effect of language disappeared when Australian identification was entered in the model. In study 2 the effect of cultural mindset priming on Openness disappeared when identification was taken into account, which suggest a mediation role of identification. This means that identification may help explain the effect of cultural mindset priming and mindset priming may function through activation of cultural identification. However, in study 2 we were able to use ANCOVAs to test the effect of identification, but in study 1 due to the limited sample size we only used mix-model analysis.

Due to the complication of the language effect and identification measure, in Study 1 we chose to measure identification prior to the two language version of self-rated personality, and therefore were unable to test the other criteria of the mediation effect, that language leads to changes in identification level. Nevertheless, the role of identification on personality was well established in Study 1 and 2.

Finally in Study 2, we also tested the effect of BII, as it is indicated in the literature as an individual-level factor that could impact on the effect of cultural mindset priming. The results indicated that indeed cultural conflict impacted on how individuals responded to cultural mindset priming on Conscientiousness. Results also revealed that
those who reported experiencing cultural conflicts and keeping the two identities apart had slightly lower level of both Australian and Chinese identifications.

Despite small sample size in both studies, the results provided further evidence of personality variability as a function of changes in context. With the conservative within-subjects design, the studies demonstrated that both language use and cultural icons can trigger personality shift. Furthermore, both results from Study 1 and 2 indicated that environmental factors such as cultural group memberships predicted personality. Changes in the level of identification were associated with personality. It indicated that social identity processes and group membership may be important in explaining variability in the self. Knowing and internalizing the values and beliefs may be sufficient to induce cultural frame switching, however, the acceptance and emotional connectedness to one’s cultural group membership may also be important in this process.

The manipulation check in Study 2 revealed interesting and unexpected findings. Although our Australian cultural priming increased level of Australian identification, as we expected, the Chinese cultural priming actually reduced participants’ level of Chinese identification. In the pre-test we carefully tested our priming material and only chose the pictures that represent Chinese culture and seemed to make people connect with Chinese culture more. The result of the manipulation checks suggested that cultural mindset priming by cultural icons may be associated with factors other than identification. Future studies that use cultural icons for priming should carefully check the effect of the manipulation.
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The present research extended the application of social identity perspective (Haslam, Ellemers, Reicher, Reynolds, & Schmitt, 2010) to better understanding variability in self-definition as assessed by personality processes and as a function of cultural group membership. The results of this study provided a possible explanation for cultural frame switching (Hong, Morris, Chiu & Benet-Martinez, 2000) and cultural accommodation (Bond & Yang, 1982), and demonstrate the feasibility of using social identity perspective to advance understanding of bicultural and cross-cultural psychology. There is evidence that cultural mindsets do affect indicators of identification and that bicultural integration and identification processes are related. These results highlight that further integration of cross-cultural and social identity theory and research is worthwhile and that social identification processes may help explain when culture is likely to impact on individual self-definition and functioning. It is not only being exposed to, or a member of, a cultural group that matters but also the internalisation of the cultural norms, values and symbols that may impact on the individual.

We found personality shift on the dimension of Extraversion in Study 1 and Openness in Study 2. Although we expected to find effect of cultural mindset priming on Extraversion as this was a personality dimension that the Chinese and Australians consistently differ, that was not the case in Study 2. Instead we discovered personality shift on Openness. Also, the effect size of cultural mindset priming on Openness was relatively small, whereas the effect size of language on Extraversion was almost double the size. The effect size of cultural mindset priming in other studies also was not
observed to be very large either (for example, $\eta^2 = .12$ in Hong et al., 2003 study 1). It could be that cultural mindset as a priming method, has relatively small impact especially on personality.

What is the most significant in our finding is the effect of identification. The result from both studies supported our hypothesis that identification was the underlying mechanism for cultural accommodation and cultural frame switching. Both language and cultural mindset made salient corresponding identity, which predicted personality shift. In both studies, Chinese and Australian identification was significant in predicting personality shift, even when the shift itself was not significant. In study 2, the Australian identification mediates the effect of Australian cultural priming on Openness, which further support our hypothesis that identification is the key in cultural frame switching.

Limitations and future directions

Both studies were restricted by sample size although this was addressed somewhat in Study 2. With a bigger sample size, it is possible that we may be able to find more significant results on more personality dimensions, especially on the effect of language priming.

Another limitation was the possible ceiling effect. In both studies, participants reported relatively high levels of Australian and Chinese identification and this was evident before the experimental manipulation. It is also possible that the recruitment methods encouraged those that already identified to some extent with being Australian and Chinese. Those who identify weakly with being Chinese or being Australian may
have been less likely to participate. A bigger sample size might have provided more variability including lower identifiers with these cultural groups.

It is worth pointing out that in some bicultural studies (e.g., Zou et al., 2008), a cover story was used to prevent participants from knowing the relationship between the priming and the measure. In those studies, participants only completed one experimental condition, and they were told that the manipulation and the dependent variable measure were actually unrelated tasks. In the present study we did not have this design, and participants completed both experimental conditions. Future study should use more discrete design.

One problem unique to this population of interest is that Australia is a national group but those that recognise Chinese cultural symbols are not necessarily China nationals. The participants were from a range of different national groups which means that the Chinese cultural images may not have had the same resonance if one was not a citizen of China. The images chose to represent Chinese culture included the Great Wall, the Terracotta warriors and panda which are all objects that can only be found in the mainland China. Ethnic Chinese from other countries such as Malaysia or Singapore may not relate to these images as well as mainland Chinese do.

Our analysis on bicultural identity integration and its association with identification revealed that people who experience high cultural conflict tend to have lower identification with both their heritage group and acquired group. Could it be possible that people identify higher with both cultural groups after they reconcile this cultural conflict? Or is it that failure to reconcile this conflict leads to decreases in
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Identification? Future longitudinal research should address this question and investigate the formation process of dual cultural identities.

Overall, the results of the two experiments largely support our hypothesis and provided evidence on the role of identification on self-definition in the process of cultural frame switching primed by language and cultural icons. The idea in cultural frame switching that a cultural mindset activated by environmental factors and guides cognition and behaviour is actually similar to the construct of identity salience in the social identity perspective. Salience refers to the particular social or cultural knowledge coming to the fore in a particular situation with the stereotype of the group affecting people’s self-definition and behaviour. Both identification and salience are crucial in understanding how the group shapes who we are and help explain variability in self-concepts across contexts. In the next empirical chapter, we explore the role of identity salience in personality. What is more, we measured personality in both self-report and behaviour rating, in order to provide a more comprehensive understanding of personality variability.
Chapter 5: Social identity salience in personality variability and behaviour change

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Context Statement

This chapter is written as a submittable journal article as the requirement of the PhD program. As a result, there may be materials in this chapter that have been described in previous chapters, such as personality theories and measures, empirical literature regarding cultural accommodation effect, and the social identity perspective.
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Abstract

Personality theorists have been arguing that self-report measures alone are insufficient for valid and comprehensive information, that other sources of personality measurement such as peer rating and behaviour observation should also be included (e.g., Cattell, 1946). Studies on behaviour judgements suggest that behavioural ratings of personality are valid and provide additional information to self-report personality. Results also suggest that behavioural ratings of personality vary across context and is context dependent. The social identity perspective propose that this variation of personality could be the result of salient role or social identity in different contexts. In the current study a social identity salience manipulation was adopted and personality was measured by both self-report and behavioural ratings. Thirty-two residents or citizens of Australia with Chinese heritage were interviewed and the interaction was videotaped. The interview was designed to make salient either participants Chinese identity or Australian identity. The behaviour of the participants was coded by two independent assessors. Participants exhibit shifts of personality in both self-report and behavioural ratings. Interestingly participants also reported that they felt their own personality and behaviour varied across situations. This study supported our hypothesis that salient identity can impact on personality responses such that people’s self-definition and behaviour varies depending on which cultural self is salient in a given situation.
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Introduction

Since the development of personality assessment by Cattell (1946), it has been widely used in many research areas from validation, cross-cultural comparison to personality variability. So far, this thesis has focused mainly on self-reported personality both in the literature reviewed and in the experiments reported in Chapter 4. Although self-rated personality measures are most widely used in research and clinical settings, there are advocates for developing other ways of measuring personality. In this empirical chapter, we turn to observer ratings as another way to assess personality variability as a function of social identity processes. We will review the use of alternative methods of measuring personality, especially in cross-cultural or cross-context studies, before discussing the present empirical study in detail.

For self-rated personality measures, the response depends on factors such as self-perception and self-knowledge, personal dynamics, and response styles. These personality instruments usually use adjectives or behaviour/temperament statements, and the participant is required to indicate how accurately these statements or adjectives describe themselves. It has been criticized to have high face validity and as being easy to fake the responses (Ortner & Schmitt, 2014).

There are other personality measures that use projective methods such as the Rorschach inkblot test (Rorschach, 1942) and the Thematic Apperception Test (Murray, 1943). These require very little guidance and have few constraints on participants. The responses that participants provide need the administrator to code and interpret the responses, whereas for personality inventories, the administrator of the test can interpret
the results using a pre-existing key and does not need to make judgments of the responses. Despite Cattell (1958) criticizing self-rated personality measures for being subject to the influence of poor self-knowledge, motivations to make a good impression or dishonesty on self-appraisal inventories, he also emphasize the importance of scoring objectivity in personality tests. Personality researchers need to find a balance between ease of rating and scoring objectivity.

In order to address this problem, Cattell proposed that a complete investigation of personality should contain heterogeneous data sources including self-report, observer report and objective performance data (Cattell, 1946). Indeed many personality researchers when establishing the validity of a personality scale use alternatives to self-report measures, including behavioural observation and peer-rating (e.g., Kolar, Funder & Colvin, 1996; McCrae, 1982). These alternatives offer an external perspective and the information used to make the responses are behaviours aggregated across contexts. It provides useful additional information, is not subject to faking and self-deception, and provides a way to calculate reliability coefficients when there are multiple ratings on one target.

Among the popular alternative measures of personality, the behavioural measure is less widely used. In practice behavioural measures are usually used in combination with self-report measures to validate or invalidate the result of self-report findings (e.g., Reynolds, Ortengren, Richards & de Wit, 2006). For example in one study, participants completed self-rated personality and impulsiveness measures in different experimental conditions (Elliot, Lawty-Jones & Jackson, 1996). Two objective behaviour indicators
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of impulsiveness were included as well. The first behavioural indicator was the time
taken to complete these self-rated inventories; another was to trace a circle as slowly as
possible. The assumption behind these behavioural indicators is that impulsive
individuals (high extravert and neurotic) have a less reflective cognitive style and tend
to respond quickly and are less able to inhibit their reaction to goal-directed tasks.

Participants were randomly assigned to one of the three conditions: to answer job
recruitment for stockbroker, for the position of librarian, or in the control condition they
just complete the questionnaires as honestly as possible. As was expected the
personality profiles differed depending on which conditions participants were in. When
responding to the job recruitment for the stockbroker position, participants self-rated as
being highly extroverted, impulsive, and venturesome with very few empathic
responses, a pattern in line with the stereotype of stockbrokers. In the librarian
condition, self-ratings were introvert and highly empathic, with few psychotic,
impulsive and venturesome tendencies, again in line with the stereotypic profile of a
librarian. Such results suggest that people are capable of modifying their answer on self-
rated personality inventories. Furthermore the lie scale included in the self-rated
personality questionnaires was unable to detect this faking. In contrast and in support of
moving beyond only self-report personality measures, responses to the objective tests
were unaffected by the manipulation and were relatively consistent across conditions.

The results for the objective tests correlated highly with each other and with the
impulsiveness dimension assessed under the control condition only, suggesting that
these behavioural measures have good validity, and can resist faking.
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The above example demonstrated the advantages of behavioural measures, but it also revealed its problem. A specific behavioural measure usually only assesses one particular personality construct, for example impulsiveness or fairness. A broader construct might be hard to measure by a single overt behaviour, for instance Openness, in which case researchers may prefer self-report questionnaires. However, research on behaviour rating of personality and characteristics suggest that behavioural ratings are valid.

Most personality theories assume that the same traits can be assessed in both self-reports and other ratings. Since personality is a system of inner characteristics that are reflected in thoughts, feelings and behaviour, a person’s self-perception of his or her own personality should be consistent with how other people perceive his or her personality. It is believed that expressive behaviour, including how people move, talk and gesture, is quite consistent within an individual across situations and is an important indicator of personality (Allport, 1937). Indeed people can predict interpersonal outcomes such as warmth, empathy, deception or voting intentions quite accurately using small segments of behaviour observations of someone they never met before (Ambady & Rosenthal, 1992). Ratings from a friend are also much more accurate than ratings from a stranger after five minutes of interaction, though self-stranger agreement was better than chance (Funder & Colvin, 1988). These results suggest that, ratings from peers, spouse or parents on the target person’s behaviour can be used as a reliable source of personality.
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One of these studies asked supervisors, co-workers and customers to rate the personality of a sales representative, as well as the self-report personality from the sales representative themselves (Mount, Barrick & Strauss, 1994). The results showed that observer ratings had good validity, and observer ratings of Conscientiousness and Extraversion – two dimensions that are related to job performance of sales representatives, predicted job performance better than self-report scores. In job relevant dimensions, observer ratings accounted for more variability than self-ratings. It could be because the observers selected in this study were job-related individuals and they only know the sales representative in job settings, whereas sales representatives themselves are aware of their own personality across many situations. This study demonstrated good validity and predictive power of observer ratings as an alternative rating source to assess personality. More importantly, it pointed to the area of personality malleability across situations, and suggests that personality variability may also be expressed through behaviour.

John and Robins (1993) nominated several factors that may influence the level of inter-judge agreement when evaluating the personality of another person, and some universal patterns found in the literature. In studies it was repeatedly found that Extraversion is the dimension that participants reached highest consensus on in the setting of zero acquaintance, and Conscientiousness and Openness tend to have low agreement, probably because behaviours related to level of Conscientiousness and Openness were hard to observe (e.g., Kenny, Albright, Malloy & Kashy, 1994; Kenny, Horner, Kashy & Chu, 1992). Behaviour observability and trait evaluativity both
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influence inter-judge agreement. More observable behaviours and less evaluative traits usually get higher levels of agreement. Finally, self-other agreement is always lower than agreement within peer-ratings for evaluative traits (John & Robins, 1993). Behaviour observability did not influence self-other rating agreement though. Level of acquaintance positively influences self-other agreement (Paunonen, 1989).

In the domain of other ratings of personality, an interesting topic is judgment consensus between and within non-overlapping groups and the influence of cultural differences in judgment consensus. Non-overlapping groups include friend, family and co-worker groups that a person has in which none of the members overlap across groups. For example, Malloy and colleagues asked 31 target individuals to nominate three family members, three friends and three co-workers to rate the personality of the target on the Big Five factors (Malloy, Albright, Kenny, Agatstein & Winquist, 1997). Results showed that within each rater group, the agreement in judgments was very high. But across rater groups, the agreement was lower. This result means that either the interpersonal trait perceptions were context dependent, or trait expression was context dependent. Combined with the results of the study involving sales representative (Mount et al., 1994), trait expression may likely be context dependent.

While behavioural ratings by close friends, family members and co-workers was established as a valid and useful alternative for self-report measure of personality, when behaviour was rated by strangers, the self-other agreement tends to be low. However, in cross-context and cross-cultural comparison, behavioural ratings of personality by strangers was adopted as the research focus was not on accurately document
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personality, but to assess behaviour change across contexts. In one study, Chen and Bond (2010) looked at the influence of language on personality change using both self-report and a behavioural rating. They asked Hong Kong bilingual participants to conduct interviews with both Caucasians and Hong Kong Chinese interviewers in both English and Cantonese, in order to explore the effect of language on personality indicated by behaviour. Participants went through all four conditions, that is, interviewed by a Caucasian interviewer in English, with a Caucasian interviewer in Cantonese, with a Chinese interviewer in English, and with a Chinese interviewer in Cantonese. Each interview took about ten minutes. In the interview participants talked about general information about themselves, their hobbies, social activities, their favourite sports, movies, songs or paintings. After the interview, participants completed a survey about their self-perceived differences in personality across English and Chinese language use. The four conditions were recorded separately so each participant had four video files. These files were later reviewed by two bilingual observers and rated on Sino-American Person Perception Scale (SAPPS, Yik & Bond, 1993) to access perceived personality. Participants demonstrated significantly higher levels of Extraversion, Openness and Assertiveness when speaking with Caucasian interviewers than speaking with Chinese interviewers, regardless of the language they used in the interview. Participants also demonstrated higher levels of these traits when speaking with Chinese interviewers in English than when speaking in Chinese, which suggests language effects in relation to personality. This research revealed limited language effects on personality shift, but a strong effect of cultural accommodation. This research
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further revealed that personality shifts not only because of language, but because of the culture that is activated by social interaction.

Another study (Chen, Benet-Martinez & Ng, 2014) about dialectical thinking and personality variability by language replicated the procedure with 68 female Chinese English bilingual students. A few weeks before the interview the participants completed the demographic information and the dialectical self scale in Chinese. They then went through the four interviews and filled in post-interview questions about their perception about any change when they switch between languages on their feeling, thinking, behaviour and personality. When conducting an interview with either Caucasian or Chinese interviewers, their behaviours shifted in the direction of the ethnicity of the interviewer, rather than the language in which the interview was conducted. The results suggest that language does have limited effects on personality, but it is most likely linked to social interaction and the identities that emerge rather than language itself.

Both these two studies argued that the priming (language switch) had small effects on personality and behaviour change after controlling for cultural background, social roles and language fluency. Chen and Bond concluded that language may not directly influence personality; the mechanism of such personality shift was due to the expectations and goals of making culturally congruent responses. This means that the interview process may activate relevant cultural mindsets or cultural self-identity which leads to the observed change on personality, rather than language or interviewer ethnicity directly. In the previous chapter, we conducted two experiments to explore the role of identification in cultural accommodation and cultural frame switching, and the
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results suggested that personality varied across context and identification was associated with this variability.

Both the results of from the non-overlapping groups of raters (Mount et al., 1994) and this study of language on personality shift by Chen and Bond (2010) suggest that personality is context dependent, which provided support for the Personality and Role Identity Structural Model (PRISM) proposed by Wood and Roberts (2006). This model proposes that role behaviours and experiences aggregate into a role identity. A person would have multiple role identities with each role identity having a distinct personality pattern. These role identities then aggregate into the general person identity with its association with a general personality pattern. As people take on new roles or switch between roles personality also shifts. The sales representative in the behavioural rating study (Mount et al., 1994) demonstrated behaviour related to Extraversion and Conscientiousness, a personality pattern that came from the aggregation of these sales related behaviours. Behaviours in a romantic relationship may relate more to Agreeableness and Openness, resulting in a different personality patterns under romantic role identity. When someone switches between their professional identity and romantic identity, a shift in personality may be observed through their behaviours.

Moreover, the approach of dynamic interactionism in social psychology argues that it is the meaning a perceiver gives the situation that is crucial for understanding behaviour, hence people can behave differently and demonstrate different personality patterns across situations based on their understanding of the situation (Reynolds et al., 2010). Research also suggest that attitudes and self-view are subject to normative
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influence. That is, our attitudes and self-view is shaped by the norm of our important social group (Guimond, 1999). The more the group is important to us, the bigger its influence is on our attitudes, behaviour and self-view. The same argument is also made by Mischel and Shoda (1995) in their Cognitive-Affective system theory of personality. This theory of personality proposed that appropriate behaviour under certain situations is determined by how the person perceives and emotionally encodes the situation. In the social identity perspective, specifically self-categorization theory (Turner et al., 1987), the self-definition of a person is determined by the salient context. How an individual interpret a particular context depends on perceiver readiness, and the fit between the context and a personal or social category. Perceiver readiness pointed to the tendency for an individual to categorize contexts in a certain way (Oakes, Haslam & Turner, 1994). Some categories may be more accessible than others as a function of the individuals’ motives and values. The fit between the context and the social category determines by the features of the stimulus in the context, and the defining features of the category (Oakes, 1987). This interaction between context and the self is dynamic, determined by the context and how the individual perceives the context. If the individual have a tendency to interpret the context as relevant to a social category and the context fit the characteristics of this category, this category will become salient.

When a social identity or group membership was made salient, people go through the process of depersonalization and define oneself as a member of this group, rather than as a unique human being. As the result of this process, this person shift his or her self-concept and self-stereotyping as someone who possess the defining attribute
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of the group. Not only do people shift from identifying as a unique human being to member of a group, they also shift their attitudes, beliefs and behaviours to represent their group. The more they identify with being a member of the group, the more they internalize the values, attitudes and behaviours that define the group, and the more they embody these values, attitudes and behaviours when the identity was made salient.

The empirical evidence on the effect of identity salience on self-definition and behaviour is relatively scarce. In one of these empirical studies, Australian participants received an identity salience manipulation where either their personal or Australian identity was made salient by answering a series of open-ended question (Haslam, Oakes, Reynolds & Turner, 1999). These questions made participants think about their personal characteristics or their commonalities with other Australians. After the identity salience manipulation, participants then assigned trait words to Australian people, and reported the importance of being Australian. Results indicated that participants who received the social identity salience manipulation reported being Australian was more important to them, reached higher consensus in choosing Australian stereotypic words, and assigning more positive stereotypic words to Australians. In contrast, people who received the personal identity salience manipulation reported their nationality as being less important, assigned more negative trait words to being Australian, and were less uniform in choosing the stereotype words. This study indicates that the identity salience manipulation can affect the identification of the group, the content of the group meaning, and stereotype consensus and favourableness.
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In another study involves bicultural Dutch Chinese individuals, personal identity was made salient by asking Dutch Chinese participants to compare themselves with other Chinese people, and social identity was made salient by asking participants to compare themselves as Chinese with Dutch (Verkuyten & De Wolf, 2002). Participants them rated themselves on ingroup stereotypical trait words either on the dimension of “me vs. not me” in the personal identity salient condition, or “us vs. them” in the social identity salient condition. In both conditions participants also reported heritage culture maintenance and mainstream cultural contacts. Participants also reported ethnic self-categorization, ethnic self-esteem and collective self-esteem, and feelings towards Chinese/Dutch people. Factor analysis revealed that participants in different identity salient conditions showed different understanding of the trait words. The comparative context impacted on the meaning of the traits. Participants in the social identity salient condition also rated themselves to be more stereotypical Chinese than those in the personal identity salient condition.

These two studies demonstrate the impact of identity salience on self-definition. However, they did not test the impact on personality and behaviour. Past studies in the area of behavioural ratings suggest that behavioural ratings of personality are subject to the influence of context. The study of Chen and Bond (2010) also indicated that people exhibit changes in their behaviour when speaking different languages or talking with people from different cultural and ethnic backgrounds, a phenomenon known as cultural frame switching. In the previous chapter, the effect of identification on self-definition measured by self-report personality was established in the process of cultural frame
switching. Since salience and identification are both important constructs in the social identity perspective used to explain variability of the self-definition across context, it is possible to assume that this shift of personality and behaviour may also happen when people switch between different salient social identities.

In the present study, we explore the effect of salient identity by manipulating the Australian and Chinese identity of Australian Chinese bicultural individuals. Similar to study 1 and 2, within-subject design was employed in order to observe personality shift within the individual when switching between their activated identity salience. Although the procedure and measure was similar to Chen and Bond (2010), in this study we used identity salience rather than language as our independent variable. We hypothesized that, when switching between the two salient social identities, people will self-report some level of personality change (Hypothesis 1), and demonstrate change in their behaviour when conversing with others (Hypothesis 2). They may also report own perception of change in their behaviour and attitudes when they switching between the two social identities (Hypothesis 3).

Method

Design and Participants.

We used a 2 (identity salient manipulation: Australian vs. Chinese) x 2(order: Australian first vs. Chinese first) within-subject design. All participants completed both conditions and as they all identify themselves as Australian Chinese, they can be seen as bicultural individuals. The sample consisted of 11 males and 21 females who identified themselves as Australian citizens or permanent residents with Chinese ethnicity. All
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participants had both parents of Chinese ethnicity. Twenty-three of them were university students with the rest employees in companies or in the government.

Participants were recruited using Facebook advertisements and flyers. Confidentiality of responses was assured and they were offered money to compensate them for their time, effort and travel costs associated with being part of the research.

Observers. Two observers were employed to conduct behavioural coding following the same procedure as Chen and Bond (2010). Both were young female graduate students but with different ethnicities. One was from a Caucasian Australian ethnic group and the other had Chinese ethnicity.

Procedure.

Participants came to the lab, and first completed a card sorting task that assesses their identity inclusiveness. After the task, participants were interviewed to talk about themselves either as a Chinese, or as an Australian. There were five questions in each interview conditions and on average each interview lasted 8 to 10 minutes. This interview was designed to make salient either their Chinese social identity, or their Australian social identity. The order of this interview was counter-balanced.

Immediately after the interview, they completed a measure of their Australian (or Chinese) identification, and a self-rated personality scale on a computer. They then completed a filler task, before completing the second part of the interview where the alternative social identity was made salient and the measure of self-rated personality completed. Finally participants completed post-interview questions, and were thanked and debriefed.
In line with Chen and Bond (2010), during the interview, the interviewer sat on the left of the video recorder and was never caught on tape. Participants sat about 1.5 meters from the video recorder and directly faced the camera. Participants were interviewed twice and had two separate video files. These two video files were later loaded to a computer and handed to two observers to code. Observers were instructed to review the video files separately and complete a rating sheet independently for each participant under each condition. To avoid possible interference effects, observers were instructed to go through every participant in one condition before they rated them in the other condition. Unlike Chen and Bond (2010) though, participants always completed the interview in English, and all materials in this study are in English.

Measures.

Social Identity Inclusiveness. The Triple Crossed-Categorization Task (TCCT, van Dommelen, Schmid, Hewstone, Gonsalkorale & Brewer, 2015) was adopted to measure how participants self-categorize. It involves sorting identity cards of fictitious targets belonging to different social categories into “us” and “not us”. By sorting these identity cards participants indicated how they constructed their ingroup. Participants were presented with 32 name cards, on which membership on three categories, nationality, ethnicity and gender were outlined (see Appendix 1B for examples). Each name card included a head-and-shoulder silhouette profile of a fictitious target, a name, and a national flag to indicate nationality. By varying the name and the national flag, the gender, ethnicity and the nationality of the targets was varied. There are four categories of name and nationality: a Chinese name with Chinese nationality (to indicate typical
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Chinese), an English name with Australian nationality (to indicate typical Australian), an English first name, Chinese last name with Australian nationality (to indicate Australian national with Chinese heritage), and an Indian name with India nationality (to indicate a typical Indian). There are eight name cards for each of the categories, four male and four female. Participants were instructed to sort the cards based on whether he or she believed the person on the name card belonged to the same group as he or she does, or not, and put them in two boxed labelled with “US” and “NOT US”. The cards were displayed to the participants in random order. The number of cards participants categorized as “US” indicated their level of identity inclusiveness. In the present study, we used this measure as a categorical indicator of their self-classification as narrowly self-define as only Australian Chinese, or more inclusive to their ethnicity (include native Chinese as well), or more incline to their nationality (include native Australians). All participants understood the task and made the categorization without any questions.

Self-rated identification. Cameron (2004) three factor social identity measurement was adapted to measure levels of Chinese and Australian identification. This scale used 4 items in each of the three subscales: ingroup ties, centrality, and ingroup affect, measured in a 7-point Likert scale.

Self-rated personality. The HEXACO personality scale (HEXACO-PI-R, Lee & Ashton, 2004) was used to assess the self-rated personality. This personality scale contains 60 items measured on a 5-point Likert scale, ten items for each for the six personality dimensions including Honesty-Humility. The dimension of Emotionality is
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Similar to Neuroticism in the Five Factor Model, but it contains aspects of dependence and sentimentality.

**Interview.** Two sets of questions were designed in parallel forms for the Australian identity salient and Chinese identity salient conditions, so that participants answered comparable questions in the two conditions. After a brief introduction to the procedure, the interviewer started the video recording and asked participants the following questions:

1. Can you describe the Australian [Chinese] culture in terms of its beliefs and habits?

2. When did you feel the strongest that you are a member of the Australian [Chinese] community? Can you describe that scenario?

3. What are the main characteristics that describe you as an Australian [as a Chinese]?

4. How do you feel being an Australian [being a Chinese]? Do you enjoy it or do you not like it? Why?

5. How important is being Australian [Chinese] to you? What did you benefit from it?

On average participants took about 10 minutes to answer these questions in each condition.

**Behavioural ratings.** In line with Chen and Bond (2010), observers independently completed the Sino-American Person Perception Scale (SAPPS, Yik & Bond, 1993) rating sheet after they reviewed one video file of a participant in one of the
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interview conditions. The SAPPS assesses traits on a 7-point bipolar scale based on the FFM as well as an Indigenous Chinese adjective checklists. The checklist consists of 32 bipolar adjectives on eight dimensions: Emotional Stability, Sociability, Assertiveness, Openness, Application, Intellect, Helpfulness and Restraint. These dimensions were argued to capture some key characteristics related to the Chinese culture, but can also be collapsed so as to fit the Five Factor domain. The Big Five domain Extraversion is represented by SAPPS Assertiveness, Agreeableness by Sociability and Helpfulness, Conscientiousness by Application and Restraint, Neuroticism by the negative scaling of Emotional Stability, and Openness by Openness and Intellect (Yik et al., 1998). Low scores on SAPPS indicate higher level of these traits.

*Post-interview questions.* Again in line with Chen and Bond (2010; Study 2), after the interview and the self-rated personality questions, participants were asked to rate on a 6-point scale the extent to which they feel, think and behave differently when they think about themselves 1) as Australian compared to when they think about themselves as Chinese, and 2) when they talk in English compared to when they talk in Chinese. They also were asked whether they perceived personality change, or other people perceived them as having personality change when they think about themselves as an Australian compared to when they think about themselves as Chinese. The scale ranged from 1 (*no difference*), 2 (*slightly different*), 4 (*moderately different*) to 6 (*very different*).
Results

*Social identity Inclusiveness.* Nine of the 32 participants define their ingroup as ethnic Chinese with either Chinese or Australian nationality. Nine participants define their ingroup as Australian nationals with either Caucasian or Chinese ethnicity. Six participants define their ingroup to include native Chinese, Australian Chinese and native Australians. Three participants defined their ingroup as only Australian Chinese, and three participants defined their ingroup as everyone, including Indians. One participant defined his ingroup as Asian (ethnic Chinese with either Chinese or Australian nationality, and Indians). The other participant defined their ingroup as Australian with either Caucasian or Chinese ethnicity, plus native Indians. All participants identified with being Australian Chinese, but some were more inclined to identify with their ethnicity, and others valued their nationality more.

*Identification level.* The Cronbach’s reliability for the Australian and Chinese identification scale were .87 and .90, respectively. We evaluated participants’ identification after priming as a manipulation check. On a 7-point scale, the mean of Australian identification was 5.07 (SD = .88), and Chinese identification was 4.86 (SD = .98), both were significantly higher than the mid-point of the scale ($t$ (30) = 6.754, $p < .001$ for Australian identification, and $t$ (29) = 4.810, $p < .001$ for Chinese identification), indicating high Australian and Chinese identification. The two identifications were not correlated with each other.
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**Self-report personality.**

Table 5.1 presents means and standard deviations of participants’ self-report personality when completing the measure in the Chinese and Australian social identity conditions.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Chinese manipulation</th>
<th>Australian manipulation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Extraversion</td>
<td>3.39</td>
<td>.45</td>
</tr>
<tr>
<td>Emotionality</td>
<td>3.14</td>
<td>.56</td>
</tr>
<tr>
<td>Honesty</td>
<td>3.61</td>
<td>.59</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.17</td>
<td>.58</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.44</td>
<td>.65</td>
</tr>
<tr>
<td>Openness</td>
<td>3.64</td>
<td>.65</td>
</tr>
</tbody>
</table>

Paired t-test revealed that there was a significant difference of self-reported Emotionality level between the Chinese salient and Australian salient conditions, $t$ (15) = -3.204, $p = .006$. Participants self-reported to be more emotional after their Australian identity was made salient. There was also a marginally significant difference for Conscientiousness, $t$ (15) = 1.849, $p = .084$. Participants self-reported to be more conscientious in the Chinese social identity salience condition.

**Observer ratings.**

Table 5.2. Inter-observer agreement for both Australian and Chinese conditions

<table>
<thead>
<tr>
<th>Factor</th>
<th>Australian condition</th>
<th>Chinese condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Stability</td>
<td>.299†</td>
<td>.004</td>
</tr>
<tr>
<td>Sociability</td>
<td>.559**</td>
<td>.696**</td>
</tr>
</tbody>
</table>

169
The observer ratings on items were averaged to form a score on each of the eight domains and then the scores from the two independent observers were correlated. As can be seen from Table 5.2, observers had high consensus in their ratings on the dimensions of Sociability, Assertiveness and Intellect. Results indicate that observers had higher consensus for the dimensions of Intellect and Application in the Chinese social identity condition compared to the Australian condition. In term of the size of the correlations, except for Helpfulness and Emotional stability in the Chinese social identity condition, the inter-observer agreements were above .20 which is in line with previous studies that use similar observer trait ratings (John & Robins, 1993). Of particular interest are comparisons with Chen and Bond (2010) where the inter-observer correlations were lower than those reported in Table 5.2 other than for the Helpfulness and Emotional stability factors.

Mean observer ratings of participant behaviour are summarised in Table 5.3. Due to the low inter-observer agreement for Helpfulness, the mean score of helpfulness was not computed. There is evidence of variability in ratings with scores going in opposite directions for Openness. Also, the observer with Chinese ethnicity has higher...
variance in ratings and consistently has higher ratings in the Chinese condition compared to the Australian condition.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Chinese manipulation</th>
<th>Australian manipulation</th>
<th>t (31)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Stability</td>
<td>2.89 .66</td>
<td>2.96 .78</td>
<td>-.933</td>
<td>358</td>
</tr>
<tr>
<td>Sociability</td>
<td>3.38 1.20</td>
<td>3.54 1.05</td>
<td>-1.587</td>
<td>.123</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>3.39 1.10</td>
<td>3.45 1.07</td>
<td>-.550</td>
<td>.586</td>
</tr>
<tr>
<td>Openness</td>
<td>3.93 .87</td>
<td>3.86 .93</td>
<td>-.586</td>
<td>.562</td>
</tr>
<tr>
<td>Intellect</td>
<td>2.82 .78</td>
<td>2.99 .76</td>
<td>-2.298</td>
<td>.028</td>
</tr>
<tr>
<td>Application</td>
<td>3.45 .93</td>
<td>3.59 .73</td>
<td>-1.124</td>
<td>.269</td>
</tr>
<tr>
<td>Restraint</td>
<td>3.50 .82</td>
<td>3.56 .77</td>
<td>-.770</td>
<td>.447</td>
</tr>
</tbody>
</table>

Of the behaviour dimensions, a significant difference across the two identity conditions emerged for Intellect, $t (31) = -2.298, p = .028$, partial eta squared = .146. Participants were rated as being less intelligent and perceptive when their Australian social identity was made salient compared to their Chinese identity. There was a tendency for participants to be assessed as more sociable and diligent when their Chinese identity was made salient, but the difference was not significant. Given the variability in observer ratings, analysis was also conducted for each of the observers separately. These results were presented in Table 5.4 below.

As can be seen, the Australian observer rated participants to be slightly more sociable and more helpful but less open when their Chinese identity was made salient. The Chinese observer rated participants to be more emotionally stable and open when
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their Chinese identity was made salient compared to when their Australian identity was made salient.

Table 5.4. Means of the observer rating from the two observers

<table>
<thead>
<tr>
<th>Factor</th>
<th>Australian observer</th>
<th>Chinese observer</th>
<th>t(31)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chinese manipulation</td>
<td>Australian manipulation</td>
<td></td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>2.60 (1.10)</td>
<td>2.44 (1.14)</td>
<td>1.05</td>
</tr>
<tr>
<td>Sociability</td>
<td>2.90(1.27)</td>
<td>3.16 (1.25)</td>
<td>-1.913†</td>
</tr>
<tr>
<td>Assertive</td>
<td>3.23 (1.19)</td>
<td>3.23 (1.27)</td>
<td>-.059</td>
</tr>
<tr>
<td>Openness</td>
<td>4.18 (1.00)</td>
<td>3.74 (1.07)</td>
<td>2.587*</td>
</tr>
<tr>
<td>Intellect</td>
<td>2.10 (.60)</td>
<td>2.26 (.78)</td>
<td>-1.43</td>
</tr>
<tr>
<td>Application</td>
<td>3.36 (.94)</td>
<td>3.53 (.83)</td>
<td>-1.006</td>
</tr>
<tr>
<td>Helpfulness</td>
<td>3.48 (.62)</td>
<td>3.85 (.53)</td>
<td>-3.204*</td>
</tr>
<tr>
<td>Restraint</td>
<td>3.23 (.78)</td>
<td>3.29 (.92)</td>
<td>-.587</td>
</tr>
</tbody>
</table>

*Note:* *: p < .05. †: p < .01.

Self-report change.

Participants were asked to rate their self-perceived differences with respect to their emotions, thoughts and behaviour when they were interviewed in the Australian identity compared to the Chinese identity salient conditions. They were also asked to indicate their self-perceived change when they talk in English compared to when they talk in Chinese in their daily life. Moreover, they were asked to rate whether they or other people around them perceived their personality to be different when their Australian compared to Chinese identity was more likely to be salient. On a 6-point Likert scale, most people reported that they perceived moderate difference on their feelings ($M = 3.71, SD = 1.30$), thinking ($M = 3.26, SD = 1.21$) and behaviour ($M = 3.48, SD = 1.34$) in the interview when they talked about being Australian and being Chinese. Regarding their perceived difference when they speak English and Chinese in
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their daily life, participants reported perceiving strong differences in feeling ($M = 3.97$, $SD = 1.86$) and a moderate difference in acting ($M = 3.35$, $SD = 1.72$) but not much difference in thinking ($M = 2.74$, $SD = 1.63$). Over 32% of participants reported not thinking any differently when they switch between the two languages. However 29% of participants reported their feelings to be very different when speaking in different languages. Finally, participants perceived their personality to be slightly different when switching between being an Australian and a Chinese ($M = 3.1$, $SD = 1.62$), and they also reported other people perceived their personality to be different when switching between these two identities ($M = 3.29$, $SD = 1.61$).

Discussion

The present study explored personality variability in both self-report personality and behavioural ratings as a function of changes in the context, specifically, when people switch between their salient social identities. Literature on personality suggested that both self-report personality and behaviour indicators of personality are subject to influences in the context, such as language, environmental cues, social roles, life events, and identification (e.g., Chen & Bond, 2010; Specht, Egloff & Schmukle, 2011; see also Chapter 4 of the present thesis). Although empirical evidence also suggests that salient personal and social identity triggers changes in self-evaluation, the impact of salient social identities on personality and behavioural ratings of personality was not clear. In the present study, it is hypothesized that when people switch between their salient social identities, they also exhibit change in self-report personality (Hypothesis 1) and
behaviour (Hypothesis 2). It is also hypothesized that bicultural individuals may be aware of this change of their personality (Hypothesis 3).

The use of within-subject design is a conservative method to test our hypothesis, and the small sample size is not ideal. However, the results in both self-report and behavioural rating of personality with such a conservative design and small sample size are powerful and meaningful. Overall, the result supported the hypothesis that when switching between group memberships, people perceived themselves to be different on trait level personality, and also exhibit change in their behaviour.

After the manipulation participants reported relatively high levels of Australian and Chinese identification correspondingly, suggested that our identity salient manipulation was successful. Participants reported slightly higher identification with being Australian in the Australian identity salient condition. Given that most of the participants were young adults who either born in Australia or migrated to Australia when very young this is not surprising.

Consistent with our first hypothesis, participants’ self-reported to be slightly more conscientious and less emotional when their Chinese identity was made salient compared to when their Australian identity was made salient. The result of this self-report personality difference was consistent with participants’ answer to the question of how they were as a Chinese or as an Australian. When describing themselves as Chinese, most participants mentioned that they work harder and have the tendency to accomplish things as good as they can, and some mentioned that they suppress their feelings. High Emotionality in HEXACO means people experience fear and anxiety,
need emotional support from others, and have strong empathic concern towards others. High Conscientiousness in HEXACO is the tendency to work hard and be organized, careful and being perfectionistic. The dimension of Conscientiousness is rather similar to that of the Five Factor Model, but Emotionality is more like the combination of Neuroticism and Agreeableness in the Five Factor Model. Participants in the present study reported to be more conscientious, emotionally more stable but to have less sentimental attachment with other people when their Australian identification was made salient. Chinese people are observed to be less expressive, and suppressing feelings is seen as a merit in Chinese culture (Bond, 1986, as cited in Malloy et al 2004), therefore participants may allow themselves to have and demonstrate strong feelings when their Australian identity was made salient. They may also rate themselves as more diligent and higher on perfectionism when their Chinese identity was made salient. The Emotionality dimension in HEXACO has four subscales: Fearful, Anxiety, Dependence and Sentimentality. We believe it may be the Dependence and Sentimentality subscales that demonstrated this difference. However, as the subscales each contain only two or three items, we did not examine this difference on the subscale level.

In both the individual observer rating and the mean rating, behaviour was rated to change across situations, mainly on the dimension of Openness (Openness and Intellect), Extraversion and Conscientiousness. This result showed that along with self-rated personality, behaviour also changes across context as a function of salient identity shift, which is supportive of Hypothesis 2.
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The inter-observer agreement in the present study was bigger than in the study of Chen and Bond (2010). All correlations except for Helpfulness exceeded the average level agreement of .2 of behavioural ratings studies. Helpfulness can be seen as representing the Five Factor domain of Agreeableness, which traditionally had the lowest inter-observer agreement, along with Neuroticism. Extraversion tends to have the highest inter-observer agreement, with Conscientiousness and Openness in the middle (John & Robins, 1993).

Also in line with our third hypothesis, the self-reported perception of change when switching between two identities showed that people are aware of this change within them and they know that other people notice it too, mostly in how they feel and how they act.

Overall, the results of the present study supported the variability of personality and behaviour. Results also supported our hypothesis of the role of salience in personality variability among bicultural individuals. Making salient different social identities can impact on personality responses and behaviour.

Although it would be informative to have a pre-measure of identification before the salient manipulation to indicate initial level of identification with the social groups, such a measure could also prove to be problematic. Measuring identification alone can make identity salient, so measuring both identifications before the manipulation may inhibit the effect of manipulation. Our manipulation questions were carefully designed based on techniques consistent with past practice in Haslam et al (1999) and Verkuyten and De Wolf (2002). However, without a base line measure of identification in the
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Present study, what we can conclude is that the shift between two salient identity leads to change in their self-report and behaviour expression of personality, but we cannot conclusively say that the identities were made salient by our manipulation process. In future designs of similar studies this practical issue must be taken into account.

The personality measures used for self-report and behavioural assessment were different. Although the goal was to follow the methods of Chen and Bond (2010) who used different measures, it would be worthwhile to use a consistent personality measure across the self-report and behavioral assessment phases. To our knowledge HEXACO has not been used for the purposes of behavioural assessment but has a version for observer rating. SAPPS was used in both self-report and behavioural assessment in Chen and Bond (2010)’s original study. It is acknowledged that by using the same measurement tool the results will be more meaningful.

Another practical issue in the methodology of the present study is the ethnicity of the observers assessing behaviour. Despite relatively high inter-observer agreement, the observer with Chinese heritage rated participants’ behaviours consistently higher than the observer with European heritage expect for Openness. This could reflect the cultural difference in rating behaviours, such as the tendency to rate closer to the midpoint of a scale that Asians usually have (Shou, Sellbom, & Han, 2016). However the Chinese observer did rate on a wide range of the scale, as her variance was slightly larger than that of the Australian observer. Future studies should employ observers from the same culture or ethnic background, or use more observers to ensure stable cross-observer consistency.
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Relatively little research has been conducted on the cultural difference of personality trait judgments based on behaviour. Despite studies that suggest high cross-cultural inter-observer agreement of personality traits and behaviour outcomes by static pictures of faces (Rule et al., 2010), there are also studies that demonstrated cultural difference in how to interpret behaviour and link that behaviour to personality traits. For example studies found that smiling was linked to being more intelligent in American culture but not in Japanese culture (Matsumoto & Kudoh, 1993). Research that looks at the cultural differences in rating personality based on behaviour observation is still scarce. Cultural difference in response patterns of questionnaire is also important but often overlooked. Except for the dimension of Sociable and Assertiveness which both represent the Big Five dimension of Extraversion, inter-observer agreement for other dimensions did not reach significance in either one or both of the experimental conditions. Using only two observers, and using observers from different cultural background is a limitation of this study; more observers could provide useful information on the person perception process.

Another aspect of using observers from different ethnic background, especially if their ethnicity becomes salient is ingroup favouritism. Behavioural ratings could be more positive or stereotypical when judging a target from the observers own ethnicity versus other ethnicity. Past studies have demonstrated that observers may rate participants from their ingroup more favourably (Kraiger & Ford, 1985). Training may help reduce discrepancies in interpretation of behavioural cues and evaluative biases (Melby, Hoyt & Bryant, 2003). Therefore we recommend having more observers in
addition to providing training beforehand. More generally, these points relate the social context affecting observer self-categorization and therefore their ratings of targets’ behaviour. The possibility of such variability is consistent with the overall argument of the thesis that context can affect self-perceptions and in this way affect behaviour. These same processes can characterise observers of behaviour as well as the target.

Overall, the present study provided support to the influence of social identity processes on personality as assessed by self-ratings and observer behavioural ratings. The results provide some indications that as a particular social identity become salient and contextually relevant it comes to shape self-rated personality and observed behaviour and people’s own sense of self changes. The finding that people are themselves aware of this shift, and they believe that this shift is observable to others is important. Based on self-categorization theory, shift in salient identity leads to shift in the norm and framework people use to define themselves, and change in self-report personality and behaviour is observed. This depersonalization process may well be unconscious, but the change expressed in how people behave and their self-concept is on the conscious level, and people are aware of this change.

In the previous chapter and this chapter, we explored situations where people switch between their group memberships. In the previous chapter personality change was established as a function of shifts in language use and cultural mindset triggered by cultural cues, and identification was found to be associated with this personality change. In the present chapter, when people switched between their salient social identities personality change was observed through both self-report and behavioural rating of
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personality. However, these studies concern cultural or social group memberships that bilingual and bicultural individuals already obtained. The social identity processes may also be relevant in the development of such membership. In the next chapter, we explore the role of identification in the process of acculturation, a process where immigrants start to develop mainstream cultural and social identity, and to investigate how identification influences the acculturation of personality over time.
Chapter 6: The migration experience, national and ethnic identification and longitudinal personality change

Author: Lin, H., Reynolds, K. J., Lee, E., & Sibley, C.

Context Statement

The present chapter is written as a submittable journal article as part of the requirement of the PhD program. As a result, there may be sections of this chapter that appeared in previous chapters, for example empirical studies on longitudinal personality change over time, and the acculturation of personality (becoming more similar to the typical personality profile of the mainstream culture). The section about the social identity perspective is also similar to the description in previous chapters. The empirical work in this chapter used a secondary dataset from the New Zealand Attitude and Value Study collected in New Zealand by Dr. Sibley and his team. Dr. Chris Sibley is a contributor to this research through data collection and hosting the first author’s visit to the University of Auckland. He also offered statistical advice in relation to the data analysis for this chapter. This dataset is used in the present study to investigate a novel research question concerning longitudinal personality change among immigrants.
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Abstract

Despite being relatively stable, personality is found to shift due to changes in life, such as starting a family or working (Specht, Egloff & Schmukle, 2011). Immigration is another event that can affect personality. Research shows that immigrants have a personality pattern that more closely resemble the acquired nation rather than their heritage nation, and that there is a link between this personality shift and endorsement of the mainstream culture (Güngör, Bornstein, De Leersnyder, Ceulemans & Mesquita, 2013). A limitation of existing work though, is that it is cross-sectional which makes it difficult to fully explain the process of personality change over time or investigate the mechanism behind this change. In the present study, a longitudinal design was used where a representative sample of New Zealanders (N = 2439) reported personality, ethnic identification and patriotism (as a form of mainstream endorsement) over four waves. In line with predictions there was significant personality change, and level of New Zealand patriotism and identification strongly predicted this change. Specifically among Asian New Zealanders, their level of ethnic identification and patriotism predicted different trajectories of personality change. Implications of these findings relative to understanding the impact of self-concept change on personality variability are outlined.

Key words: personality flexibility, social identity, longitudinal study
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Introduction

A basic assumption of the personality construct is that individual characteristics are relatively invariant across situations and time. People should behave similarly and perceive themselves to be consistent even under different circumstances (e.g., Costa & McCrae, 1988). Increasingly research evidence supports a more context-dependent view of personality (e.g., Ardelt, 2000; Fleeson, 2004) where stability or change in a person’s environment has a direct impact on personality. With respect to intelligence, for example, a number of environmental factors play a significant role, including parenting style and occupation, stressful life events and family dynamics (Sameroff, 1983; Sameroff, Seifer, Baldwin & Baldwin, 1993). Increasingly these same contextual or environmental factors are examined with respect to personality characteristics.

An important area of research in relation to personality stability and change concerns the impact of people’s group memberships and their psychological significance for self-definition. In the studies conducted in this thesis the topics have concerned people who already are members of multiple groups (acquired and heritage) and are assumed to have bicultural self-identities. In this current empirical work a longitudinal design is used so that changes across time in identification and group endorsement and self-reported personality characteristics can be assessed. The groups of interest concern ethnicity and nationhood.

Research has explored the relationship between mass changes within a nation across time (e.g., technology, workforce participation and wealth) and the impact on the personality characteristics of its citizens (Roberts, 1997; Twenge, 2001). The impact of
acquiring new group memberships and cultural change also has been investigated through comparing newcomers to a country and the settled population (e.g., McCrae, Yik, Trapnell, Bond & Paulhus, 1998). To date, though, this work is limited by the use of mainly cross-sectional rather than longitudinal methodology. Additionally, a lack of clarity regarding the process or mechanism through which any observed personality changes may occur. The factors that have been shown to be important are participation in the cultural rituals of the acquired country and endorsement of the associated cultural values, but further research is needed. The current study aims to address these limitations and further understanding of the relationship between migrants acquiring a new culture and personality change, specifically, to explore the role of social identity processes in the acculturation of personality among immigrants. Relevant theory and research are outlined before the longitudinal research is outlined in detail.

**Cultural contexts and personality stability and change**

Personality is typically assessed within the Five Factor Model where the personality factors of interest are Conscientiousness, Openness, Extraversion, Agreeableness, and Neuroticism (Costa & McCrae, 1992). Theorists proposed four types of personality stability and change (Robins, Fraley, Roberts & Trzesniewski, 2001), which are normative stability, rank-order stability, structural stability, and ipsative stability (introduced in Chapter 2). Many of the empirical studies about personality stability are about the normative stability and focused on the effect of age and significant life events on the mean-level change of a particular group. Despite the “hard plaster hypothesis” (mentioned in Chapter 2), personality is found to be flexible
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across the life span. A recent study by Specht and colleagues conducted in Germany with over 14,000 participants clearly shows that personality change can occur after the age of 30 and experiencing new roles and life events can lead to greater personality change. Mean-level change across the life span indicated a stable decrease on Extraversion and rapid decrease of Openness, and increase of Agreeableness and Emotional Stability across the life span. There is an increase in Conscientiousness early in life but it decreases after the age of 60. Rank-order stability showed an invert U curve, with age of 40 to 60 being the most stable. Most significantly this variability was linked to life events, such as having kids or retirement. For example, those who did not retire had less decline in Conscientiousness compared to those who did retired. This study not only provided evidence for the variability of personality, but linked this variability to the experiencing of certain life events.

Relatively fewer studies on personality stability focus on the impact of cultural change or other large scale environmental changes (e.g., technology, participation of women in the workforce wealth) on a particular cohort. For example, Roberts and Helson (1997) examined a data set where women between the years of 1958 to 1989 were asked to report their personality and level of endorsement of conventional opinions and interests, and authority and obligations. They found that there was an increase of individualism in the 1960s and 1970s and its decrease in the 1980s. Furthermore, the increase in individualism was associated with increases in Narcissism and self-assertion and a decrease in norm adherence among these women. Along these same lines, Twenge (2001) conducted a meta-analysis on research conducted between
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1931 and 1993 related to female status and role changes and levels of assertiveness and dominance. As predicted, there was found to be a relationship between cultural change indicated by changes in women’s status and personality characteristics.

Another major area of research concerning the impact of culture on personality concerns human migration and acquiring new nationhood. The impact of the cultural environment can be investigated by comparing the personality characteristics of new comers to a country (those who are likely to acquire a new culture) and old timers (native citizens). Acquiring the host country’s culture and norms is called acculturation. Along these lines, Güngör, Bornstein, De Leersnyder, Ceulemans and Mesquita (2013) compared the personality pattern of native Japanese, Japanese Americans and European Americans. The group of Japanese Americans also completed measures of acculturation with respect to US culture, indicated by their language use, friendship with locals, identity, behaviour and attitudes. They found that the personality profile for the group of Japanese Americans was significantly more similar to Japanese compared to the group of European Americans, but significantly less Japanese than the group of native Japanese. This was found to be the case on all personality dimensions except for Openness.

Interesting, rather than length of time in the US, it was involvement in US culture that was important in explaining personality. Involvement in the US culture as indicated by their acculturation level predicted bigger personality differences from the typical native Japanese pattern and more similarity with the US pattern on Neuroticism and Conscientiousness. Age of migration and years spent in US did not predict lower
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levels of alignment with the typical Japanese personality profile. This study indicates that the personality pattern of first generation Japanese Americans was different from the typical Japanese pattern and in a direction more aligned with the typical US pattern, and that this shift was related to cultural involvement and endorsement.

Another study compared recent immigrants (within 10 years), long-time immigrants (over 10 years) and second generation immigrants (born in the host country). McCrae and colleagues (McCrae et al., 1998) focused on Canadian Chinese immigrants and discovered that exposure to Canadian culture can increase their level of openness, cheerfulness, and pro-social behaviour. More specifically, compared to Canadian born Chinese, recent Chinese immigrants (within 10 years) scored lower in Extraversion, Competence (subfactor of Conscientiousness) and higher in Neuroticism. The responses of second generation Chinese were similar to European Canadians, and Chinese immigrants who entered Canada before 1986 scored at an intermediate level between these two other groups. However, compared to European-Canadians, Canadian-born Chinese scored slightly lower on overall Extraversion and its subfactors, the Openness subfactor of Openness to Feelings and Values, and higher on Agreeableness, Altruism and Modesty (both subfactors of Agreeableness), and Anxiety, Self-Consciousness and Vulnerability (all three are subfactors of Neuroticism). This difference may be due to ethnicity which is reinforced in particular ways through family life.

This trajectory of research indicates that moving to a new cultural group can impact on a person’s personality characteristics. What remain less clear are the
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psychological factors that are important in explaining the process or mechanism through which this change occurs. To date most research has considered length of time in the new country and endorsement of the cultural values that characterise the acquired nation. The Japanese study used a measure of cultural involvement, which included an item of participants’ self-identity as Japanese, Japanese American, or American. Although the response to this item was analysed with other items to indicate involvement and endorsement, it may open up new ways of exploring this question (Güngör et al., 2013). Such research suggests that subjective identity, participation in the acquired culture and cultural investment may be important. Involvement in the host culture and endorsement of the host cultural values are important indicators of acculturation. Identity, on the other hand, marks the psychological significance this group has for the individual, and is an important part of this acculturation process.

**Ethnic and national social identity and personality stability and change**

A related area of research that may shed light on how and when personality shifts occur concerns social identity theory (Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher & Wetherell, 1987), referred to as the social identity perspective. Social identity refers to the cognitive and emotional significance of being a member of a particular group (Tajfel, 1972). Social identification, or the degree to which a category is valued and meaningful to an individual, is crucial to the internalization of the group norm. Additionally, identification enables people to maintain and regulate their relationship with their social groups. As people come to define themselves as a member of a particular group they
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will internalise the norms, values and beliefs that are appropriate or define that group. A self-stereotyping process occurs where the defining features of the group come to define one’s self-concept (referred to as depersonalization, Turner, 1987).

These ideas have been applied to the immigration context with increasing interest in how people integrate into their self-concept, groups which appear to have more or less conflicting values and beliefs. Building on the work of Berry (1999), Dovidio and colleagues (Dovidio, Gaertner, Niemann & Snider, 2001) highlight that the combination of high or low superordinate identity (with the majority or acquired national group) and high or low sub-group identity (with the minority or ethnic group) can describe different acculturation orientations. Those that have high superordinate (national) and high sub-group (ethnic) have an integration approach while those with high sub-group and low superordinate identity have a separation approach.

Exposure to the host culture over a long period of time can help them gradually develop their identification to the host culture, but not necessarily reduce their heritage identification (Cheung, Chudek & Heine, 2011). Integration where migrants obtain mainstream identity while maintaining the heritage one, is found to be most adaptive for both psychological and sociocultural adjustment (Ward & Chang 1997; Ward, Okura, Kennedy & Kojima 1998; Ward & Rana-Deuba, 1999). In one study, sojourners in New Zealand reported acculturation towards the host nation (New Zealand) and their heritage nation indicated by their life style, behaviour, world view, and their attitudes towards ingroups and outgroups. They also reported sociological adaptation (social difficulties) and psychological adjustment (depression; Ward & Kennedy, 1994). Results showed
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that those who reported an integration strategy (endorse both cultural values) also had better psychological adjustment and less social difficulties relative to people who adopted other acculturation strategies. Those with an assimilation strategy (endorse only the host nation), despite also reporting the highest level of depression, also reported less social difficulties which indicated better sociological adaptation.

Research by Verkuyten and colleagues (Verkuyten & Yildiz, 2007) shows that an integration approach is most likely to emerge when members of different groups (related to migration or not) such as being Muslim and Dutch can reconcile the inconsistencies between the values and beliefs of the different groups. Constructs such as dual identity (Gaertner & Dovidio, 2014), identity complexity (Roccas & Brewer, 2001) and bicultural identity integration (Benet-Martinez & Haritatos, 2005) capture the extent to which memberships of the different groups remain distinct and separate or are more integrated.

Social identification with one’s ethnic and the national group may be informative in helping to explain personality shift over time for migrants and/or members of a minority group. For immigrants who move from one country to another, they are exposed to new information about the new cultural group, such as what is right and what is (in)appropriate. If they come to internalize this new set of norms then there will be an impact on their attitudes and behaviour particularly when the acquired culture is contextually salient or relevant (Turner at al., 1987; Turner & Onorato, 1999). For minority group members (born overseas or native born) whether their minority or majority identity is salient can impact on their self-definition.
In the current study, personality change across time amongst minority group members (Asian New Zealanders) and immigrants (overseas born) was investigated using a longitudinal four-wave research design. We expect that being Asian compared to European New Zealander will have specific acculturation challenges which are likely to impact on their personality variability. More specifically, Asian New Zealanders (foreign and native born) and European New Zealanders were compared across a four year period. In order to establish the effect of identity and its change on personality level and personality change over time, we first tested this effect in the overall sample including both Asian and European New Zealanders. We hypothesized that levels of ethnic identification and patriotism (as an indicator of alignment with the national group or cultural endorsement) should predict levels of personality and changes in personality across time (Hypothesis 1). Moreover, bigger change in ethnic identification and patriotism should be associated with bigger change in personality across time (Hypothesis 2). Extending previous research it is also possible to use a sub-sample of participants (overseas born) to explore the impact of length of time in the acquired culture and ethnic identification and patriotism on personality, as the overseas born can be seen as immigrants and any effects of identification may be amplified (Hypothesis 1b and 2b). Therefore, both of these two hypotheses will be tested using the larger more inclusive sample, as well as the overseas born sample.

More specifically among Asian New Zealanders, we hypothesize that Asian New Zealanders would score lower on Extraversion, Agreeableness and Honesty-Humility, and higher on Neuroticism than European New Zealanders (Hypothesis 3). This
hypothesis is based on the typical personality profiles of Asians and New Zealanders in cross-cultural studies (e.g., Schmitt et al., 2007; McCrae & Terricano, 2005). In these cross-cultural comparisons, Asians’ scored consistently low on Extraversion, Agreeableness and higher on Neuroticism than New Zealanders. The comparison on Conscientiousness and Openness was rather inconclusive. Also in a previous study comparing Asians with other New Zealanders, Asians scored significantly lower than other New Zealanders on Honesty-Humility (Sibley & Pirie, 2013). It is expected that more personality change will be observed across time for the Asian New Zealander cohort compared to European New Zealanders (Hypothesis 4). This personality change can be associated with levels of their identification with being Asian and their patriotism towards the New Zealand nation (Hypothesis 5).

Method

Sample.

The New Zealand Attitudes and Value Study (NZAVS) is an ongoing nationwide representative longitudinal study initiated by Sibley and colleagues. Participants are New Zealand citizens or permanent residents selected through the mailing address they provided during national political voting. The first wave of the study was conducted in 2009 and included 6,518 New Zealand participants. Among these participants, less than half (N = 2,990) completed all four waves of the study from 2009 to 2012. Due to this high dropout rate, new participants were added to the study each year.

Attrition analysis was performed only for Time 1 to compare those who
completed all four waves and those who dropped out during the process. We found that those who completed four waves of the study and those who dropped out at some point did not differ in proportion of gender, marital status, parenting status, religious status or employment status. However, compared to those who completed four years of the survey, the dropouts were slightly younger (Drop $M = 45.5$; Stay $M = 50.8$; $b = .166$, $p < .001$). They were also significantly more extraverted (Drop $M = 4.10$; Stay $M = 3.98$, $b = -.049$) and neurotic (Drop $M = 3.51$; Stay $M =3.36$; $b = -.067$), less agreeable (Drop $M = 5.18$, Stay $M = 5.31$, $b =.067$), conscientious (Drop $M = 5.02$; Stay $M = 5.19$; $b = .083$) and honest (Drop $M = 4.84$; Stay $M = 5.27$; $b = .160$). They also identified more with their own ethnic group (Drop $M = 3.97$, Stay $M = 3.60$; $b = -.106$) and demonstrated less patriotism towards New Zealand (Drop $M = 5.90$; Stay $M = 5.97$; $b = .034$).

The set of hypotheses concern European New Zealanders and Asian New Zealanders so other groups the Maoris, Pacific islanders, other ethnicity and those who reported more than one ethnicity were removed, reducing the N to 2,439. This constituted our grand sample. We used this sample to test Hypothesis 2a and 3a which concern the effect of ethnic identification and patriotism on personality and its change over time. For this sample, the age of participants ranged from 18 to 90 years, with the mean of 50.8 years. In the remainder of the thesis we called this sample the Grand sample.

In relation to Hypotheses 2b and 3b that specifically concern immigrants, the sample included an overseas born sample ($N = 530$). This sample is a sub-sample of the
IDENTITY PROCESSES IN PERSONALITY VARIABILITY

grand sample and included. 476 participants who reported being Europeans, and 54 (10.2%) who defined their ethnicity as Asians. In terms of gender 317 (59.8%) of these participants were female, and 213 were male with an age range from 18 to 88, with the mean age of 53.4 years ($SD = 13.9$). Participants had been living in New Zealand for a period of time ranging from 1 year to 80 years, with the average of 27.9 years ($SD = 18.1$). In the remainder of the thesis we referred to this sample as the Oversea sample.

In order to investigate the effect of patriotism and ethnic identification on personality change, we chose the Asian sample specifically. By narrowing the sample to one ethnicity, we can predict the direction of personality change over time and the direction of the effects of ethnic identification and patriotism on personality. Hypothesis 3, 4 and 5 are specifically about this group of participants. There were 309 participants in Time 1 who reported being Asian. 89 of the Asians completed all four times of the measurement and constitute our Asian subsample. 57 of these 89 Asians are female, and 32 of them are male. Their age ranges from 18 to 72 with a mean of 44.4 years. 29 of these 89 Asians were born in New Zealand, and the other 60 were born overseas. For these 60 participants who were born overseas, they had been living in New Zealand from 2 years to 41 years with an average of 11.7 years. In the remainder of the thesis we referred to this sample as the Asian sample.

Due to the complexity of the hypotheses and the sample, it is important for us to clarify that the oversea sample and the Asian sample are both subsamples from the grand sample with the N of 2,439. There is an overlap between the oversea sample and the Asian sample, as many Asians were born overseas. However, they serve different
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research purposes and were used to test different hypotheses. In the following section we reported the reliability (Cronbach’s α) and mean for each of the three samples and treated them as independent samples.

Materials.

All participants completed the pen-and-paper survey which was mailed to their residence. It was then manually entered into the database by research assistants. The NZAVS includes measures that assess a broad range of social issues including attitudes towards outgroups, political opinions, sexism, and health outcomes and demographic information. The constructs of interest to the current research are personality, ethnic identification, patriotism (as an indicator of alignment with the national group or cultural endorsement) and demographics. Each of these scales is described in detail below.

**Personality.** Personality is assessed by the Mini-IPIP6 (Sibley et al., 2011), a 24-item measure of six personality dimensions including Honesty-Humility. Twenty of the items were from the Mini-IPIP scale developed by Donnellan, Oswald, Baird and Lucas (2006), which measures the Big Five dimensions of personality. The other four items were adapted from Ashton and Lee’s (2009) HEXACO measure of Honesty-Humility and the Narcissism scale (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). The items were rated on a 7-point Likert scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). All six dimensions were reported to have extremely high stability (Milojev, Osbourne, Greaves, Barlow & Sibley, 2013). The reliabilities of the scales in each subsample are reported in Table 1 below.
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*Ethnic identification.* Ethnic identification was measured by three items. The items were adapted from the centrality sub-scale of the 12-item measure of social identification by Cameron (2004). An example of the item is “The fact that I am a member of my ethnic group is an important part of my identity”. This dimension of social identification best captures the salience and significance a group has for people, whereas the other two dimensions not included in the survey, ingroup ties and ingroup affects captures the bond with other ingroup members and the emotional values attached to the group (Cameron, 2004).

*Patriotism.* Given there was no national identification measure included in the original survey Patriotism was used to capture support and commitment to the superordinate national group. Two items adapted from the Patriotic and Nationalistic attitude scale (Kosterman & Feshbach, 1989) were used to measure Patriotism. The two items are “Although at times I may not agree with the government, my commitment to New Zealand always remains strong” and “I feel a great pride in the land that is our New Zealand”.

*Demographics.* Participants reported their age, gender, ethnicity, marital and education status, whether they were born in New Zealand, and how long have they been living in New Zealand if not.

Table 6.1. The reliability of the scales for all three samples

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
<th>item N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>.737</td>
<td>.751</td>
<td>.741</td>
<td>4</td>
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<tr>
<td>Overseas sample</td>
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<td>.730</td>
<td>.751</td>
<td>.741</td>
<td></td>
</tr>
<tr>
<td>Asian sample</td>
<td>.784</td>
<td>.700</td>
<td>.811</td>
<td>.751</td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand sample</td>
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<td>.692</td>
<td>.675</td>
<td>.691</td>
<td>4</td>
</tr>
<tr>
<td>Overseas sample</td>
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<td>.677</td>
<td>.704</td>
<td>.668</td>
<td></td>
</tr>
<tr>
<td>Asian sample</td>
<td>.502</td>
<td>.576</td>
<td>.688</td>
<td>.547</td>
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</tbody>
</table>
## Identity Processes in Personality Variability

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Grand sample</th>
<th>Oversea sample</th>
<th>Asian sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conscientiousness</strong></td>
<td>.663</td>
<td>.665</td>
<td>.654</td>
</tr>
<tr>
<td></td>
<td>.664</td>
<td>.682</td>
<td>.614</td>
</tr>
<tr>
<td></td>
<td>.627</td>
<td>.651</td>
<td>.623</td>
</tr>
<tr>
<td><strong>Neuroticism</strong></td>
<td>.685</td>
<td>.696</td>
<td>.712</td>
</tr>
<tr>
<td></td>
<td>.653</td>
<td>.682</td>
<td>.733</td>
</tr>
<tr>
<td></td>
<td>.585</td>
<td>.593</td>
<td>.719</td>
</tr>
<tr>
<td><strong>Openness</strong></td>
<td>.686</td>
<td>.680</td>
<td>.692</td>
</tr>
<tr>
<td></td>
<td>.683</td>
<td>.663</td>
<td>.683</td>
</tr>
<tr>
<td></td>
<td>.723</td>
<td>.619</td>
<td>.731</td>
</tr>
<tr>
<td><strong>Honesty-Humility</strong></td>
<td>.492</td>
<td>.789</td>
<td>.774</td>
</tr>
<tr>
<td></td>
<td>.531</td>
<td>.775</td>
<td>.770</td>
</tr>
<tr>
<td></td>
<td>.624</td>
<td>.678</td>
<td>.753</td>
</tr>
<tr>
<td><strong>Ethnic identification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.807</td>
<td>.775</td>
<td>.781</td>
</tr>
<tr>
<td></td>
<td>.824</td>
<td>.782</td>
<td>.780</td>
</tr>
<tr>
<td></td>
<td>.900</td>
<td>.832</td>
<td>.848</td>
</tr>
<tr>
<td><strong>Patriotism</strong></td>
<td>.736</td>
<td>.763</td>
<td>.729</td>
</tr>
<tr>
<td></td>
<td>.787</td>
<td>.772</td>
<td>.770</td>
</tr>
<tr>
<td></td>
<td>.610</td>
<td>.770</td>
<td>.751</td>
</tr>
</tbody>
</table>

Note: The grand sample N = 2,439. The Overseas sample N = 530. The Asian sample N = 89.

### Overview of analysis.

In the same way that we separate our sample into three, we also reported our results in three separate sections. Latent growth modelling (LGM) was employed to examine the variance in personality change over time (Hypothesis 1 and 2). LGM estimates growth curves in the dependent variables (i.e., personality factors) and explains the variance predicted by the independent variables (i.e., ethnic identification, patriotism and for the overseas born, length of time in New Zealand). A growth trajectory is represented by two latent factors: an intercept factor which represents the starting point of the curve, and a slope factor which represents the change rate of the curve. Unconditional LGM investigates the variance in the intercept and the slope without having any explanatory variables. A significant result would indicate that there are substantial differences among individuals in their baseline and in change rate over time.
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time. Therefore unconditional LGMs for each of the personality factors were conducted first in order to test whether variances are significant in the growth/change factors. If the results from the unconditional LGMs showed significant variances in the slopes in the personality sub-factor, further conditional LGMs with independent/explanatory variables were tested to explain the variances.

To test the study hypotheses, conditional LGMs with Ethnic Identification and Patriotism were conducted on both the grand sample and the overseas sample. Age, gender and ethnicity were included in the model as covariates. Length of time stayed in New Zealand was also included for the overseas born sample. The intercepts (levels) of Ethnic Identification and Patriotism were entered to the model to predict personality, in order to test Hypothesis 1. The slopes of Ethnic Identification and Patriotism indicated change in identifications over time hence were included in the model to test Hypothesis 2. In total, 16 unconditional models (6 personality variables + 2 independent variables in both grand and oversea samples) and 12 conditional models (6 personality variables × two samples) were tested.

For the Asian sample, as the sample size of 89 is small LGM was not able to be conducted. Regression and mix-model analysis were performed instead to test Hypothesis 4 and 5. First, we examined the mean-level change of personality and identification among Asian New Zealanders over time, and whether the pattern differs from other New Zealanders. We then examined the mean-level difference between Asians New Zealander and European New Zealanders (Hypothesis 3). Second, we tested regression models of Time 1 identification predicting Time 1 and Time 4
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personality, with other factors controlled. The regression model of Time 1 identification predicting Time 4 personality was used to assess whether identification can predict personality change not only at one single time point but over the years. Mix model analysis can help us reveal the relation between identification and personality change over time rather than at one time point. The results of Asian sample personality change and regression are included in the appendix 3C and 3D.

Table 6.2. Date analysis summary

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Explanatory Variable</th>
<th>Outcome Variable</th>
<th>Sample</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intercept (level) of ethnic identification and patriotism</td>
<td>Personality level</td>
<td>Grand/Oversea</td>
<td>LGM</td>
</tr>
<tr>
<td>2</td>
<td>Change (slope) of ethnic identification and patriotism</td>
<td>Personality Change</td>
<td>Grand/Oversea</td>
<td>LGM</td>
</tr>
<tr>
<td>3</td>
<td>Asians vs Europeans</td>
<td>Personality</td>
<td>Grand</td>
<td>Mean-level comparison Regression</td>
</tr>
<tr>
<td>4</td>
<td>Asians vs. Europeans</td>
<td>Rank-order stability of personality</td>
<td>Grand</td>
<td>Regression, mix model analysis</td>
</tr>
<tr>
<td>5</td>
<td>Asians</td>
<td>Personality &amp; change</td>
<td>Asian</td>
<td></td>
</tr>
</tbody>
</table>

The LGM analysis regarding the grand sample is reported in results Section 1 of the results, along with general descriptives. The LGM analysis with the overseas sample is reported in Section 2, and results regarding the Asian sample are reported below in Section 3.

Results

1.1. Descriptives. The means and standard deviations for all three samples are reported below in Table 6.3. Asians scored lower on Extraversion, Agreeableness and Honesty-Humility, and higher on Neuroticism, and their personality fluctuated more
than the other two samples. The mean-level comparison between Asian New Zealanders and European New Zealanders will be reported in Section 3 of the results. The correlation table of the Grand sample is included in the appendix (Appendix 3A).

Table 6.3. Descriptives of the three samples.

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>Grand sample</td>
<td>3.97(1.17)</td>
<td>3.92(1.12)</td>
<td>3.87(1.13)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
<td>3.91(1.20)</td>
<td>3.89(1.14)</td>
<td>3.85(1.17)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>3.80(1.33)</td>
<td>3.69(1.18)</td>
<td>3.55(1.29)</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>Grand sample</td>
<td>5.33(0.96)</td>
<td>5.30(0.93)</td>
<td>5.31(0.90)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
<td>5.30(0.94)</td>
<td>5.22(0.96)</td>
<td>5.29(0.95)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>5.32(0.76)</td>
<td>5.17(0.84)</td>
<td>5.16(0.90)</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>Grand sample</td>
<td>5.20(1.04)</td>
<td>5.16(1.01)</td>
<td>5.14(0.98)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
<td>5.24(1.05)</td>
<td>5.21(1.03)</td>
<td>5.20(0.99)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>5.23(1.04)</td>
<td>5.25(1.00)</td>
<td>5.22(0.97)</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>Grand sample</td>
<td>3.35(1.11)</td>
<td>3.40(1.09)</td>
<td>3.37(1.09)</td>
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<tr>
<td></td>
<td>Overseas sample</td>
<td>3.36(1.09)</td>
<td>3.45(1.09)</td>
<td>3.39(1.12)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>3.42(1.01)</td>
<td>3.70(0.97)</td>
<td>3.62(1.05)</td>
</tr>
<tr>
<td>Openness</td>
<td>Grand sample</td>
<td>4.74(1.12)</td>
<td>4.73(1.09)</td>
<td>4.73(1.09)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
<td>4.83(1.13)</td>
<td>4.77(1.09)</td>
<td>4.83(1.10)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>4.89(1.08)</td>
<td>4.80(0.94)</td>
<td>4.77(1.07)</td>
</tr>
<tr>
<td>Honesty-Humility</td>
<td>Grand sample</td>
<td>5.33(1.23)</td>
<td>5.29(1.22)</td>
<td>5.30(1.20)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
<td>5.36(1.25)</td>
<td>5.33(1.21)</td>
<td>5.38(1.21)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>4.67(1.31)</td>
<td>4.66(1.14)</td>
<td>4.81(1.19)</td>
</tr>
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<td>Ethnic identification</td>
<td>Grand sample</td>
<td>3.36(1.53)</td>
<td>3.33(1.47)</td>
<td>3.47(1.46)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
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<td>3.53(1.55)</td>
<td>3.63(1.55)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>4.81(1.62)</td>
<td>4.83(1.49)</td>
<td>4.59(1.56)</td>
</tr>
<tr>
<td>Patriotism</td>
<td>Grand sample</td>
<td>5.94(0.99)</td>
<td>5.94(0.98)</td>
<td>5.91(0.96)</td>
</tr>
<tr>
<td></td>
<td>Overseas sample</td>
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<td>5.76(1.06)</td>
<td>5.75(1.06)</td>
</tr>
<tr>
<td></td>
<td>Asian sample</td>
<td>5.73(0.93)</td>
<td>5.72(1.01)</td>
<td>5.76(0.90)</td>
</tr>
</tbody>
</table>

Note. The grand sample N = 2,439. The Overseas sample N = 530. The Asian sample N = 89.

1.2.0 Changes in variables over four time points: Unconditional LGM of the grand sample

Unconditional LGMs were first conducted to examine whether there were significant variances in the changes in personality and identification variables over time.
for the overall sample. Results indicated that there were significant changes over four
time phases for Conscientiousness and Extraversion, as suggested by the slopes ($\beta = -
0.014, p = .008$ for Conscientiousness, and $\beta = -0.033, p < .001$ for Extraversion). Both
Conscientiousness and Extraversion decreased over time.

As for slope variance, for all variables except Openness and Extraversion, New
Zealand residents reported significant difference in their rate of change, suggesting
further models to explore what is associated with the change in personality.

1.2.1 Level and change in identification predicting change of personality

Figure 6.1. Conditional LGM of the intercept (baseline level) and slope (change rate) in
personality over time regressed on the intercept and slope for ethnic identification and
patriotism

We hypothesised that the intercept of ethnic identification and patriotism should
predict the mean level of personality (H1), and the change of ethnic identification and
patriotism over time may predict the change of personality (H2). Confirming our
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hypothesis, the intercept of Patriotism predicted the intercept of all five personality
dimensions, and the slope of Patriotism predicted the slope of Agreeableness,
Conscientiousness and Neuroticism. For Ethnic Identification, the mean of Ethnic
Identification predicted the mean of Neuroticism and Honesty-Humility, and the slope
of Ethnic Identification predicted the slope of Neuroticism and Honesty-Humility.
Gender negatively predicted the mean of all four personality dimensions, which suggest
that male score lower than female on Agreeableness, Conscientiousness, and
Neuroticism. Age negatively predicted Neuroticism, Extraversion and positively
predicted Honesty-Humility. Older people tend to be emotionally more stable and more
honest, but less extraverted than younger people. Finally, ethnicity predicted the change
of Agreeableness.

<table>
<thead>
<tr>
<th>Personalities</th>
<th>Predictors</th>
<th>Personality growth factors</th>
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<th>(\chi^2)</th>
<th>CFI/TLI</th>
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<tr>
<td>Agreeableness</td>
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<td>481.27</td>
<td>.971/0.967</td>
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<td>Intercept</td>
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<td></td>
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<td>Slope</td>
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<td></td>
<td>Gender</td>
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<td>Patriotism</td>
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<td>Ethnic</td>
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<td>Identification</td>
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<td>Patriotism</td>
<td>Slope</td>
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<td>Intercept</td>
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<td>Intercept</td>
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<td>503.45</td>
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</table>

202
<table>
<thead>
<tr>
<th>Identity Processes in Personality Variability</th>
</tr>
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<td>Gender Intercept</td>
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<tr>
<td>Extraversion Intercept</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Patriotism Intercept</td>
</tr>
<tr>
<td>Intercept</td>
</tr>
<tr>
<td>Age</td>
</tr>
</tbody>
</table>

Note. N=2,424. Non-significant coefficients have been omitted. European New Zealanders coded as 0 and Asian New Zealanders coded as 1. Female coded as 0 and male coded as 1. $\chi^2$ is the chi-square of the model fit. *p < .05. **p < .01. †p < .1.

2.1 Unconditional LGM of oversea sample

Along the same line of Hypotheses 1 and 2, it was expected that this same pattern of findings may be evident in the sample of overseas born New Zealanders. In line with previous research it is also possible to include a measure of Length of stay in New Zealand which captures the time for acculturation in the acquired culture. Over and above Length of time it is expected that Ethnic Identification and Patriotism will be significant predictors of personality across time.

Among the overseas born sample, the slope of Extraversion change reached significance. Extraversion level decreased over time among overseas born New Zealanders. However, Conscientiousness, Honesty-Humility and Ethnic Identification had no individual differences in their rates of change that could be explained by predictors, therefore Conscientiousness and Honesty-Humility were not included when running conditional LGMs. Ethnic Identification was entered into the model as the mean-level of all four time points to see whether it showed any influence on personality and its change.
2.2 Group membership predicting change in personality among overseas born New Zealanders

We next ran models with the intercept (levels) and slope (changes) of Patriotism predicting the intercepts and slopes of personality factors. Same as the slope model conducted for the grand sample, this model allows us to investigate how changes in identification predicted changes in personality over time. Ethnic identification was included in this model; however, as there is no significant variance, the mean level of the slope of ethnic identification was used to explain the change in personality over time instead of the variability among individuals. Gender, age and years spent in New Zealand were entered as predictors for the mean of personality, and ethnicity was entered as predictor of change of personality. The result table is in the Appendix 3B.

The baseline level of Patriotism predicted baseline level of Extraversion, Agreeableness and Neuroticism. The change of Patriotism over time predicted change of Agreeableness in the positive direction and change of Neuroticism in the negative direction. Age negatively predicted Extraversion and Openness, and Gender predicted Agreeableness, Neuroticism and Openness as well. Similar to the Grand sample results, older generations tend to be less extraverted and open, and female tend to be more agreeable, neurotic and less open. Ethnicity predicted change of Agreeableness. Europeans who are born overseas changed more on Agreeableness. The mean-level of Ethnic Identification did not predict either the mean or the change of personality.
3.1. Mean-level comparison between Asian New Zealanders and European New Zealanders

Among Asian New Zealanders, personality scores fluctuated more over time. Extraversion decreased from Time 1 to Time 3 but increased from Time 3 to Time 4. Agreeableness decreased across time but the biggest change happened between Time 1 and Time 2. Conscientiousness decreased slightly but overall is relatively stable. Neuroticism increased dramatically from Time 1 to Time 2 and decreased gradually from Time 2 onwards. Openness decreased from Time 1 to Time 3 and then increased slightly in Time 4. Honesty-Humility increased over time. The mean of personality among Asians and European New Zealanders at the four time points can be found in Table 6.5 below. The result of Asians’ mean-level change over time can be found in the Appendix 3C.

We compared the mean personality scores across all four time points between Asian New Zealanders and European New Zealanders in order to test our Hypothesis 3. A significant difference was found between Asians and other New Zealanders on Extraversion, Neuroticism and Honesty-Humility. Asians scored significantly lower on Extraversion and higher on Neuroticism than other New Zealanders in Time 2 and Time 3. Marginally significant differences were found for Extraversion in Time 4. Asians also scored significantly lower on Honesty-Humility across all time points compared to other New Zealanders. Meanwhile, Asian New Zealanders were significantly less patriotic towards New Zealand than European New Zealanders at Time 1, 2 and 4.

A regression was performed to test the difference of rank-order stability between
Asian and European New Zealanders (Hypothesis 4). Rank-order stability of personality is usually calculated by the correlation of personality between several time points, and that regression is necessary to see the significance of this difference between the correlations. Results of Time 1 and Time 4 correlations showed that Asians tend to have higher fluctuation regarding rank-order personality than Europeans. Asians Time 1 and Time 4 correlations were indeed lower for Agreeableness, Openness and Honesty-Humility (Cronbach’s $\alpha$ being .43, .54 and .58 respectively) than Europeans (Cronbach’s $\alpha$ were .60, .68 and .69 respectively). This indicate that the rank-order stability for Agreeableness, Openness and Honesty-Humility was lower for Asians than Europeans. However, the regression results suggested a marginally significant difference for Agreeableness, $b = -.027$, $p = .069$.

Table 6.5. Mean comparison of personality and patriotism between Asians and European New Zealanders

<table>
<thead>
<tr>
<th></th>
<th>Means</th>
<th>$F$ (1, 2438)</th>
<th>$p$</th>
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</thead>
<tbody>
<tr>
<td>Extraversion Time 1</td>
<td>3.80 (.133)</td>
<td>3.99 (1.15)</td>
<td>2.351</td>
</tr>
<tr>
<td>Extraversion Time 2</td>
<td>3.69 (1.18)</td>
<td>3.95 (1.11)</td>
<td>4.723</td>
</tr>
<tr>
<td>Extraversion Time 3</td>
<td>3.55 (1.29)</td>
<td>3.90 (1.12)</td>
<td>8.438</td>
</tr>
<tr>
<td>Extraversion Time 4</td>
<td>3.70 (1.13)</td>
<td>3.90 (1.12)</td>
<td>2.804</td>
</tr>
<tr>
<td>Agreeableness Time 1</td>
<td>5.32 (.76)</td>
<td>5.31 (.97)</td>
<td>.011</td>
</tr>
<tr>
<td>Agreeableness Time 2</td>
<td>5.17 (.84)</td>
<td>5.29 (.94)</td>
<td>1.551</td>
</tr>
<tr>
<td>Agreeableness Time 3</td>
<td>5.16 (.90)</td>
<td>5.31 (.91)</td>
<td>2.137</td>
</tr>
<tr>
<td>Agreeableness Time 4</td>
<td>5.16 (.75)</td>
<td>5.30 (.92)</td>
<td>2.037</td>
</tr>
<tr>
<td>Conscientiousness Time 1</td>
<td>5.23 (1.04)</td>
<td>5.19 (1.05)</td>
<td>.125</td>
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<td>5.25 (1.00)</td>
<td>5.15 (1.01)</td>
<td>.798</td>
</tr>
<tr>
<td>Conscientiousness Time 3</td>
<td>5.22 (.97)</td>
<td>5.13 (.99)</td>
<td>.799</td>
</tr>
<tr>
<td>Conscientiousness Time 4</td>
<td>5.18 (.91)</td>
<td>5.15 (.96)</td>
<td>.123</td>
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<tr>
<td>Neuroticism Time 1</td>
<td>3.42 (1.01)</td>
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<td>3.70 (.97)</td>
<td>3.40 (1.10)</td>
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<td>Neuroticism Time 3</td>
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<td>3.37 (1.09)</td>
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<tr>
<td>Neuroticism Time 4</td>
<td>3.53 (.94)</td>
<td>3.35 (1.09)</td>
<td>2.310</td>
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<tr>
<td>Openness Time 1</td>
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<td>Openness Time 2</td>
<td>4.80 (.94)</td>
<td>4.73 (1.09)</td>
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</tr>
<tr>
<td>Openness Time 3</td>
<td>4.77 (1.07)</td>
<td>4.73 (1.08)</td>
<td>.104</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>Time 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 4</td>
<td>4.82 (1.01)</td>
<td>4.72 (1.07)</td>
<td>.698</td>
<td>.407</td>
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<tr>
<td>Honesty-Humility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>4.67 (1.31)</td>
<td>5.29 (1.26)</td>
<td>20.91</td>
<td>.000</td>
</tr>
<tr>
<td>Honesty-Humility Time 2</td>
<td>4.66 (1.14)</td>
<td>5.24 (1.24)</td>
<td>29.269</td>
<td>.000</td>
</tr>
<tr>
<td>Honesty-Humility Time 3</td>
<td>4.81 (1.19)</td>
<td>5.25 (1.23)</td>
<td>10.938</td>
<td>.001</td>
</tr>
<tr>
<td>Honesty-Humility Time 4</td>
<td>4.79 (1.18)</td>
<td>5.29 (1.21)</td>
<td>14.715</td>
<td>.000</td>
</tr>
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<td>Ethnic identification</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>4.81 (1.62)</td>
<td>3.57 (1.64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 2</td>
<td>4.83 (1.69)</td>
<td>3.52 (1.57)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 3</td>
<td>4.59 (1.78)</td>
<td>3.64 (1.55)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 4</td>
<td>4.78 (1.35)</td>
<td>3.61 (1.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patriotism</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>5.73 (1.93)</td>
<td>5.98 (.98)</td>
<td>5.348</td>
<td>.020</td>
</tr>
<tr>
<td>Patriotism Time 2</td>
<td>5.72 (1.01)</td>
<td>5.98 (.97)</td>
<td>6.144</td>
<td>.013</td>
</tr>
<tr>
<td>Patriotism Time 3</td>
<td>5.76 (.90)</td>
<td>5.93 (.96)</td>
<td>2.450</td>
<td>.118</td>
</tr>
<tr>
<td>Patriotism Time 4</td>
<td>5.65 (.91)</td>
<td>5.88 (.97)</td>
<td>5.112</td>
<td>.024</td>
</tr>
</tbody>
</table>

Note: Ethnic identification was not included in the comparison, as identify with being Asian cannot be compare to identification with being Caucasian. However the means of four time points were still listed here for observation of mean-level change over time.

3.2. Asian sample Regression

To explore the effect of ethnic identification in more detail Asians were analysed separately. Gender, Age, and Length of time in New Zealand were also entered in the model. First, regression models were conducted with Time 1 identification and Time 1 Patriotism on Time 1 personality. Secondly Time 4 personality was regressed on Time 1 identification to examine if identification was a significant predictor. As mentioned in the hypotheses, running both Time 1 regression model and Time 4 regression model will enable us to see the influence of identification factors at that single time point (Time 1), and over time (Time 1 identification factors predicting Time 4 personality). The full model results are outlined in Appendix 3D.

Extraversion. In the model predicting Time 1 Extraversion, Ethnic Identification had a marginally significant positive effect. In the model predicting Time 4 personality, however, Ethnic Identification at Time 1 negatively predicted Extraversion at Time 4. Those who more strongly identify with being Asian at Time 1 reported higher level of Extraversion at Time 1 but lower level of Extraversion at Time 4. Patriotism had no
significant impact on personality, neither are Age, Gender, Length of time lived in New Zealand or country of birth.

**Conscientiousness.** In the Time 1 model, Patriotism, Gender and Age were significant in predicting Time 1 Conscientiousness. Older people tended to be more conscientious. Patriotic New Zealanders also were found to be more conscientious. In the Time 4 model, only Length of time in New Zealand was significant in predicting level of Conscientiousness at Time 4. Those who lived longer in New Zealand were less conscientious at Time 4. Although not significant, Asians scored slightly higher on Conscientiousness than European New Zealanders, which could be why those who lived longer in New Zealand became less conscientious at Time 4. But this effect is small and did not appear in followed-up mix model analysis.

**Neuroticism.** In the Time 1 model, country of birth and years living in New Zealand both predicted level of Neuroticism. The longer people had stayed in New Zealand, the more emotional stability they reported. However New Zealand born Asians were more neurotic than overseas born Asians. Patriotism marginally predicted Neuroticism. Patriotic New Zealanders were less neurotic. Being female also tend to be related to being more neurotic, but the effect was only marginal. However, none of these effects were significant in the Time 4 model.

**Honesty-Humility.** In the Time 1 model, Gender, Age and Country of birth all predicted Time 1 scores. Older people tended to be less materialistic and narcissistic compared to younger people. New Zealand born Asians were more honest and less narcissistic than overseas born New Zealand Asians. In the Time 4 model, Ethnic
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Identification and age had marginal effects on Honesty-Humility. Those participants who identified more with the Asian ethnic group tended to report lower levels of Honesty-Humility.

3.3. Asian subsample mix model results

Table 6. Mix-model analysis

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>t</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.75</td>
<td>.23</td>
<td>15.95</td>
<td>0</td>
<td>3.28 - 4.21</td>
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<tr>
<td>Time</td>
<td>-.06</td>
<td>.03</td>
<td>-1.98</td>
<td>.048</td>
<td>-0.11 - 0.00</td>
</tr>
<tr>
<td>Patriotism</td>
<td>.06</td>
<td>.09</td>
<td>0.719</td>
<td>.473</td>
<td>-0.11 - 0.24</td>
</tr>
<tr>
<td>ETHID</td>
<td>.30</td>
<td>.09</td>
<td>3.41</td>
<td>.001</td>
<td>0.13 - 0.47</td>
</tr>
<tr>
<td>Time * PATRI</td>
<td>.001</td>
<td>.03</td>
<td>0.05</td>
<td>.96</td>
<td>-0.06 - 0.06</td>
</tr>
<tr>
<td>Time * ETHID</td>
<td>-.07</td>
<td>.03</td>
<td>-2.416</td>
<td>.016</td>
<td>-0.13 - 0.01</td>
</tr>
<tr>
<td>Gender</td>
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<td>.24</td>
<td>-2.213</td>
<td>.03</td>
<td>-1.02 - 0.05</td>
</tr>
<tr>
<td>Length</td>
<td>.02</td>
<td>.01</td>
<td>2.724</td>
<td>.008</td>
<td>0.005 - 0.03</td>
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<tr>
<td>Openness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
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<td>.34</td>
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<td>.10</td>
<td>-0.596</td>
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<td>ETHID</td>
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<td>.09</td>
<td>2.814</td>
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<td>0.08 - 0.45</td>
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<tr>
<td>Time * PATRI</td>
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<td>.03</td>
<td>1.905</td>
<td>.058</td>
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</tr>
<tr>
<td>Time * ETHID</td>
<td>-.10</td>
<td>.03</td>
<td>-3.139</td>
<td>.002</td>
<td>-0.17 - 0.04</td>
</tr>
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<td>Gender</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Intercept</td>
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<td>.03</td>
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<td>.224</td>
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<td>.11</td>
<td>-1.949</td>
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<tr>
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<td>-1.639</td>
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<tr>
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<td>.22</td>
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<td>.008</td>
<td>0.15 - 1.01</td>
</tr>
<tr>
<td>Length</td>
<td>.01</td>
<td>.01</td>
<td>1.884</td>
<td>.063</td>
<td>-0.00 - 0.02</td>
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</tbody>
</table>

Note: ETHID = Ethnic Identification; PATRI = Patriotism.

Mix-model analysis was conducted to further explore the effect of identification and patriotism on personality over time. The merit of mix model analysis is that instead
of one time point, it can explore the relations over four time points in the one analysis. Gender and Length of stay in New Zealand were also entered in the model. As some of the Asians were born in New Zealand, we used their age as an indicator of their length of stay. Mix model results indicated that Ethnic Identification strongly predicted Extraversion and Openness. There was a significant interaction between Time and Ethnic Identification for Extraversion and Openness. For Honesty-Humility, there was a significant interaction between Time and Patriotism.

These significant interactions suggest that Asian New Zealanders with different levels of ethnic identification and patriotism demonstrated a different rate of change over time on these personality dimensions. In order to better understand this difference and to unpack the direction of the interaction between Time and Ethnic identification and also Time and Patriotism, a tertile split (divided into three groups) was performed on Ethnic identification and Patriotism that grouped participants into low identifiers, medium identifiers and high identifiers. Each group contains 33.3% of the participants.

**Extraversion.** Those who did not identify strongly as Asians demonstrated increases in Extraversion over time. Those who belonged to the medium group showed decreases in level of extraversion over time. The high identifiers, however, showed an unstable level of Extraversion across the four time points and overall it stayed unchanged in Time 1 compared to Time 4. Gender and length of stay in New Zealand are both significant in predicting Extraversion. Female are less extravert compared to male. The longer Asians stay in New Zealand, the more their responses.

**Openness.** For Ethnic Identification, those low in Ethnic Identification
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experienced an increase in their level of Openness, and those with medium and high identification reported a decrease in Openness. Those who demonstrated higher levels of New Zealand Patriotism reported increases in Openness. Those participants reporting less Patriotism reported a decrease in Openness from Time 1 to Time 3, and a slight increase at Time 4. In addition, Gender was a marginally significant in predicting Openness over time with Females reporting less Openness compared to male.

_Honesty-Humility_. Those who scored high on New Zealand Patriotism reported increasing Honesty-Humility scores over time. On the other hand, those who scored low showed a decrease in Honesty-Humility score from Time 1 to Time 2, and an increase from Time 2 to Time 4. The medium group showed increases from Time 1 to Time 3, and then a decrease in Time 4. Gender was significant in predicting levels of honesty-humility over time with females scoring higher on Honesty-Humility across all four times. Length of stay marginally predicted Honesty-Humility such that the longer Asians stayed in New Zealand, the less narcissistic and materialistic their responses.

**Discussion**

The purpose of this study is twofold. The first aim is to investigate the longitudinal personality change among immigrants. Past literature on the acculturation of personality have mainly focus on cross-sectional comparison between cohorts and not track this acculturation process longitudinally. Indeed personality change could be a slow process and needs large sample and long duration. The second aim of the study is to investigate the mechanism of this change. We hypothesized that this acculturation of personality over time may be linked to identification with one’s own ethnicity or
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heritage culture, and their identification with the host nation. Not many studies have explicitly made this link between acculturation and identification, despite identity being a key idea in both acculturation strategies and cultural endorsement theory and research. We believe that personality change can be linked to levels and changes in identification.

Specifically, we hypothesized that among New Zealanders, especially overseas born New Zealanders, their levels of ethnic identification and New Zealand patriotism should predict levels of personality over time (Hypothesis 1a and 1b). Using latent growth curve model, we found that baseline levels of ethnic identification and patriotism predicted levels of personality. Specifically, those New Zealanders with high patriotism, whether they were born overseas or not, tend to have higher levels of Extraversion, Agreeableness, Conscientiousness, Honesty-Humility and Emotional Stability, which is consistent with the typical profile of New Zealanders. High ethnic identification is associated with high Neuroticism and low Honesty-Humility, which supports for our Hypothesis 1.

However, we believed that this pattern of results may be amplified in the overseas sample compared to the grand sample, but the results are very similar in both samples. This may be because the overseas sample is a subsample from the grand sample. Also, it could be because the majority of the overseas born New Zealanders in our sample are of European descent making them very similar to New Zealanders more broadly. Such a background could be expected to be associated with much less acculturative stress or social difficulty when they moved to New Zealand, compared with overseas born Asian or people from other ethnic background.
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Regarding our Hypothesis 2, which proposed that the changes in ethnic identification and patriotism over time should also predict changes in personality over time, there was supportive evidence. Results from our latent growth curve model suggested that those with bigger change in patriotism and ethnic identification over time showed bigger change in Agreeableness, Conscientiousness, and less change in Neuroticism and Honesty-Humility. Hypothesis 2 was supported by results from both grand sample and overseas sample. But we found less effects in the overseas sample than in the grand sample, which is opposite of what was expected.

Focusing on the Asian sample specifically, we hypothesized that Asians have a distinct personality profile compared to other New Zealanders, and their personality would fluctuate more because of acculturation challenges (Hypothesis 3 and 4). The former hypothesis was supported. Asian New Zealanders tend to have lower Extraversion, Honesty-Humility and higher Neuroticism than the majority group European New Zealanders. Their level of Extraversion, Agreeableness and Neuroticism also showed significant change over time. Although some literature suggest that Asians are more Agreeable than Westerners, in the case of Australians and New Zealanders, both McCrae et al. (2005) and Schmitt et al. (2007) suggest that the mean scores of Asians level of Agreeableness were higher but only for some Asian countries. Asians as a group showed distinct patterns of low Extraversion and Openness compared to people from other continents, but neither McCrae et al. (2005) nor Schmitt et al. (2007) found coherent patterns for Agreeableness among Asians compared to Europeans. Both our data and the literature of cross-cultural comparison indicates that Asians may not be
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more Agreeable than Westerners.

Asians identify less with their own ethnicity over time, and endorsed the New Zealand government more over time (supporting a tendency towards acculturation). The change is small, but is expected. The acculturation process assume that immigrants should endorse the mainstream culture more over time, but not necessarily abandon their ethnic identification. However, comparing the rank-order stability of Asians with European New Zealanders, Asians did not fluctuate more on their personality than European New Zealanders due to acculturation. We did not find significant difference to support our Hypothesis 4.

We hypothesized that Asian New Zealanders’ personality level and change trajectory may be associated with their identification with their ethnicity and New Zealand (Hypothesis 5). The results of our mix model analysis supported this hypothesis. Overall, ethnic identification negatively influenced Extraversion, Openness and Honesty-Humility. Those whose ethnicity was a central part of who they are tended to be more introverted, conservative and egocentric. For low identifiers with their own ethnic group, their level of extraversion and openness increased over time. Medium and high identifiers become less extraverted and open over time.

Patriotism towards New Zealand, on the other hand, positively influenced Extraversion, Openness and Honesty-Humility. Those who highly endorse the New Zealand government are more conscientious, less emotionally stable, and less egocentric. Highly patriotic Asian New Zealanders report increased levels of Openness and Honesty-Humility, compared to low patriotic individuals. This difference in their
personality and tendency of personality change is consistent with our hypothesis.

Explaining these results further, considering both Asian New Zealanders and other New Zealanders, it appears as if patriotism and ethnic identification are associated with the levels of personality, and also the change in personality. Those who highly endorse being New Zealanders have more typical New Zealand personality patterns, and their personality becomes more typical over time (including as they come to endorse New Zealand more). On the other hand, those who highly identify with their own Asian ethnicity are more similar to the typical Asian profile, and become more similar over time as they identify with this group more.

**Implications of the findings**

The present study builds on the previous studies of the acculturation of personality among Japanese American and Chinese Canadian (Güngör et al., 2013; McCrae et al., 1998). Importantly though a longitudinal design instead of cross-sectional is used to investigate these questions. Furthermore instead of measuring or assuming host country endorsement, we used levels and changes in identification as the predictor of this acculturation process. Use of such measures helps better understand how cultural endorsement occurs for immigrants, and the role identity processes play in acculturation of personality. Acculturation happens not only because people need to resolve social difficulties that they face in life and learn how to act in certain situations, it also involves actively identifying as a member of this new society. Accepting this new cultural membership or not and giving up the old ethnic group or not, have been found to be the predictor of personality and its change. This study reveals the important role of
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identity processes on self-concept transformation as indicated by personality indicators.

**Limitations and future directions**

One limitation is the sample size. Given the small sample size for the Asian sample it is difficult to explore the relation between identification and personality over time among Asian New Zealanders using latent growth curve modelling. Instead we used regression and mix model analysis and found similar patterns to the LGM results we found with the Grand sample that Ethnic Identification and Patriotism predicted personality and its change.

Through this research it also became clear that Asian New Zealanders have a less stable personality profile compared to other New Zealanders. Their levels of personality was more variable, which raises further questions about whether such variability is connected to the acculturation experiences or challenges or is a product of the small sample size. Immigrants are going through identity transition and their personality and other psychological constructs may be influenced by this transition period, resulting in a less stable personality profile. Due to this fluctuation, it was not possible to draw a clear conclusion of their overall personality change trajectory. In the future, a larger sample and a longer duration of time (more waves) could yield more stable and powerful results.

The representativeness of our sample may also be an issue. The Asian population makes up more than 10% of the total New Zealand population, but Asian New Zealanders constitute of only 4.4% of the participants in the data in 2009, and less than 3% in the longitudinal dataset. The small percentage of Asians in the sample could
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be due to other factors that impact on participation such as language, education, their work and family life. The work is also limited through only examining this group. There are many other ethnic groups which could be examined in the same ways in future work.

It is also the case that given a secondary data set was utilized, proxy measures had to be used for national identification as a New Zealander. We used patriotism as a proxy of national identification, but there are differences between these core constructs. Patriotism items used in this study emphasize on commitment and pride rather than self-identify as being New Zealand and feel strong ties with other New Zealanders. The ethnic identification measure only focused on the centrality dimension and did not include ingroup ties and ingroup affect dimensions (Cameron, 2004). There is recent work that shows that even a one item measure is related to these broader measures of identification that incorporate sub-factors (Postmes, Haslam & Jans, 2012). This suggests that even if other dimensions were assessed results could have been very similar.

Conclusions

Personality has been investigated in static conditions and the notion that personality is subject to environmental influences is for long rejected. The present longitudinal study suggests that personality is variable and socially constructed. Moreover, it filled in the gap between personality literature on the longitudinal personality change and cultural psychology literature on the acculturation of personality. To our best knowledge there are no studies that explore longitudinal acculturation of
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personality and the function of this acculturation. The present study found longitudinal personality change among Asian New Zealander immigrants over the period of four years, and most importantly, link this personality change to identity processes. It revealed the importance of identification in personality and its change over time among the group of people who are experiencing change. Through looking at this change and closely study this dynamic, some novel and interesting ideas may open up.
Chapter 7: Summary, Implications and Limitations of the thesis

The problem that the present thesis try to address concerned explanations for personality variability (and stability) and the lack of integration (despite similar models) across personality, cross-cultural and social psychology. In addition despite wider acceptance that personality can vary and many models predicting this to be true the psychological mechanisms that help explain when and how such change comes about are limited. The present thesis address these problems through introducing the social identity perspective and exploring its predictions about when and how personality change emerges. The empirical work of the thesis investigated the role of social identity processes, especially salience and identification in explaining personality variability. In this chapter we provide a recapitulation of the main arguments and revisit the key hypotheses and findings. The limitations and wider implications, and directions for future research are also outlined.

Summary of thesis and findings

This thesis examines the role of social identity processes in personality variability. It began by depicting the debate of personality variability in personality psychology, and several existing frameworks of personality variability (Chapter 2). Chapter 3 focused on the social-cultural determinants of personality variability and outlined models of cultural influences and how cultural and social factors shape and change self-definition, personality and behaviour of people who migrate to a new social and cultural environment. The understanding of social identity perspective on fluidity of self-concepts was also outlined in this chapter. In line with these arguments the
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empirical program investigated (a) the role of identification in cultural accommodation
and cultural frame switching among bilingual and bicultural Australian Chinese
individuals (Chapter 4); (b) the impact of salient identity on personality ratings and
behaviour (Chapter 5), and (c) the dynamics of identification on personality change over
time among immigrants (Chapter 6). Across these four empirical investigation, which
all assessed the same group of individuals under different experimental conditions or
across time, there was evidence of personality variability. Consistent with our
hypotheses, the role of identity processes in this variability was also supported by our
results.

In Study 1 outlined in Chapter 4, we explored the phenomenon of cultural frame
switching by language priming. Participants were 24 Australian Chinese who were
fluent in both English and Chinese. They reported levels of Australian and Chinese
identification prior to completing personality self-report measures in both languages,
with the order counterbalanced. Using a within-subject design, we found a main effect
for language (Chinese or English) on the dimension of Extraversion. This personality
difference was in a direction consistent with the personality profile typical of people
with Chinese heritage (lower in Extraversion) and typical of people with Australian
heritage (higher in Extraversion). Participants reported being more extraverted when
completing the survey in English, which suggests that they shifted towards what is
typical for the Australian category in this condition. Most importantly, we found that
identification as an Australian predicted both Extraversion and Neuroticism. Those who
highly identify with being Australian reported higher levels of Extraversion and lower
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level of Neuroticism, again consistent with the personality profile of the typical Australian. Although our findings in this study were not as strong as the language effects found in other bilingual personality studies (e.g., Chen & Bond, 2010, study 1; Ramirez-Esparza, Gosling, Benet-Martinez, Potter & Pennebaker, 2006), the results suggest that personality responses differ as a function of language.

In the second Study also reported in Chapter 4, rather than language use, Chinese and Australian cultural mindsets were primed with cultural icons. The study used a within-subject design and bicultural Australian Chinese individuals as participants. Again participants’ Australian and Chinese identification were measured before they completed the two cultural mindset priming conditions, with the order counterbalanced. Manipulation checks revealed that our Australian priming increased identification with being Australian, but the Chinese priming did not increase identification with being Chinese. Nevertheless, when switching between Australian and Chinese cultural mindsets, Australian Chinese bicultural individuals demonstrated significant changes in Openness. They indicated they were more open to experience after watching pictures associated with the Chinese culture. Similar to the result in Study 1, identification also predicted personality, specifically the dimension of Openness, Conscientiousness and Agreeableness.

Study 1 and 2 established the role of identification in predicting personality variability in cultural accommodation and cultural frame switching. The results are consistent with the work of Verkuyten and Poulia six (2006) and provide further support for the role of identity processes in explaining personality and personality variability.
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However, in Study 1 we found that Australian identification can explain the effect of language priming on Extraversion, but identification did not account for the effect of cultural mindset priming on Openness. This result was consistent with what Lechuga (2008) found when testing different priming effect of language and cultural icons. Although both language and cultural icons were argued to activate cultural mindset, language seemed to shift personality through identification, whereas cultural mindset may not. In our Study 2, despite careful and meticulous design and pre-test of the cultural icons, the Chinese cultural mindset priming did not increase Chinese identification. It suggests that these two priming methods might be fundamentally different and impact on the self-concept and cultural self-identity in different ways.

In the next empirical chapter the focus of the research shifted to the role of salient identity and the impact of different social identity salience on personality (assessed by self-report and behavioural ratings). We used a social identity salience manipulation similar to that used by Verkuyten and De Wolf (2002). Thirty-Two residents or citizens of Australia with Chinese heritage were interviewed and the interaction was videotaped. The interview was designed to make salient either participants Chinese social identity or Australian social identity. The behaviour of the participants was coded by two independent assessors. The method and behavioural rating procedure largely followed Chen and Bond (2010, Study 2). Self-reported personality responses indicated significant shifts in Emotionality and Conscientiousness as a result of the salience manipulation. The behavioural ratings suggested behaviour
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change with respect to levels of Openness and Intellect. Interestingly participants also reported that they felt their own personality and behaviour varied across situations.

The findings of Study 3 supported our hypothesis that salient identity can impact on personality responses such that people’s self-definition and behaviour varies depending on which cultural self is salient in a given situation. To the best of our knowledge there are few studies on personality variability measured by behavioural ratings. Only a handful of studies have explored social identity processes explicitly and directly (Mavor, Reynolds & Skorich, 2010; Reynolds et al., 2012). This study is the first to explore how a salient social category influences people’s behavioural expression of personality.

The studies reported in these two empirical chapters concerned with situations where immigrants already have formed new cultural affiliations and the impact of switching between their group memberships is examined. The theory and research on acculturation and dual identity also concern the role of identification during the formation of a new cultural group membership in the context of holding a heritage cultural group membership. In the final empirical chapter we examined the impact of identification during the process of acculturation. Using secondary data from the New Zealand Attitude and Value Study (NZAVS), we explored personality variability across time and linked ethnic identification and New Zealand patriotism to this process. Over 2,400 New Zealand citizens reported their personality, ethnic identification and patriotism at four time points, each approximately one year apart. Among them were 89 Asians who given the study aims were of particular interest.
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A key finding in this longitudinal study was that ethnic identification and patriotism predicted both baseline personality levels and its change over time. In particular amongst Asian New Zealanders, we found that those with high or low identification with their ethnic group or New Zealand as a nation showed different trajectories of personality change. Looking at Asian identification as an example, those who did not strongly identify with being Asian showed increases in Extraversion and Openness over time, in other words they became more similar to the typical personality profile of New Zealanders and less similar to the typical Asian personality profile. On the other hand, Asians with higher New Zealand patriotism reported increased Openness and Honesty-Humility over time, and low patriots showed change in the opposite direction. In this study we found evidence that personality fluctuated over time, and most importantly, identity processes played an important role in this acculturation of personality.

In summary the findings across these four studies are informative. They provide further evidence of personality variability as a function of changes in context, particularly when people switch between their cultural group memberships. Also, making salient social identities can impact on personality responses and behaviour. There is evidence as predicted that social identification processes are related to personality and personality change over time. Using a range of methods including experimental and longitudinal design and observer rating in addition to self-report, there is evidence that social identity processes is the mechanism of personality variability.
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Limitation of the empirical research and alternative models

There are several limitations of these studies which point to important future directions for research. The sample sizes across the experimental studies are small. This could be a reason why we did not find strong language or cultural mindset priming effects on personality (Study 1 and 2). In future studies with large sample sizes, a clearer and more consistent function of cultural mindset priming may emerge.

There could also be possible ceiling effects of identification for our participants. As participants were recruited through flyers, snow ball technique and advertisements on Facebook, it is possible that there were people who already identified highly with both cultural groups and were already curious about their dual identity. Their Australian and Chinese identity could both be chronically salient before they completed the experiment procedure. However, it is hard to recruit participants who showed no interests in relevant matters through flyers and advertisements. These issues are less evident in Study 4 where the focus was on increases (and decreases) in identification processes over time. More studies that adopt a longitudinal design can provide greater certainty about the pattern of findings reported in this thesis.

In Study 1 (outlined in Chapter 4), we did not include an identification measure after the language priming. With a before-and-after identification measure, we would have been able to better understand the impact of language use on social identity processes. As the communication accommodation theory proposed (Giles & Powesland, 1975), language use may trigger different identities to become salient. With a repeated measure of identification after the language manipulation, we may be able to explore the
hypothesis of the communication accommodation theory, and test the mediation model of identification on cultural accommodation. In fact across the empirical work of the thesis it has been difficult to investigate predictions regarding the role of social identification as a mediator between language or cultural mindset priming and personality. Identification and personality measures have been assessed at the same point in time making mediation less informative.

Across the studies we also find that different personality variables where impacted by the manipulation and measurement. At one level there is evidence of personality variability, but at another level it is difficult to make sense of the specific pattern. In Study 1 language effect on personality was found on Extraversion. In Study 2 the effect of cultural mindset priming on personality was found on Openness. In Study 3 the effect of salient identity on personality was found on Emotionality and Conscientiousness, and with respect to the behavioural ratings, Openness. In these three experimental studies although we consistently found personality variability as a function of priming or manipulation, the effect was on different dimensions of personality across studies.

It is also the case that the personality variables related to social identification also varied across studies. In Study 1 the effect of identification on personality was discovered on the dimensions of Extraversion and Neuroticism. In Study 2 the effect of identification was found on Conscientiousness, Agreeableness and Openness. This inconsistency could be due to limited sample size. Nevertheless, in future studies the effect of identification in cultural frame switching should be established through a range
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of diverse studies with bigger sample sizes and more representative and diverse groups of individuals.

In Study 2 Bicultural Identity Integration (BII) was included because this construct was proposed to be the reason that some bicultural individuals react to the cultural mindset priming in opposite directions than hypothesized. Our results were consistent with the findings in bicultural literature that people with low BII responded to the cultural mindset priming differently compare to people with high BII (e.g., Benet-Martinez, Leu, Lee & Morris, 2002). Due to the limited sample size we were unable to test whether people with low or high BII showed different directions of change in their identification after the priming procedure. However what we did find was that people with low BII identify less with both their heritage and mainstream cultures. It point to the question of how bicultural these people truly are. Future research should investigate how people with low or high BII responded to cultural priming in relation to their change of identification before and after the priming procedure.

In Study 3 two independent assessors with different ethnic background coded the video recordings of participants under different social identity salient conditions. Different ethnic background could be one of the reasons that they did not reach high agreements in the behavioural ratings. The cultural difference in behavioural rating patterns of assessors may be a new and interesting field. Also in future when conducting behavioural rating of personality, assessor ethnicity and cultural background is a factor that should be taken into account.
Study 4 explored personality and its change among European and Asian New Zealanders over time, and in particular the relationship between identification factors and personality change. A limitation with this longitudinal study is that we used an existing dataset with many but not all the variables of interest. The measure of Patriotism was used as a substitute for New Zealand National Identification. In future it would be good to investigate the personality change of immigrants as a function of all potential explanatory variables including age of immigration, length of residence, and their ethnic and national identification. Also given some evidence that Asian New Zealanders reported more fluctuated personality over time than European New Zealanders it may take longer for their personality to stabilize at this site of change; therefore researchers should observe this personality change through a longer period of time.

The rationale for choosing Australian Chinese in the experimental studies and New Zealand Asians in the longitudinal study is that these cultural groups vary extensively and therefore it may be more likely to observe personality change. The selection of these groups is consistent with close exploration of sites of extreme change where most personality shift is expected. However translating these ideas to other groups including role groups may present some issues because the characteristics and norms of the groups may not vary as significantly.

The empirical work reported in this thesis only focused on some aspects of personality change. As outlined in Chapter 2, here are four types of personality stability and change: mean-level change, rank-order stability, ipsative stability, and structural
stability (Robins, Fraley, Roberts & Trzesniewski, 2001). The mean-level change, or normative stability, concerns the change of personality ratings of a population as a whole, and is widely used in cross-cultural and bicultural studies. Our studies also assessed mean-level change but in different experimental conditions and over time. In Study 4 we also compared the rank-order stability of Asians and European New Zealanders, and concluded that although Asian personality profile was less stable than the European New Zealanders, the differences were not significant. The stability demonstrated here concerns the relative ordering of individuals within a cohort and the change of this ordering across time.

We did not look at structural stability or ipsative stability, which examines the stability of personality dimensions, and the levels of personality traits within an individual over time. It is possible that participants in Study 4 also exhibit ipsative change and variability in personality dimensions over time. However, as the aim of Study 4 is to explore the role of identification in predicting personality change over time, only the mean-level change over time allows this examination. In future research, a careful examination of all four types of personality variability and stability and the role of group and social identity change will enable us to better understand when and how personality varies.

Within the literature on personality variability and stability, the mean-level and rank-order stability are most widely tested, especially among studies of personality trait variability across age (e.g., McCrae et al., 2002; Wortman, Lucas & Donnellan, 2012). When concerning personality change as function of life events or social factors, mean-
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level change is most often chosen to assess personality variability (e.g., Costa, Herbst, McCrae & Siegler, 2000; Robins, Caspi & Moffitt, 2002). Therefore mean-level personality change can be seen as informative of personality variability and used in the present studies. In future, an examination of all four types of personality variability and the role if social identity processes will enable us to better establish personality variability over time and understand this phenomenon.

Implications for personality and role theories

The present thesis focused on exploring the role of identity processes, especially social identity salience and identification in personality variability. Using a series of studies with experimental and longitudinal designs, the present thesis established that social identity processes predict personality and behaviour change across contexts and over time. These results of variability provide support for frameworks in personality, such as the social investment principle and the Personality and Role Identity Structural Model (Roberts, Wood & Smith, 2005; Wood & Roberts, 2006). Specifically relevant to these models is evidence from Study 3 demonstrating that when participants switch between their salient social identities either as being Australian or as being Chinese they demonstrated change in self-reported personality and behaviour. These results are similar to what has been observed with changes in peoples’ role identities. Role identities could be considered as a social identity, such that both are acquired through the process of self-defining as member of a particular social category (Burke, 1980). However, as role expectations usually emphasize appropriate behaviour, it is possible that this personality shift can be best observed in behaviour rather than self-report
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It is when the role and its meaning becomes self-defining that more personality change should be observed. Future studies on role identities could incorporate measures of social identification as a way of further integrating and investigating these ideas.

It is also possible that when people switch between salient social or role identities, personality variability occurs not only on the mean-level but also on rank order, structural and ipsative variability. Many personality studies focus on mean-level and rank-order stability, but there are also studies testing structural stability and ipsative stability (e.g., McCrae et al., 2002; Robins et al., 2001; Vaidya, Gray, Haig & Watson, 2002). Future studies could also look at rank-order, structural and ipsative stability when people switch between contexts or salient social/role identities.

Also, the present thesis measured personality in two ways, self-report and behavioural ratings. Alternative methods, such as peer and spouse rating, would also increase the credibility of personality results across situations. In addition, in Chapter 2 we outlined several ways to explore personality variability across contexts, including experimental manipulation in order to create different contexts, and the diary approach. Study 1 to Study 3 in the present thesis adopted experimental manipulation, and Study 4 tracked personality variability over time. Future studies should employ varies of methods to explore the change in personality, such as the diary approach of measuring personality across contexts and role identities (e.g., Theakston, Heller, Komar & Lee, 2006).
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Implications for cross-cultural psychology and multiculturalism

There is much research under the umbrella of cross-cultural psychology which shows variability in people’s cognition, emotion and personality as a function of their cultural group memberships or which cultural group membership is primed in the current situation. To date information processing and cognitive accessibility has been used to explain these shifts. In this thesis the role of cultural self-identity and social identification and salience have been introduced as concepts that may help explain when and how such shifts occur. Across the studies there are indications that social identification is important and should be more explicitly integrated into existing frameworks.

Findings surrounding BII and the strength of Australian and Chinese identification are also of interest. In our examination of BII and its relation to mainstream and heritage identifications, we found that compared to participants who reported low cultural conflict, those that reported high cultural conflict had lower identification for both their mainstream culture and heritage culture. These results suggest that experiencing conflict between the two cultural identities may negatively impact on how much people identify with their cultural groups. In the original study on BII, it was discovered that acculturation stressors such as discrimination, intercultural relations, and language all positively predict cultural conflict (Benet-Martinez & Haritatos, 2005). Additionally, these stressors could negatively impact on identification with cultural groups as well. The dynamic relations between acculturation stressors, mainstream and heritage cultural identities, and BII call for more research.
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In the current research based in Australia, both Chinese and Australian identification were unrelated. Verkuyten and Martinovic (2012) reported negative associations between ethnic and national identifications among immigrants in many European countries. The differences in results could also be related to the fact that Australia is a multicultural society in which immigrants are less discriminated against and perceive less pressure to assimilate compared to immigrants in European countries (Verkuyten & Martinovic, 2012). As a result there is less cultural conflict making it possible to identify both as an Australian and Chinese. In line with this point, new research points out that perceived discrimination leads to greater cultural conflict and less integration between the two cultural identities (Qumsey, Szabo & Ward, 2016). Sense of acceptance from other Australians has also been found to have a positive impact on self-acceptance, and facilitates sense of belongingness for bicultural Australians (Hodgins & Winskel, 2016). These results point to the important role of the host society in facilitating acculturation process of immigrants and reducing conflict enabling dual identifications.

The three studies reported in Chapter 4 and 5 suggest that identity processes, particularly identification and salience, are important in cultural accommodation and cultural frame switching. More specifically, Study 4 highlighted the importance of identification in the process of adopting a second cultural identity (New Zealander) and in the acculturation of personality towards the typical New Zealander (Western) profile. It suggests that when acquiring a second culture, both the identification with one’s heritage background and identification with the new mainstream culture are implicated.
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in personality change. The results also support the notion of cultural self-identity
(Kitayama & Tompson, 2010) and that an individual needs to engage in a voluntary way
with cultural practices for it to affect their psychological functioning. There is an
overlap between this analysis and processes of social identification. Future studies
should take this into account and measure levels of identification as an indicator of
acculturation. Hence, Study 4 (in combination with other studies in the thesis) provided
strong support to the importance of identity in acculturation.

Implications for the social identity perspective

The present research extended the impact of social identity processes to
personality and behaviour. Results from this current series of studies established that
salient identity shapes self-definition and behaviour, and that identification can
influence personality over time. There has been limited research on personality within
the social identity perspective despite the key ideas being clearly outlined in early
writing (Reynolds, Turner, Branscombe, Mavor, Bizumic & Subasic, 2010). Reynolds
and colleagues (Reynolds et al., 2012) conducted two experiments on social identity
salience and found that when Australian university students’ non-Aboriginal ethnic
identity was made salient, they demonstrated a higher level of Neuroticism compared to
when their Australian national identity or student identity was made salient. This study
is one of the very few to provide empirical evidence that group membership and its
associated group norms can be internalized into one’s self-concept and shape
personality. The current research found evidence of the context-depending nature of
self-definition as assessed by personality processes and therefore supported dynamic
interactionism, a fundamental assumption underlying both social identity perspective and the dynamic constructivist approach of culture (Hong, Benet-Martinez, Chiu & Morris, 2003; Reynolds et al., 2010) that values, beliefs, self-concept and behaviour are the outcome of the interaction between person and the context. It supported the argument made by Onorato and Turner (2004) that the self-concept is variable and context-dependent.

The current findings are encouraging and open up a pathway for further empirical work in this area. In particular Study 4 highlighted the longitudinal impact of identity processes on personality. This research builds on the other empirical research reported in this thesis and studies by Reynolds et al. (2012) and Mavor et al. (2010) who have explored the relationships between salience and personality processes. The longitudinal design adds confidence to these findings and provides a possible direction for future research.

There is also evidence that people have an awareness that identity shift can lead to personality change. In Study 3 participants reported that their friends around them noticed their personality differences when they switch between social identities. This suggests that although the process of making salient a social identity or switching between identities may occur subconsciously, its influence on personality can also occur at a conscious level and that people are aware of it. Overall, the present thesis provided empirical evidence that identity salience and identification are related to self-definition as assessed by personality.
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There is more work to be done at the intersection of personality processes and social identity. One area that requires further conceptualisation and investigation is perceiver readiness. This is a construct in Self-Categorization Theory that captures people’s relatively stable knowledge (including self-knowledge), motives, theories, but could it also contain people’s relatively enduring sense of self. Similarly, in Cognitive-Affective system theory of personality by Mischel and Shoda (1995), it is also a knowledge system within the self that interact and process the information in the contexts, and leads to appropriate behaviour. In this sense the personality processes correspond with the social identity processes. In the future, more work on perceiver readiness will lead to stronger engagement with personality processes, and facilitate further integration between social and personality research.

One of the critiques of personality trait theories from this perspective is that personality was considered to be the stable person factor but within this “person” factor there is limited room for people’s group memberships, changes in group memberships, and changes in self-definition as a function of shifting from personal identity to social identity. But if one moves to thinking about a working self-definition or self-categorization that is informed by relatively stable knowledge (even traits) then there could be further points of integration.

**Conclusions**

For a long time personality has been understood as a static personal factor that reflects stable behavioural and psychological tendency. The theories and evidence are pointing to a more dynamic view of personality where there is possibility of change as a
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function of people experiences and roles. This thesis has added to this list of factors the
social identity processes of social identification and salience. The aim was to further
integrate work across personality, cross-cultural and social psychology through
exploring social identity processes and personality variability. What is needed are
models that are able to account for variability, as well as explaining the common regular
patterns. Variability in person factors is not abnormality, but an opportunity to examine
and expand existing models. Further research work at the sites of potential role, social
and personal change has the potential to expand current models. In this thesis
immigration and bicultural identity was the site to explore questions of personality
variability. For too long personality has been investigated in stable contexts and static
conditions. Personality is a dynamic reflection of the contexts in which people work,
live and play and changes to these sites of experience can produce changes in the
person. While there is much more to do, some novel and interesting questions arise
when looking at personality variability through the lens of social identity perspective.
Identity Processes in Personality Variability

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doi:10.1016/j.jesp.2008.02.001

Appendix 1A. Written materials used in Study 1 and 2

Identification measures

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which *you agree or disagree with that statement*.

|   | 1. I have a lot in common with other members of the Australian community. | 2. I feel strong ties to other members of the Australian community. | 3. I find it difficult to form a bond with other members of the Australian community. | 4. I don’t feel a sense of being “connected” with other members of the Australian community. | 5. I often think about the fact that I am a member of the Australian community. | 6. In general, being a member of the Australian community is an important part of my self-image. | 7. The fact that I am a member of the Australian community rarely enters my mind. | 8. In general, I am glad to be an Australian. | 9. I often regret that I am an Australian. | 10. Generally, I feel good when I think about myself as a member of the Australian community. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Disagree Strongly | 2 | Disagree a little | 3 | Neither agree nor disagree | 4 | Agree a little | 5 | Agree strongly |

|   | 1. I have a lot in common with other Chinese. | 2. I feel strong ties to other Chinese. | 3. I find it difficult to form a bond with other Chinese. | 4. I don’t feel a sense of being “connected” with other Chinese. | 5. I often think about the fact that I am a Chinese. | 6. In general, being Chinese is an important part of my self-image. | 7. The fact that I am a Chinese rarely enters my mind. | 8. In general, I am glad to be a Chinese. | 9. I often regret that I am a Chinese. | 10. Generally, I feel good when I think about myself as a Chinese. |
IDENTITY PROCESSES IN PERSONALITY VARIABILITY

English Big Five Inventory
Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

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<td>Disagree a little</td>
<td>Neither agree nor disagree</td>
<td>Agree a little</td>
<td>Agree Strongly</td>
<td></td>
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</tbody>
</table>

I am someone who…

1. Is talkative
2. Tends to find fault with others
3. Does a thorough job
4. Is depressed, blue
5. Is original, comes up with new ideas
6. Is reserved
7. Is helpful and unselfish with others
8. Can be somewhat careless
9. Is relaxed, handles stress well
10. Is curious about many different things
11. Is full of energy
12. Starts quarrels with others
13. Is a reliable worker
14. Can be tense
15. Is ingenious, a deep thinker
16. Generates a lot of enthusiasm
17. Has a forgiving nature
18. Tends to be disorganized
19. Worries a lot
20. Has an active imagination
21. Tends to be quiet
22. Is generally trusting
23. Tends to be lazy
24. Is emotionally stable, not easily upset
25. Is inventive
26. Has an assertive personality
27. Can be cold and aloof
28. Perseveres until the task is finished
29. Can be moody
30. Values artistic, aesthetic experiences
31. Is sometimes shy, inhibited
32. Is considerate and kind to almost everyone
33. Does things efficiently
34. Remains calm in tense situations
35. Prefers work that is routine
36. Is outgoing, sociable
37. Is sometimes rude to others
38. Makes plans and follows through with them
39. Gets nervous easily
40. Likes to reflect, play with ideas
41. Has few artistic interests
42. Likes to cooperate with others
43. Is easily distracted
44. Is sophisticated in art, music, or literature
Chinese Big Five Inventory

这里有一些适合或不适合你的特征。例如，你是否同意你喜欢花时间和别人呆在一起？请在每个描述的旁边写下数字，指明你在多大程度上同意或不同意该描述。

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<td>有点不同意</td>
<td>无所谓</td>
<td>有点同意</td>
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我认为我自己……

1. 爱说话
2. 喜欢挑剔别人的毛病
3. 工作很周密
4. 压抑而忧郁
5. 具有独创性，会产生新点子
6. 含蓄的
7. 乐于助人，无私
8. 可能有些粗心
9. 放松的，可以很好应对压力
10. 对许多不同的事情感到好奇
11. 精力充沛
12. 经常与他人发生争吵
13. 是个可信赖的人
14. 可能会紧张
15. 具有独创性，思想深刻
16. 具有很大的热情
17. 天性宽以待人
18. 倾向于缺乏条理
19. 有很多忧虑
20. 想象力活跃
21. 比较安静
22. 大体上信任他人
23. 比较懒惰
24. 情绪稳定，不容易焦虑
25. 善于创造
26. 性格决断
27. 可能会冷淡孤僻
28. 坚持到任务完成
29. 可能会喜怒无常
30. 重视艺术、美学的经历
31. 有时羞怯，拘谨
32. 几乎对每个人都友善及体谅
33. 做事有效率
34. 在紧张情境中仍保持冷静
35. 喜欢从事常规性的工作，不喜欢不确定性
36. 外向，好交际
37. 有时对他人粗鲁
38. 制定计划并加以贯彻
39. 容易紧张
40. 喜欢反省、思考各种想法
41. 没有多少艺术兴趣
42. 喜欢与他人合作，而不是竞争
43. 容易分心
44. 精通美术、音乐和文学
Study 2 Bicultural Identity Integration measure

Cultural distance:

1. I am simply a Chinese who lives in Australia.

2. I keep Chinese and Australian cultures separate.

3. I feel Chinese Australian. (Reversed item)

4. I feel part of a combined culture. (Reversed item)

Cultural conflict:

5. I am conflicted between the Australian and Chinese ways of doing things.

6. I feel like someone moving between two cultures.

7. I feel caught between the Chinese and Australian cultures.

8. I don’t feel trapped between the Chinese and Australian cultures. (Reversed item)
Appendix 1B. Mindset pictures used in Study 2

Priming pictures in the Chinese condition
Priming pictures in the Australian condition
Appendix 2. Example identity inclusiveness measure used in Study 3
## Appendix 3A. Intercorrelation of the variables in the Grand sample

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Values: 687, 683, 687, 677, 677, 677, 0.001, 0.006, 0.007, 0.012, -0.040, -0.041, -0.042, -0.043, -0.035, -0.084, -0.072, -0.072, -0.078.
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E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness, HH = Honesty-Humility, Ethnic ID = ethnic identification.
### Appendix 3B. Study 4 Oversea sample LGM results

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Note: * $p < .05$, ** $p < .01$. 
Appendix 3C. Study 4 Asian sample Personality change over time

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### Appendix 3D. Study 4 Asian sample regression results

#### Time 1 identification and patriotism on time 4 personality

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