



The Influence of Individual Factors on Cognitive Process Variables within a Diverse Group Context

Zhanna Soldan (Corresponding author)

Curtin Business School, Curtin University of Technology

Kent Street, Bentley, 6102, Western Australia

Tel: 61-8-9266-3208 E-mail: Zhanna.Soldan@cbs.curtin.edu.au

Kyle Bowyer

Curtin Business School, Curtin University of Technology

Kent Street, Bentley, 6102, Western Australia

Tel: 61-8-9226-2846 E-mail: Kyle.Bowyer@cbs.curtin.edu.au

Abstract

The purpose of the study was to explore the relationship between individual factors (gender, language background (LB), nationality, English language proficiency (ELP), diverse group work experience (DGWE)) and cognitive processes (bias, stereotyping, anxiety & apprehension) and investigate the nature of any emerging differences, using the sample of 837 undergraduate students. Owing to the irregular distributions of the criterion variables we combined the sensitivity and versatility of parametric tests (t-tests, ANOVA) with the robustness of the equivalent non-parametric tests (Kruskall Wallis, Mann-Whitney). Strong conclusions were drawn where both groups of tests proved significant at the .01 level. The results revealed LB, nationality, ELP, and DGWE have a statistically significant impact on *bias*. LB, nationality, ELP and DGWE also appear to have an impact on *stereotyping* while *anxiety & apprehension* appear to be influenced by gender, LB, nationality, ELP and DGWE. The precise differences and implications for academics and researchers are discussed.

Keywords: Gender, Language, Nationality, Proficiency, Bias, Stereotyping, Anxiety, Apprehension

1. Introduction

During 2002-2003, almost 90 000 international students were enrolled in Australian universities (DIMA 2009a), with business schools having a majority of international students (McInnis 2003). By 2008, the number has increased up to 140 000 (DIMA 2009b), with the three largest groups being from India (34 574), China (33 189) and Malaysia (8 143). Subsequently, many universities are faced with the inherent challenges of educating such a diverse population of students (Engberg 2004). Although a developing body of literature reports that international students are trapped in a psychological climate marked by increasing alienation and difficulties in academic and social adjustment (Abe, Talbot & Geelhoed 1998; Nora & Cabrera 1996), with a few notable exceptions (e.g. Shaw 2004), little research has attempted to examine their experiences of cognitive processes such as perpetuation of biases and stereotyping (Goto & Takeuchi 2002) and the level of anxiety and apprehension (Greenland & Brown 1999) within a diverse group context. Many existing studies have typically focused on the United States, and, to a limited degree, on Australia, especially in the context of higher education.

Furthermore, the focus of social science literature has been on Blacks and Whites, to a lesser degree on other ethnic minority groups, including Asians (Hune 1995; Hwang & Goto 2008). On the other hand, due to small sample sizes, there has been a tendency to combine individuals from the Far East, Southeast Asia or the Indian subcontinent under one label, as a single homogeneous ethnic group, assuming that they share common characteristics in all circumstances thus, ignoring within-group differences (Laanan & Starobin 2004; Yoon & Portman 2004). Yes, Asians may have some sense of 'Asian-ness' in common, however, they differ from each other in ethnicity, culture, language, religion, experiences, and so forth. For example, although Chinese and Taiwanese students have similar backgrounds in terms of culture, language, race and geographic location, in the study of Yang et al. (1994), they demonstrated considerable differences in their meaningful relationships with US students. Similarly, Fritz, Chin and DeMarinis (2008) found no significant differences between international students as a single group and the US students with respect to anxiety;

however, a different pattern emerged when the international student population was divided into subgroups. Hence, examination of differences between the Asian groups is an important caveat warranting further investigation (Lew, Chang & Wang 2005).

Moreover, Kessler, Michelson and Williams (1999) predict that the cognitive processes are likely to occur due to a wide range of individual characteristics. However, the accuracy of this theory is unknown, as only a small number of studies have examined them in relation to characteristics other than gender, race/ethnicity, and class. Specifically, research has established that English language proficiency is a “bona fide problem in and of itself” for many students from non-English speaking backgrounds (NESB) studying in the United States (Swagler & Ellis 2003, p. 423; Burroughs 2008; Burroughs, Marie & McCroskey 2003; Woodrow 2006); however, only a small number of them empirically examined its influence on various cognitive processes. Furthermore, it remains unclear to what extent and in what ways such individual differences predict cognitive tendencies in diverse settings (Sommers, Warp & Mahoney 2008).

Therefore, the main purpose of the present study is to take a step toward filling this void. Specifically, to (1) explore whether the relationships between individual factors (gender, language background, nationality, English language proficiency, diverse group work experience) and cognitive processes (bias, stereotyping, anxiety & apprehension, mental effort) exist and (2) investigate the nature of any emerging differences between these groups.

2. Literature review

The most common theoretical underpinnings used to explain the possible biases and inaccuracies that often occur when members of diverse groups work together to achieve a common goal are social categorization theory (SCT) and its related social identity theory (SIT). According to SCT, people routinely classify others into a number of cognitive categories often based on observable differences such as gender, age, race or nationality rather than cognitively maintaining their individuality (Turner 1985; 1987). Through social categorization, others are perceived either as members of the same category as one’s self (in-group), as members of a different category (out-group) or unique individuals. However, people often rely on group-based impressions rather than person-based individuating qualities (Fiske, Link & Neuberg 1999).

Furthermore, according to SIT (Ashforth & Mael 1989; Tajfel 1978; 1982; Tajfel & Turner 1986), an individual’s social identity is constructed with reference to his/her membership in different social categories together with the value and emotional significance attached to that membership. As individuals are perceived or perceive themselves as belonging to social categories (e.g. ‘women’, ‘men’, ‘Asians’, ‘Blacks’, ‘Whites’, ‘young’, ‘old’) and social categories are associated with specific characteristics (e.g. aggressiveness, laziness, inarticulate, etc.), members incorporate such category traits as inherent features of their self-concept (Tajfel 1978). Once socially identified with a group, individuals accentuate perceptions of their similarities with in-group members while simultaneously accentuating their differences from out-group members, thereby creating ‘us’ versus ‘them’ dynamics within groups (Hogg & Abrams 1985).

SIT further assumes that individuals strive for a positively valued social identity. That is, they view in-group members as more attractive, trustworthy, honest and cooperative than members of the out-group (Ashforth & Mael 1989; Hogg 2001; Tajfel & Turner 1986). Such differentiation results in an in-group favoritism and out-group bias (Allen & Wilder 1975; Fiske 2004; Gaertner & Insko 2000; Hinkle & Schopler 1986).

Consistent with these theories, numerous studies have demonstrated that in diverse settings, individuals become aware of their visible demographic differences from one another and those differences are likely to trigger stereotyping and bias (Fiske & Taylor 1991; Shaw & Barrett-Power 1998). For instance, the evidence shows that majority groups are more likely to display bias than are minority groups (Oakes, Haslam & Turner 1994) and it has long been established that minority groups such as Asians (Delucci & Do 1996) and women (Sigelman & Welsh 1991; Gardener 1995) often appear to be the victims of such behaviors. For instance, Asian students in Pham and Dykstra’s (1994) study were dissatisfied with unwelcoming attitudes and reported incidents of stereotyping and discriminatory behaviors from other students. Similarly, Asian students in Ancis, Sedlacek and Mohr’s (2000) study reported disrespectful and unfair treatment from other students than did European students. Asian American men in the study of Kohatsu et al (2000) reported greater bias against them than did Asian American women. A greater level of bias or discrimination was reported among non-whites and men in the study of Kessler, Mickelson and Williams (1999) than whites and women. Research has also documented that limited English language skills of NESB students (Goto, Gee & Takeuchi 2002; Yeh 2002; Yeh et al. 2005) and the lack of knowledge, experience and contact with diverse members (Dalton 1991) are the other contributing factors of stereotyping and bias.

Furthermore, research in the field of cognitive psychology has demonstrated that when individuals encounter an environment that is unfamiliar in language, people, behavioral norms, etc. they experience a high level of anxiety and apprehension. Anxiety is found to be greater in intergroup than in interpersonal encounters (Gudykunst & Shapiro 1996). For instance, research has found ethnic differences in the experiences of anxiety, noting a greater level of social anxiety among Asian American students relative to European American students (Fritz, Chin & DeMarinis 2008; Lau et al. 2009) or White American students (Okazaki 1997; Okazaki et al. 2002). Similarly, Asians experience more anxiety

than Hispanics when interacting with Caucasians (Stephan & Stephan 1989). Tsui, Egan and O'Reilly (1992) also suggest that being different in race, nationality or gender is more anxiety-producing for traditionally predominant groups such as men and whites than for women and non-whites. Furthermore, research has also found that in situations where group members are forced to interact with one another in a language that is not their first language (English in our case) they are likely to experience a greater level of anxiety and apprehension as they would feel less competent in expressing themselves in that language (Burroughs 2008; Burroughs, Marie & McCroskey 2003; Woodrow 2006). Similarly, as individuals have different values and experiences they may feel unable to anticipate others' reactions (Bacharach & Bamberger 1992) and become too anxious and inhibited to make contributions to the decisions made by the group (Pelled, Ledford & Mohrman 1999). Hence, the level of fear or worry associated with the interaction with dissimilar others is likely to increase (Jackson, Stone & Alvarez 1992; Shaw & Barrett-Power 1998). Plant and Devine (2003), on the other hand, argue that individuals (e.g. Whites) who have a limited experience interacting with members of other ethnic groups (e.g. Blacks) are likely to experience a high level of anxiety and apprehension.

Therefore, based upon these theories and subsequent research findings we propose that some or all of the following individual characteristics (*gender, language background, nationality, English language proficiency, diversity group work experience*) will be the predictors of *bias, stereotyping, and anxiety & apprehension*.

3. Methodology

3.1 Setting, design and procedures

The hypotheses were tested on a sample of 837 onshore and offshore undergraduate business students working on a team project as part of a requirement of the Business Capstone 301 unit at Curtin University of Technology, Perth, Western Australia. The teams were deliberately formed to maximize the gender, race and age diversity. Teams were required to run a virtual business for 8 weeks of the 12-week semester by making a wide range of decisions, including which markets to emphasize, what research and development to conduct, how to market products, manage staff, facilities and a sales force, how to finance operations and manage production facilities, and many more. The aim of the simulation was to increase ROA, ROE, Cumulative Profit, Stock Price and Market Capitalization. The primary method of data collection was a survey questionnaire. During the 7th week, 975 questionnaires were distributed to all participants accompanied with a cover letter stating the purpose, the timeframe and the assurance of confidentiality.

3.2 Sample

As the participation in the study was voluntary, of the 975 questionnaires, 837 were returned, yielding 80.2% response rate. Table 1 depicts the number and percentage of respondents by gender, language background, English language proficiency, nationality, and diverse group work experience.

3.3 Measures

A total of 25 questions captured the variables of interest for the purpose of the study. The details are provided below.

3.3.1 Demographic information

The questionnaire contained items asking about the participants' gender, nationality, language background, English language proficiency, and diverse group work experience. 51 nationalities were represented in the sample; however, the focus of the study was on five groups only (1=Australian, 2=Chinese, 3=Indonesian, 4=Malaysian, 5=Singaporean). As the percentage of students with other nationalities such as Bangladesh, Croatia, France, Kenya and so forth was considerably low it was decided to exclude them from the analyses. Students were also asked to indicate their language background (1=ESB, 2=NESB). We also assessed 520 NESB students' self-reported English language proficiency by posing the question: "If your first language is not English how would you rate your English language proficiency?" followed by 3 choices: 1=low, 2=average and 3=high. We did not use their TOEFL scores because TOEFL assesses written rather than spoken English proficiency, which we believe plays a more important role in our context. A summary of all demographic data obtained in the study is provided in Table 1.

3.3.2 Bias

Bias was measured using five items adapted from James, Lovato and Cropanzano (1994) and the remaining 5 items from Shaw (2004). Based on the results of exploratory factor analysis (EFA), this study used only 8 items. In the previous study, the reliability for the scale was .90/.93 (Shaw 2004). In this study, the internal reliability was .90. The items describe student's self-observations, perceptions, emotional reactions, and behavioral dispositions toward other members of a group because of their differences (Dovidio et al 2004). Example items were: "I sometimes react to certain group members in a negative way or treat them unfairly simply because of their gender, race/ethnicity, age, etc." and "Prejudice exists in our project group".

3.3.3 Stereotyping

Stereotyping, referred to as the extent to which respondents use stereotypes to predict the behaviors and attitudes of other group members was measured using four items adapted from Shaw (2004). The Cronbach's alpha coefficient

of .89 for the scale was confirmed by Shaw (2004). In this study, the Cronbach's alpha coefficient was .96. An example item was: "When working with my group members, I often find myself using stereotypes to predict how they will behave in group meetings".

3.3.4 Anxiety and Apprehension

Anxiety & Apprehension referred to as a respondent's level of fear, uneasiness or worry associated with his/her interaction with other group members (Stephan & Stephan 1985) was measured with eight items adapted from Shaw (2004). As four of the items were negatively phrased, we reversed the scoring to make it consistent with the rest of the scale. According to Shaw (2004), the reliability for the original scale was .88/.89. In this study, the reliability was .88. An example item was: "I usually feel calm and relaxed when asked to express my feelings or opinions at group meetings".

Students responded to all items using a seven-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

4. Results and discussion

To test the hypothesis, Comparison of Means tests (t-tests) and Analysis of Variance (ANOVA) tests were performed. Having obtained significant results, the nature of the differences that emerged was examined using Tukey's HSD procedure. Owing to the irregular distributions of the criterion variables, we decided to combine the sensitivity and versatility of parametric tests (t-tests, ANOVA) with the robustness of the equivalent non-parametric tests (Kruskal Wallis, Mann-Whitney). However, unlike the Tukey's HSD which compensates for the increased risk of Type I error, the repeated use of the Mann-Whitney tests does not compensate for the increase in that risk. Hence, to minimize the cumulative risk of Type I errors, we adopted a stricter criterion of significance ($p < .01$) (Huberty & Morris 1989). The statistical results revealed some noteworthy patterns.

The results in Table 2 indicate that *gender* is a contributing factor to *anxiety & apprehension* ($t = -2.48$, $p < .01$), suggesting that females ($M = 2.42$) are more anxious and apprehensive when interacting with other members than males ($M = 2.23$). However, no significant differences were found between males and females in relation to *bias* and *stereotyping*.

As in Table 2, *language background* (ESB vs NESB) also found to have a significant association with *bias* ($t = -3.29$, $p < .01$), *stereotyping* ($t = -7.06$, $p < .01$), and *anxiety & apprehension* ($t = -4.91$, $p < .01$). These results suggest that (a) NESB students ($M = 1.90$) are more likely to exhibit bias toward other members because of their differences than ESB students ($M = 1.64$), (b) NESB students ($M = 3.22$) are more likely to use stereotypes to predict the behaviors and attitudes of other members than ESB students ($M = 2.45$), and (c) NESB students ($M = 2.47$) experience a greater level of anxiety and apprehension in interacting with other members than ESB students ($M = 2.10$).

The results in Table 3 indicate that *nationality* is an important predictor of *bias* ($F = 6.17$, $p < .01$), *stereotyping* ($F = 21.02$, $p < .01$) and *anxiety & apprehension* ($F = 7.24$, $p < .01$). The results also show that in relation to *bias*, of all the pair-wise differences the only significant difference lies between Australians ($M = 1.59$) and Chinese ($M = 2.21$), with Chinese affirming higher levels of bias than Australians. In relation to *stereotyping*, significant differences were found between Australians on one hand and Chinese, Indonesians, Malaysians and Singaporeans on the other. The widest difference was between Australians ($M = 2.13$) at the lowest end and Chinese ($M = 3.58$) at the highest end. It appears that the Asian culture has slightly greater tendency towards the use of stereotypes to predict the behaviors and attitudes of other group members. In relation to *anxiety & apprehension*, the results revealed distinct differences between Australians and Singaporeans ($M = 2.10$ and 2.09 , respectively) on one hand and Chinese, Indonesians and Malaysians ($M = 2.47$, 2.61 and 2.59 , respectively) on the other. The widest difference was between Indonesians ($M = 2.61$) at the lowest end and Singaporeans ($M = 2.09$) at the highest end.

As in Table 4, *English language proficiency* (ELP) appears to be related to *bias* ($F = 8.72$, $p < .01$), *stereotyping* ($F = 11.02$, $p < .01$) and *anxiety & apprehension* ($F = 17.65$, $p < .01$). Although ELP is significantly associated with *bias* the nature of the association is not entirely clear as the emerged difference between the two groups appears to be marginal. However, the tendency to engage in *stereotyping* and the level of *anxiety & apprehension* appear to decrease with ELP.

The results in Table 4 also revealed statistically significant relationships between *diverse group work experience* (DGWE) and *bias* ($F = 8.59$, $p < .01$), *stereotyping* ($F = 8.75$, $p < .01$) and *anxiety & apprehension* ($F = 10.59$, $p < .01$). Although there appears to be some relationship between DGWE and *stereotyping* the nature of the relationship is not entirely clear as the emerged difference between the two groups appears to be marginal. However, the tendency to exhibit *bias* and the feeling of *anxiety and apprehension* appear to decrease with DGWE.

In summary, the influence of individual factors (*gender*, *language background*, *nationality*, *ELP*, *DGWE*) on cognitive process variables (*bias*, *stereotyping*, *anxiety & apprehension*) was examined. Our results provided a considerable amount of support for our hypothesis. However, we did not find that *gender* is a significant predictor of *bias* and *stereotyping*. The lack of gender differences for *bias* and *stereotyping* may be attributable to the possibility that negative

gender stereotypes are fading and females and males are becoming more positive in their perceptions of each other (Dovidio & Gaertner 1991), hence resulting in a reduction of bias and the amelioration of harmonious intergroup relations (Devine & Elliot 1995).

We also observed statistically significant differences within each cognitive process (*bias, stereotyping, anxiety & apprehension*) across different gender, language background, nationality, ELP, DGWE groups. However, the observed differences appeared to be of relatively low practical importance as all groups showed a strong tendency towards the low end of the scale, indicating an overall low level of *bias, stereotyping* and *anxiety & apprehension*. Low levels of *bias, stereotyping* and *anxiety & apprehension* could potentially be due to the sample used, as 3rd year undergraduate students, over the duration of their course, have been involved in various group projects and had a greater exposure to, and contact with, dissimilar others compared with 1st year students. Furthermore, various efforts such as diversity workshops provided by Curtin Business School might also have accounted for low levels of *bias, stereotyping* and *anxiety & apprehension*.

5. Conclusions and implications

These findings have both theoretical and practical implications. First, we examined the relationship between individual factors and cognitive process variables using undergraduate students as little attention has been devoted to their experiences of cognitive processes (Goto & Takeuchi 2002; Greenland & Brown 1999), particularly in an Australian context. We substantiated the findings of previous studies mostly conducted in the United States that *gender* is a predictor of *anxiety & apprehension* (Tsui, Egan & O'Reilly 1992) and *nationality* is a predictor of *bias* (Ancis, Sedlacek & Mohr 2000; Kessler, Michelson & Williams 1999; Kohatsu et al. 2000; Pham & Dykstra 1994), *stereotyping* (Pham & Dykstra 1994) and *anxiety & apprehension* (Lau et al. 2009; Okazaki 1997; Okazaki et al. 2002). However, we found that the relationships between *gender* and *bias*, and *gender* and *stereotyping* were not statistically significant. Additionally, we extended the existing studies by examining the effect of *language background, ELP* and *DGWE* on *bias, stereotyping, and anxiety & apprehension* and established that in the context of higher education, the effect is significant at ($p < 0.01$) level, thereby substantiating Kessler, Michelson and Williams' (1999) proposition that cognitive processes are due to a wide range of individual characteristics not just gender, race/ethnicity, or class. Furthermore, rather than combining the responses of all Asian groups and portraying them as a single homogeneous ethnic group (Laanan & Starobin 2004; Yoon & Portman 2004), we broke the responses of Asian groups into four nationality groups (Chinese, Indonesians, Malaysians, Singaporeans) and found statistically significant differences between these groups in relation to cognitive process variables. These differences suggest that Asians are diverse and cannot be reduced to a homogeneous whole with respect to cognitive processes.

Although the overall level of *bias, stereotyping, and anxiety & apprehension* is low, the mean differences that emerged between different gender, language background, nationality, ELP, DGWE groups suggest that education administrators or academics should continue providing interactive diversity workshops, training interventions, or multicultural courses designed to increase students' sensitivity to individual differences, as such efforts give students the opportunity to interact with members of other groups and have potential to modify their attitudes and beliefs and, hence, result in reduced *stereotyping, bias* (Astin 1993; Chang 2002; Milem 1994; Rudman, Ashmore & Gary 2001) and *anxiety & apprehension* (Islam & Hewstone 1993; Stephan & Stephan 1985; 1989).

6. Limitations and directions for future research

Although this study makes a number of important contributions, there are obvious limitations to the study, which can be improved upon by future research. Specifically:

- This study was purely quantitative. Further research using qualitative methodologies might more comprehensively explain the quantitative patterns observed.
- This study considered a limited number of factors such as *gender, language background, nationality, ELP* and *DGWE*. Exploring other characteristics such as *small group management experience, managerial/supervisory experience, grade points, grade expectations, full-time work experience, majors*, etc. as potential predictors of cognitive processes could be fruitful to explore in future studies particularly as researchers propose that cognitive processes are likely to occur due to a wide range of individual characteristics (Kessler, Michelson & Williams 1999).
- As the percentage of students with other nationalities was relatively low, they were excluded from the analyses. A further sample stratified according to ethnic or national criteria would enable its effects to be more thoroughly explored.
- As the data was collected from a single tertiary institution the generalizability of the findings is limited. Thus, it would be worthwhile for future studies to validate the findings of our study in other higher educational settings.

Acknowledgement

We thank Professor Ben Shaw (Bond University, Queensland, Australia) for providing us with comprehensive study measures. This study would not have been possible without Carl Jacob's (Curtin University of Technology, Perth, WA) statistical wisdom and guidance and the support and cooperation of Business Capstone tutors.

References

- Abe, J., Talbot, D.M., & Geelhoed, R.J. (1998). Effects of a peer program on international student adjustment. *Journal of College Student Development*, 39, 539-547.
- Allen, V., & Wilder, D. (1975). Categorization, belief similarity, and intergroup discrimination. *Journal of Personality and Social Psychology*, 32, 971-977.
- Ancis, J.R., Sedlacek, W.E., & Mohr, J.J. (2000). Student perceptions of campus cultural climate by race. *Journal of Counseling and Development*, 78, 180-186.
- Ashforth, B.E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review*, 14(1), 20-39.
- Astin, A.W. (1993). Diversity and multiculturalism on the campus. How are students affected?. *Change*, 23, 44-49.
- Bacharach, S.B., & Bamberger, P.A. (1992). Alternative approaches to the examination of demography in organizations. In P. Tolbert & S.B. Bacharach (Eds.), *Research in the sociology of organizations* (pp. 85-111). Greenwich: JAI Press.
- Burroughs, N.F. (2008). Raising the question 10 non-native speakers of English: What more can we do?. *Communication Education*, 57(2), 289-295.
- Burroughs, N.F., Marie, V., & McCroskey, J.C. (2003). Relationship of self-perceived communication competence and communication apprehension with willingness to communicate: A comparison with first and second languages in Micronesia. *Communication Research Reports*, 20, 230-239.
- Cabrera, A.F., & Nora, A. (1994). College student perceptions of prejudice and discrimination and their feelings of alienation: A construct validation approach. *Review of Education/Pedagogy/Cultural Studies*, 16(3-4), 387-409.
- Chang, M.J. (2002). The Impact of an undergraduate diversity course requirement on students' racial views and attitudes. *Journal of General Education*, 51(1), 21-42.
- Dalton, J.C. (1991). Racial and ethnic backlash in college peer culture. In J.C. Dalton (Eds.), *Racism on campus: confronting racial bias through peer interventions* (pp. 3-12), San Francisco: Jossey-Bass.
- Delucchi, M., & Do, H.D. (1996). The model minority myth and perceptions of Asian-Americans as victims of racial harassment. *College Student Journal*, 30(3), 411-414.
- Department of Immigration and Multicultural Affairs DIMA, (2009a). *Combined onshore and offshore grants for 2002-2003 program year*. [Online] Available: <http://www.immi.gov.au/media/statistics/study/> (February 14, 2009)
- Department of Immigration and Multicultural Affairs DIMA, (2009b). *Offshore and onshore grants for 2007-2008 (PY)*. [Online] Available: <http://www.immi.gov.au/media/statistics/study/> (February 14, 2009)
- Devine, P.G., & Elliot, A.J. (1995). Are racial stereotypes really fading? The Princeton Trilogy revisited. *Personality and Social Psychology Bulletin*, 21, 1139-1150.
- Dovidio, J.F., & Gaertner, S.L. (1991). Changes in the expression of racial prejudice. In H. Knopke, J. Norrell, & R. Rogers (Eds.), *Opening doors: An appraisal of race relations in contemporary America*. Tuscaloosa: University of Alabama Press.
- Dovidio, J.F., Gaertner, S.L., Stewart, T.L., Esses, V.M., Vergert, M., & Hodson, G. (2004). From interventions to outcome: Processes in the reduction of bias. In W.G. Stephan, & W.P. Vogt (Eds.), *Education programs for improving intergroup relations* (pp. 243-265). New York: Teachers College Press.
- Engberg, M.E. (2004). Improving intergroup relations in higher education: A critical examination of the influence of educational interventions on racial bias. *Review of Educational Research*, 74(4), 473-525.
- Fiske, S. (2004). *Social beings: A core motives approach to social psychology*. Hoboken: John Wiley & Sons.
- Fiske, S.T., & Taylor, S.E. (1991). *Social cognition*. New York: McGraw-Hill.
- Fritz, M.V., Chin, D., & DeMarinis, V. (2008). Stressors, anxiety, acculturation and adjustment among international and North American students. *International Journal of Intercultural Relations*, 32, 244-258.
- Gaertner, L., & Insko, C. (2000). Intergroup discrimination in the minimal group paradigm: categorization, reciprocation, or fear? *Journal of Personality and Social Psychology*, 79(1), 77-94.
- Gardener, C.B. (1995). *Passing by: gender and public harassment*. Berkeley: University of California Press.
- Goto, S., Gee, G., & Takeuchi, D. (2002). Strangers still? The experience of PRD among Chinese Americans. *Journal of Community Psychology*, 30, 211-224.
- Greenland, K., & Brown, R. (1999). Categorization and intergroup anxiety in contact between British and Japanese nationals. *European Journal of Social Psychology*, 29, 503-521.

- Gudykunst, W.B., & Shapiro, R. (1996). Communication in everyday interpersonal and intergroup encounters. *International Journal of Intercultural Relations*, 20, 19-45.
- Hinkle, S., & Schopler, J. (1986). Bias in the evaluation of in-group and out-group performance. In S. Worchel, & W.G. Austin (Eds.), *Psychology of intergroup relations* (pp. 196-212), Chicago: Nelson-Hall.
- Hogg, M. (2001). A Social identity theory for leadership. *Personality and Social Psychology Review*, 5, 184-200.
- Hogg, M.A., & Abrams, D. (1985). *Social identification*. New York: Chapman & Hall.
- Huberty, C.J., & Morris, J.D. (1989). Multivariate analysis versus multiple univariate Analyses. *Psychological Bulletin*, 105, 302-308.
- Hune, S. (1995). Rethinking race: Paradigms and policy formation. *Amerasia Journal*, 21(1/2), 29-40.
- Hwang, W.-C., & Goto, S. (2008). The impact of perceived racial discrimination on the mental health of Asian American and Latino college students. *Cultural Diversity & Ethnic Minority Psychology*, 14(4), 326-335.
- Islam, M.R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude. *Personality and Social Psychology Bulletin*, 19, 700-710.
- Jackson, S.E., Stone, V.K., & Alvarez, E.B. (1992). Socialization amidst diversity: The impact of demographics on work team oldtimers and newcomers. In B.M. Staw, & L.L. Cummings (Eds.), *Research organizational behavior* (pp. 45-109), Greenwich: JAI Press.
- James, K., Lovato, C., & Cropanzano, R. (1994). Correlational and known-group comparison validation of a workplace prejudice/discrimination inventory. *Journal of Applied Social Psychology*, 24(4), 1573-1592.
- Kessler, R., Michelson, K., & Williams, D. (1999). The prevalence, distribution, and mental health correlated of perceived discrimination in the United States. *Journal of Health & Social Behavior*, 40(3), 208-230.
- Kohatsu, E.L., Dulay, M., Lam, C., Concepcion, W., Perez, P., Lopez, C., & Euler, J. (2000). Using racial identity theory to explore racial mistrust and interracial contact among Asian Americans. *Journal of Counseling and Development*, 78, 337-342.
- Laanan, F.S., & Starobin, S.S. (2004). Defining Asian American and Pacific Islander-serving institutions. In B.V. Laden (Eds.), *Serving minority populations: New directions for community college* (pp. 49-59). San Francisco: Jossey-Bass.
- Lau, A.S., Fung, J., Wang, S.W., & Kang, S.M. (2009). Explaining elevated social anxiety among Asian Americans: Emotional attunement and a cultural double bind. *Cultural Diversity and Ethnic Minority Psychology*, 15, 77-85.
- Lew, J.W., Chang, J.C., & Wang W.W. (2005). UCLA Community College Review: The Overlooked Minority: Asian Pacific American Students at Community Colleges. *Community College Review*, 33(2), 64-85.
- McInnis, C. (2003). From marginal to mainstream strategies: Responding to student diversity in Australian universities. *European Journal of Education*, 38(4), 387-400.
- Milem, J.F. (1994). College, students, and racial understanding. *Thought and Action*, 9(2), 51-92.
- Nora, A., & Cabrera, A.F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education*, 67(2), 119-148.
- Oakes, P.J., Haslam, S.A., & Turner, J.C. (1994). *Stereotyping and social reality*. Cambridge: Blackwell.
- Okazaki, S. (1997). Source of ethnic differences between Asian American and White American college students on measures of depression and social anxiety. *Journal of Abnormal Psychology*, 106, 52-60.
- Okazaki, S., Liu, J.F., Longworth, S.L., & Minn, J.Y. (2002). Asian American-White American differences in expressions of social anxiety: A replication and extension. *Cultural Diversity and Ethnic Minority Psychology*, 8(3), 234-247.
- Pelled, L.H., Ledford, G.E., & Mohrman, S.A. (1999). Demographic dissimilarity and workplace inclusion. *Journal of Management Studies*, 36(7), 1013-1031.
- Pham, N., & Dykstra, P. (1996). *A positive learning environment is everybody's business: Asian Pacific American students speak*. Santa Ana: Rancho Santiago Community College District.
- Plant, E.A., & Devine, P.G. (2003). The antecedents and implications of interracial anxiety. *Personality and Social Psychology Bulletin*, 29, 790-801.
- Rudman, L.A., Ashmore, R.D., & Gary, M.L. (2001). Unlearning automatic biases: The malleability of implicit prejudice and stereotypes. *Journal of Personality and Social Psychology*, 81(5), 856-868.

- Shaw, J.B. (2004). A Fair Go for All? The impact of intragroup diversity and diversity-management skills on student experiences and outcomes in team-based class projects. *Journal of Management Education*, 28(2), 139-169.
- Shaw, J.B., & Barrett-Power, E. (1998). The effects of diversity on small work group processes and performance. *Human Relations*, 51(10), 1307-1325.
- Sigelman, L., & Welch, S. (1991). *Black Americans' views of racial inequality: The dream deferred*. Cambridge: Harvard University Press.
- Sommers, S.R., Warp, L.S., & Mahoney, C.C. (2008). Cognitive effects of racial diversity: White individuals' information processing in heterogeneous groups. *Journal of Experimental Social Psychology*, 44, 1129-1136.
- Stephan, W.G., & Stephan, C.W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41, 157-175.
- Stephan, W.G., & Stephan, C.W. (1989). Antecedents of intergroup anxiety in Asian-American and Hispanic-Americans. *International Journal of Intercultural Relations*, 13, 203-219.
- Swagler, M.A., & Ellis, M.V. (2003). Crossing the distance: adjustment of Taiwanese graduate students in the United States. *Journal of Counseling Psychology*, 50(4), 420-437.
- Tajfel, H. (1982). *Social identity and intergroup relations*. Cambridge: Cambridge University Press.
- Tajfel, H. (1978). The achievement of group differentiation. In H. Tajfel (Eds.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 547-579). London: Academic Press.
- Tajfel, H., & Turner, J.C. (1986). The Social identity theory of intergroup behaviour. In S. Worchel, & W.G. Austin (Eds.), *Psychology of intergroup relations*. Chicago: Nelson Hall.
- Tsui, A.S., Egan, T., and O'Reilly, C.A. (1992). Being different: Relational demography and organizational attachment. *Administrative Science Quarterly*, 37, 549-79.
- Turner, J.C. (1985). Social categorization and the self-concept: A self-cognitive theory of group behavior. In E.J. Lawler (Eds.), *Advances in Group Processes: Theory and Research*, Greenwich: JAI Press.
- Turner, J.C. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford: Blackwell.
- Woodrow, L. (2006). Anxiety and speaking English as a second language. *RELC Journal*, 37, 308-328.
- Yang, B., Teraoka, M., Eichenfield, G.A., Audas, M.C. (1994). Meaningful relationships between Asian international and U.S. college students: A descriptive study. *College Student Journal*, 28, 108-115.
- Yeh, T.L. (2002). Asian American college students who are educationally at risk. In M.K. McEwen, C.M. Kodama, A.N. Alvarez, S. Lee, & C.T. Liang (Eds.), *Working with Asian American college students* (pp. 61-72). San Francisco: Jossey-Bass.
- Yeh, C.J., Ma, P-W., Madan, A., Hunter, C.D., Jung, S., & Kim, A. (2005). The cultural negotiations of Korean immigrant youth. *Journal of Counseling and Development*, 83, 172-181.
- Yoon, E., & Portman, T.A. (2004). Critical issues of literature on counseling international students. *Journal of Multicultural Counseling and Development*, 32, 33-44.

Table 1. Demographic data of participants

	Frequency	Percentage
Gender (n=837):		
• Male	400	47.8
• Female	437	52.2
Language Background (n=837):		
• English Speaking Background (ESB)	317	37.9
• Non-English Speaking Background (NESB)	520	62.1
English Language Proficiency (n=520):		
• Low	24	2.9
• Average	335	40.0
• High	161	19.2
Nationality (n=650):		
• Australian	162	19.4
• Chinese	150	17.9
• Indonesian	62	7.4
• Malaysian	169	20.2
• Singaporean	107	12.8
Diverse Group Work Experience :		
• A little	137	16.4
• Some	354	42.3
• A lot	346	41.3
Total:	837	100.0

Table 2. The relationships between gender, language background and cognitive process variables: comparison of mean scores

Cognitive Process Variables	Gender		t-test t	Mann-Whitney Z
	Male (N=400)	Female (N=437)		
Bias	1.80	1.80	-.059	-.335
Stereotyping	2.93	2.92	.009	-.019
Anxiety & Apprehension	2.23	2.42	-2.485**	-2.848**
Cognitive Process Variables	Language Background		t-tests	Mann-Whitney Z
	ESB (N=317)	NESB (N=520)		
Bias	1.64	1.90	-3.298**	-4.215**
Stereotyping	2.45	3.22	-7.068**	-6.720**
Anxiety & Apprehension	2.10	2.47	-4.911**	-5.279**

Note 1. Independent sample t-tests & Mann-Whitney tests **p<0.01

Table 3. The relationship between nationality and cognitive process variables: comparison of mean scores

Variables	Australian	Chinese	Indonesian	Malaysian	Singaporean	ANOVA	Kruskal Wallis	Mann-Whitney
	(N=162)	(N=150)	(N=62)	(N=169)	(N=107)	F	X ²	Z
	1	2	3	4	5			
Bias	1.59	2.21	1.81	1.92	1.73	6.170**	26.270**	1<2=-4.903**
Stereotyping	2.13	3.58	3.38	3.08	3.16	21.024**	71.432**	1<2=-7.745**1<3=-5.257** 1<4=-5.604**1<5=-5.176**
Anxiety & Apprehension	2.10	2.47	2.61	2.59	2.09	7.240**	30.868**	1<2=-3.866**1<3=-3.178** 1<4=-3.890**2>5=-3.442** 3>5=-3.050**4>5=-3.497**

Note 1. **the mean difference is significant at the .01 level

Table 4. The relationships between ELP, DGWE, SGME and cognitive process variables: comparison of mean scores

Variables	English Language Proficiency (ELP)			ANOVA	Kruskal Wallis	Mann-Whitney
	Low	Average	High	F	X ²	Z
	(N=24)	(N=335)	(N=161)			
	1	2	3			
Bias	1.92	2.05	1.59	8.724**	18.436**	2>3=-4.127**
Stereotyping	3.68	3.41	2.75	11.021**	18.915**	2>3=-4.147**
Anxiety & Apprehension	3.28	2.58	2.12	17.654**	37.309**	1>2=-3.168**1>3=-4.799** 2>3=-4.825**
	Diverse Group Work Experience (DGWE)					
	A Little	Some	A Lot			
	(N=137)	(N=354)	(N=346)			
	1	2	3			
Bias	1.92	1.94	1.61	8.591**	23.476**	1>3=-2.875**2>3=-4.722**
Stereotyping	3.30	3.02	2.68	8.757**	16.500**	1>3=-3.783**
Anxiety & Apprehension	2.56	2.43	2.13	10.596**	24.664**	1>3=-4.135**2>3=-4.103**

Note 1. **the mean difference is significant at the .01 level