

Culture Mixing, Cultural Identification and Acculturation in Hong Kong:
Effects of Hong Kong-Mainland Culture Mixing on Hong Kong Residents and Mainland
Chinese Sojourners

by

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Statement of Originality

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Abstract

Research on culture mixing has revealed that a fundamental phenomenon of exclusionary responses exists with regards to mixed cultural symbols that combine ingroup and outgroup representations. This finding is supported among various ethnic groups across different multicultural societies (Cheon, Christopoulos, & Hong, 2016); however, the mixing of sub-regional cultures and its impact on acculturation process has not yet received sufficient research attention. Moreover, how identification with the given cultures is connected to the reactions towards culture mixing has not been thoroughly investigated. Recent research has proposed two methods of managing cultural identities with distinct functions among immigrants (Ward, Ng, Szabo, Qumseya, & Bhowon, 2018), namely the hybrid identity style (HIS) and the alternating identity style (AIS). Adopting these two styles, we identified two pairs of cultural identities for majority and minority groups in Hong Kong and explored their role and impact on reactions towards Hong Kong-Mainland culture mixing.

The current project includes three component studies. In Study 1, the pattern of disgust towards culture mixing in the Hong Kong-Mainland context was replicated in both Hong Kong local and Mainland Chinese samples, and its negative association with HIS was identified. In Study 2, through two two-time-point longitudinal studies among Mainland Chinese sojourners, the negative cross-lagged impact of disgust towards culture mixing on satisfaction with life was observed in addition to the potential negative cross-lagged impact of HIS and the positive cross-lagged impact of AIS on disgust. In Study 3, using different multicultural ideologies, three separate studies attempted to develop a prime for Hong Kong local residents that reduced disgust towards Hong Kong-Mainland culture mixing. Multiculturalism priming was found to indirectly reduce disgust, whereas assimilation priming indirectly increased disgust through HIS. These results suggest that multicultural identities are crucial to understanding culture mixing, especially in societies like Hong Kong,

where intergroup conflicts and cultural identity conflicts are closely related to both majority and minority groups.

Keywords: Culture mixing, Disgust, Cultural Identity, Acculturation,
Multiculturalism



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Chapter 1: Introduction

Informed by the intergroup conflict between Hong Kong and Mainland Chinese peoples, this project attempts to investigate how the perception of culture mixing is related to different social identities, intergroup attitudes and adaptations among both local residents and Mainland Chinese people in Hong Kong.

As globalization continues to bring together cultures from different parts of the world, various aspects of culture such as languages and lifestyles are constantly bumping into, clashing against, and fusing with each other. Within the resulting mixed cultural environments, people experience the mixture of two or more sets of cultural symbols in daily life (Harush, Lisak, & Erez, 2016). Among many, Hong Kong is a typical example of a culturally mixed society, originally formed from the encounter between Western and ethnic Chinese cultures (Morris, Chiu, & Liu, 2015). As a former British colony, Hong Kong retains significant institutional and cultural differences from Mainland China, and local Hong Kong residents typically hold more Westernized and diverse values (R. Ma, 2009). A substantial number of Western cultural elements brought in through British colonial rule mixed with the heritage of the majority of the local population, resulting in a unique culture formed among Hong Kong society through the fusion of the two original cultures over more than one hundred fifty years. Since the 1997 handover, Hong Kong has been a special administrative region of the People's Republic of China for over twenty years. With the establishment of more convenient immigration channels, Mainland Chinese immigrants have contributed significantly to population growth in the city; the population of non-local residents arriving from Mainland China rose from 86,062 in 2006 to 121,775 in 2016 (Census and Statistics Department, 2016). As a consequence, these immigrants brought with them an at once familiar, but also new, "Chinese style" that differs from stereotypical Chinese traditions into

the daily life of Hongkongers, creating a new wave of mixing between a mature, fused, semi-Western local culture and a formerly isolated, mysterious, and distinctive socialist culture.

Since the handover, many local Hong Kong residents have begun to identify themselves as “Hongkongers” in contrast to “Mainlanders”, rather than as “Chinese” as opposed to “Westerners” (Lam, Lau, Chiu, Hong, & Peng, 1999). This back-and-forth in Hong Kong local attitudes towards Mainland China is closely associated with political events, which create challenges for locals in dealing with Chinese identities (A. Fung, 2004). As Hong Kong becomes more integrated into the economic and political systems of Mainland China, hostility and intergroup conflicts against Mainland Chinese in the city is rapidly growing (N. Ma, 2015), with a substantial amount of local research reporting negative attitudes and biases towards Mainland Chinese (Hong et al., 2006; Lam, Chiu, Lau, Chan, & Yim, 2006; Chou, 2012; I. F. S. Ng, Chou, & Wong, 2017). Having to live in and adapt to such a hostile social context, new Mainland Chinese immigrants reported being discriminated and having a low quality of life (C. Leung, Leung, & Chan, 2007; Hue, 2008; R. Ma, 2009; I. F. S. Ng, Lee, Wong, & Chou, 2015). Mainland sojourners are also facing similar challenges; as the number of Mainland Chinese students seeking higher education in Hong Kong steadily increases each year, many of them face difficulties regarding linguistic adaptation (Gu, 2011), social interactions, conflicts in political ideologies, and prejudices from the host society (Yu & Zhang, 2016).

The intergroup relationship between Mainland Chinese and local Hong Kong residents is unique: on the one hand, Mainland Chinese can be treated as a minority group in the city as other ethnic minority immigrant communities are; on the other hand, Hong Kong locals can also be treated as the minority when regarded as part of China, in contrast to the Mainland Chinese that greatly outnumber them. Such a relationship is not only discriminatory for Mainland Chinese immigrants, but also makes Hong Kong locals feel

threatened to assimilate into Mainland China. It is thus important not only to understand how Mainland Chinese immigrants and sojourners adapt to life in Hong Kong, but also to study how local residents perceive, cope with, and adapt to contemporary Hong Kong society.

This project consists of three major studies. In Study 1, through sampling both Hong Kong and Mainland Chinese university students, core findings of a previous study on culture mixing were replicated. In particular, a similar aversive reaction towards culture mixing between Hong Kong and Mainland China was observed, prompting investigations into its associations with cultural identities and acculturation attitudes. In Study 2, through conducting two dual time-point longitudinal studies, the degree of success to which integrating cultural identities reduced disgust towards culture mixing among Mainland Chinese university students in the acculturation context was investigated. Lastly in Study 3, two experiments among Hong Kong university students were conducted to demonstrate how the two different ideologies of multiculturalism and assimilation either promoted or suppressed the strength of the Chinese identity, multicultural identity styles, and ultimately their perceptions of culture mixing.

In summary, the purpose of this project is to investigate the role and impact of culture mixing in Hong Kong context. By taking the perspectives of both local residents and Mainland Chinese in Hong Kong, and through incorporating typical measures of culture mixing, multicultural identities, and acculturation; it is hoped that this project may provide some insights into improving intergroup relations and regional policy in the city.

Chapter 2: Literature Review

Overview

Is a disgusted response towards culture mixing also an applicable characterization of the current situation in Hong Kong, especially regarding the mixture of local and Mainland Chinese cultures? How does this phenomenon associate with multicultural identities? How does this phenomenon affect the acculturation process among immigrants? And can the aversive reaction towards culture mixing be reduced? To answer these questions, this project began with a pilot study that explored the relations of disgust towards culture mixing and cultural identities in the Hong Kong-Mainland context, subsequently being extended to investigate the impact of these phenomena among Mainland Chinese and local residents in Hong Kong.

To gain a deeper understanding of these relationships, the relevant concepts will be discussed in the following sequence. This review first begins by briefly introducing the concept of culture mixing and how it relates to disgust. Thereafter, the acculturation process and multicultural identities in Hong Kong context are briefly reviewed in order to identify the key features characterizing the two closely related yet distinct identities of “Hongkonger” and “Chinese,” introduce how the bicultural self and multicultural identity styles are perceived in contemporary society, and discuss how these identities function according to previous research under the scope of self-categorization theory. For the sake of comparison, the role of these identities will also be reviewed within the frameworks of superordinate identity and national identity. Finally, through identifying research gaps, the unique sub-regional culture mixing and intergroup relations between Hong Kong and Mainland China, as well as how these phenomena relate to the management of the acculturation process and multicultural identities, will be discussed.

Culture Mixing

Exclusionary responses toward culture mixing. What is culture mixing and how do people react to it? In a multicultural society, it is an everyday phenomenon around the members of that society, referring to different cultural symbols coexisting together, or even combining and fusing together. The reactions to culture mixing are puzzling: investigations on the phenomenon have shown that people demonstrate either integrative or exclusionary responses towards it, and its consequences are a blend of both positive and negative outcomes (Chiu, Mallorie, Keh, & Law, 2009; Hao, Li, Peng, Peng, & Torelli, 2016). Current psychological research on culture mixing emerged from polyculturalism, which suggests that the interaction between individuals and cultures is a dynamic process rather than a static one, and that individuals internalize multiple cultures in various strengths and forms (Morris et al., 2015). Culture mixing is therefore an evolving process that closely relates to cultural environment; happenings in a given multicultural society shape how the resulting mixed culture is perceived. To address it in the context of intercultural contact and intergroup relations, and in line with recent research, culture mixing is defined here as the combination, mixture, or fusion of an ingroup cultural symbol with an outgroup cultural symbol (Hao et al., 2016).

In many cases, conservative communities demonstrate defensive, “xenophobic” reactions when foreign culture is introduced. Various instances of local communities defending their heritage culture against foreign brands can be found worldwide, such as Mexicans protesting against Wal-Mart in 2004 and Chinese rejecting Starbucks in 2007 (Morris et al., 2015). On the Internet, an ordinary Twitter photo of an 18-year-old American high school girl wearing a *cheongsam* (a Chinese traditional dress also known as *qipao* in Mandarin) triggered a debate on “cultural appropriation” in early 2018 (Yan, 2018); earlier this year, an advertisement portraying a Chinese woman eating Italian food enraged Chinese

Internet users, who boycotted the brand and prompted an apology from the company (BBC, 2019). Similar reactions have also been found among Hong Kong communities. In 2016, local residents were outraged when a local TV channel displayed simplified Chinese characters instead of the traditional Chinese script (BBC, 2016a), as well as when a movie poster photoshopped a Shanghai landmark building on top of a Hong Kong skyline (BBC, 2016b). Furthermore, local groups and organizations have long resisted the use of Mandarin for years (Coca, 2018).

Research on culture mixing has examined both its positive and negative outcomes. Depending on the circumstances of their studies, researchers have attested to both the positive and negative effects of culture mixing. How individuals maintain a balance between identifying with local and global culture may result in different responses towards culture mixing, ranging from inclusive to exclusive behaviors (Harush et al., 2016).

For example, exposure to culture mixing has been found to improve team communication (Shokef & Erez, 2015) and boost creativity (A. K. Leung, Maddux, Galinsky, & Chiu, 2008; Chen et al., 2016) in the workplace. Some people also tend to favor culture mixing; for example, endorsing polyculturalism typically predicts a preference for culture mixing (Cho, Morris, Slepian, & Tadmor, 2017), and individuals who endorse autonomy values often demonstrate favorable attitudes towards culturally mixed brand names (Keh, Torelli, Chiu, & Hao, 2016).

On the other hand, negative reactions towards culture mixing are commonly seen when such a mixture is perceived to be involving the ingroup culture with an outgroup culture. For instance, both Americans and Chinese gave negative responses when cultural symbols from their heritage were mixed with foreign symbols (Yang, Chen, Xu, Preston, & Chiu, 2016). In another case of living in a mixed cultural environment, Hui Chinese Muslims reported feeling sad, angry, and disgusted when they saw another Muslim consuming a non-

halal meal (Wu, Yang, & Chiu, 2014). Both examples suggest that when a cultural product is framed as invasive such that “foreign culture modifies home culture”, it was perceived less favorably than situations where “home culture modifies foreign culture” (Cui, Xu, Wang, Qualls, & Hu, 2016). Furthermore, building on the fundamental human reaction towards physical contamination, several studies have found that even for symbolic representations, fused cultural icons were rated as more disgusting compared to the standalone original icons; these studies consistently observed such a pattern existing across cultures, even when the mixed cultural symbols did not contain ingroup elements (Cheon et al., 2016). All these exclusionary responses towards culture mixing highlight the fundamental emotional reactions that occur in intergroup scenarios, thereby emphasizing the importance of understanding the underlying mechanisms of cultural mixing, as well as potential intervention strategies for reducing such responses, especially in societies like Hong Kong that are being negatively affected by intergroup conflicts.

Why is disgust the most instinctive reaction towards culture mixing? Such a response is rooted in the fear-of-contamination mechanism that developed through human evolution (Haidt, Rozin, McCauley, & Imada, 1997). While this innate fundamental tendency serves the critical function of avoiding pathogens, it also accounts for ostracizing and exclusionary responses toward outgroups (Rottman, DeJesus, & Gerdin, 2018). The study by Rotmann et al. (2018) found that in the cases of food and contaminating objects, the closer a contaminant came to the food, the stronger the disgust reaction from participants; similarly, the closer an outgroup symbol was physically placed next to an ingroup symbol, the stronger the disgust reactions evoked. As discovered in previous studies (Cheon et al., 2016), a disgust reaction intensifies as the distance between two cultures decreases, that is, moving from being separated to fused; as a result, exclusionary responses to culture mixing can be examined on a spectrum. Another stream of previous research interprets disgust towards mixed cultural

symbols as an extension of defensive responses from the level of the body to the level of society, which plays an important role in differentiating and separating groups (Torelli, Chiu, Tam, Au, & Keh, 2011). Regardless of the exact psychological explanation, examining disgust in culture mixing will be crucial to understanding discrimination and intergroup relations in multicultural societies.

Culture mixing in Hong Kong. Although previous field studies have been conducted on culture mixing, they have mostly evaluated the phenomenon with respect to Western and Chinese cultures (Torelli et al., 2011; Chen et al., 2016; Cheon et al., 2016; Cui et al., 2016; Keh et al., 2016; Yang et al., 2016), rather than other paradigms. Indeed, when examining culture mixing on a global scale, the generalizability of most published research on the issue is reasonably doubtful given that culture mixing consists of dynamic cultures and a variety of forms. Depending on the context, culture mixing can be a mixture of different national cultures, between local culture and global culture, traditional culture and modern culture, or many other pairings. There has been little discussion thus far about culture mixing in a “regional versus national” context, particularly those cultural contexts in which marked distinctions between subcultures exist. In particular, Hong Kong was already a unique cultural environment on account of most of its Chinese heritage originating from Guangdong culture, itself a culture that is already distinct from that of other Chinese regions; furthermore, as a result of British colonial rule, this Guangdong-based heritage fused with Western culture over more than one hundred fifty years to form an entirely new culture. Given the growing conflicts between Hong Kong and Mainland China, it is necessary to expand the scope of analysis regarding culture mixing to include the intergroup context of Hong Kong-Mainland tensions, rather than remaining solely within the “Western-Chinese” paradigm.

In a diverse society of immigrants like Hong Kong, how local residents of the host community react to foreign cultures establishes the acculturation context for immigrants (Berry, 2006). As the dominant group in the immigrant society, how local residents perceive the cultures brought by immigrants shapes the acculturation expectations that they require from immigrants. On the other hand, as the minority group, how immigrants perceive the host culture and majority group attitudes are also crucial to acculturation process (Hui, Chen, Leung, & Berry, 2015). For instance, as one of the most numerically significant populations in Hong Kong universities, Mainland Chinese students not only experience the mixed Western-Chinese culture of the city, but also bring in a new modern Chinese culture. Although extensive research on culture mixing in Hong Kong tertiary institutions has been carried out in recent years, most of them were conducted on local communities, with little to no attention being paid to the immigrant perspective. In this project, we try to remedy this imbalance by carrying out research on culture mixing among Hong Kong residents and Mainland Chinese immigrants to obtain a better understanding of intercultural relations between the two groups.

Cultural Identities in Hong Kong

Bicultural Hong Kong. As a former British colony, Hong Kong experienced a long history of Westernization that transformed the city into a typical society of biculturals. Ethnic Chinese in Hong Kong have internalized both Chinese and Western culture, forming unique ways that guide their behaviors and thoughts. A number of priming studies have found that Hong Kong Chinese switch their attribution style after receiving different cultural cues (Hong, Morris, Chiu, & Benet-Martínez, 2000), presenting the notion that as biculturals, and deeply influenced by both cultures. Other studies also found that Hong Kong university students demonstrate a collective mindset after reading Chinese primes, while showing an individual mindset after reading English primes (Lee, Oyserman, & Bond, 2010).

Consequently, Hong Kong people generally differentiate themselves from Mainland Chinese in terms of their internalization of Western values, as well as being bicultural rather than monocultural.

For bicultural individuals, the strength of the internalization of both cultures may have varying levels; the reactions to cultural symbols from each culture are thus also different. A strong identification with a given culture makes an individual prone to corresponding cultural priming responses; on the other hand, disidentification with that culture will show contrasting priming effects (Cheng, Lee, & Benet-Martínez, 2006; Zou, Morris, & Benet-Martínez, 2008). Among Hong Kong Chinese, the effects of Western and Chinese cultural priming respectively depend on how strong people identifying with either culture (T. K. Ng, Ng, & Ye, 2016). This Western-Chinese contrast is extremely significant regarding the context of intergroup conflicts in Hong Kong, as a study showed that stronger identification with Western culture indicates a stronger localist patriotism towards the city, whereas stronger identification with Chinese culture is associated with stronger national patriotism towards China (S. H. Ng & Lai, 2011).

Identities of Hong Kong locals. The political separation from China throughout the long history of colonial rule has resulted in the development of a strong regional identity in Hong Kong. Prior to the 1997 handover, only 35% of the locals identified themselves as “Hongkonger”, while 31% identified as “Chinese” (Hong, Chiu, Yeung, & Tong, 1999). As the conflicts between Hong Kong and Mainland China increase, public opinion polls have documented an increasing preference for the “Hongkonger” identity relative to a “Chinese” identity over the last decade (The University of Hong Kong, 2019). According to the 2019 survey report, the proportion of people who self-identified as “Hongkonger” hit a historic new high of 52.9% since 1997, while identification as “Chinese” hit a historic new low of 10.8%. In particular, Hong Kong youth have stronger local identities compared to their

parents and grandparents, of which “Hongkonger” is the most distinctive identity that contradicts the “Chinese” identity and expresses rejection towards reunification with Mainland China. Given the current circumstances in Hong Kong, the increasing preference for this particular local identity was consistent with the growing intentions to self-differentiate from Mainland China as documented in previous studies (Brewer, 1999; Fong & Guo, 2019; S. H. Ng & Lai, 2011).

Identities of Mainland Chinese in Hong Kong. Whether permanently uprooting from their hometowns or just travelling, Mainland Chinese immigrants benefit from the successes of the economic and education systems in Hong Kong, especially after the removal of certain policy barriers post-1997 (Fong & Guo, 2019). Some Mainland Chinese expect to assimilate into Hong Kong society, while others just want to stay for a short period of time. Consequently, not all Mainland Chinese experience the same identity conflicts, nor do they have the same identity formation process, after migrating to Hong Kong. For example, sojourners and students without firm vocational plans may not have to deal with the problem of identity integration, as they are highly likely to leave Hong Kong in the near future. Thus, during their years of staying in such a “foreign” place, “Mainlander” remains a stable self-labeled identity. A previous study (Hue, 2008) interviewing Mainland Chinese students unraveled difficult feelings regarding the journey of “sailing” into Hong Kong. In particular, their identity as a “Mainland Chinese” distinguished from a local “Hongkonger” remains rather stable even as they acculturate into Hong Kong society. Interestingly, student living experiences in Hong Kong led to identity conflicts when they returned to their hometowns and were perceived as being more “Hongkonger” by relatives and friends.

Acculturation and Cultural Identity

Acculturation, which refers to “the general processes and outcomes of intercultural contact” (Berry, 1997, p. 8), is the way in which immigrants and sojourners adapt to a new

host culture. A considerable number of studies published on identity integration for immigrants in bicultural or multicultural societies identified that integrated individuals (e.g. biculturals) tend to successfully find a balance between different cultural identities, perceive these identities to not be conflicting or exclusive, and tend to simultaneously endorse values and beliefs associated with multiple identities (Hong et al., 2000; S. H. Ng & Lai, 2011; Nguyen & Benet-Martínez, 2013). On the other hand, less integrated immigrants experience conflicts between different cultural identities, constantly shifting between the heritage and settlement cultures (Phinney & Devich-Navarro, 1997; Ward et al., 2018). It is therefore the case that the internalization of both heritage and host cultural identities depends on personal and environmental factors alike, resulting in different degrees and states of internalization that lead to different acculturation outcomes.

In efforts to move beyond the classic acculturation framework, recent research has broadened to study the process of integrating multiple cultural identities and try to quantify the two forms of integration, namely blending and alternating (Stuart & Ward, 2011; West, Zhang, Yampolsky, & Sasaki, 2017; Saleem, Dubow, Lee, & Huesmann, 2018). In a recent study, Ward and colleagues (2018) identified two styles of identity integration processes, namely the Hybrid Identity Style (HIS) and the Alternating Identity Style (AIS); HIS encompasses combining and blending heritage and settlement cultural elements into an integrated identity, while AIS indicates shifting one's identity between these two cultures depending on the situation. Investigating both processes across three ethnic immigrants groups, they found that HIS processes consolidated cultural identity and led to better adaptation outcomes, whereas AIS processes predicted cultural identity conflicts and led to negative adaptation outcomes (Ward et al., 2018). These two strategies are simultaneously available for individuals to negotiate with the multiple cultural identities that the encountered in the settlement society. Consistent with the findings of Ward and colleagues (2018), a later

study also identified similar differential functions for both HIS and AIS processes among several immigrant groups (Szabó & Ward, 2019). By establishing a cross-lagged model, the study found that an individual's intercultural ability positively predicted HIS processes and negatively predicted AIS processes after acculturating to the host society for one month. Both studies point out that the methods for managing cultural identities are crucial to the acculturation process.

Acculturation from both sides. Berry (1997, 2005; 1989) conceptualized a two-dimensional model of acculturation strategies that evaluates one's cultural adaptation regarding preserving heritage cultural identity and assimilating into the settlement culture. This framework proposed four kinds of strategies/attitudes: integration (integrate both heritage culture and settlement culture), separation (maintain heritage culture and not joining settlement culture), marginalization (not engage in any culture), and assimilation (abandon heritage culture and blend in settlement culture). Previous studies have predominantly shown that immigrants who adopted integration strategy had the best acculturation outcomes (Ward & Kennedy, 1994; Berry, 2005; Berry, Phinney, Sam, & Vedder, 2006; Berry & Hou, 2016). However, the successful adaptation depends not solely on one-side. While such acculturation strategies were taking the perspective of immigrants, the context of the host society, especially how local communities' attitudes towards immigrants plays an important role in acculturation process. In particular, what majority of the society expect immigrants to do, in other words, the acculturation strategy that expected from the host society is referred as acculturation expectations (Berry, 2006; Berry et al., 2006). Corresponding with findings on immigrants, research in this field demonstrated that for the majority group members, those with multicultural and integrating expectations had better psychological outcomes (Hui et al., 2015; Inguglia & Musso, 2015). So, acculturation is a dynamic and interactive process that involves both non-dominant and dominant groups. Looking into both parties in the

acculturation setting is not only informative but also necessary to understand how the intergroup climate is forged and how it will develop in the future.

Acculturation is context-dependent. The choice of acculturation attitudes is depending on the intergroup climate between immigrants and host society. Earlier research has indicated that, for immigrants and sojourners, better sociocultural adaptation is predicted by closer cultural distance and interaction with host society (Ward & Searle, 1991; Ward & Kennedy, 1992); and if not being rejected, assimilating and integrating into host society brought less depression compare to separation and marginalization (Ward & Kennedy, 1994). These findings are logical in normal conditions, as blending in the host society or keeping a balance between ethnic and settlement cultural identity is adaptative in a harmonious society.

Neither every immigration society nor every member in the majority group is pro-immigrant type. Echoing the acculturation expectation mentioned above, when the majority of the host society discriminate against immigrants, such hostile intergroup climate could well predict higher tendency for immigrants to separate from host society and stronger desire to maintain heritage culture (Christ, Asbrock, Dhont, Pettigrew, & Wagner, 2013). In Hong Kong, research investigating Mainland Chinese university students found that the effects of integration on sociocultural adaptation and psychological adaptation varied upon different levels of social support from locals (T. K. Ng, Wang, & Chan, 2017). Afterall, depends on the local community, when the heritage culture is discriminated, keeping it may be difficult while assimilating into the majority brings the adaptative outcomes; if one can interact with an inclusive community, there will be a completely different story.

Identity integration among Mainland Chinese. In Hong Kong, Mainland Chinese deal with the integration of Mainland and Hong Kong identities as they acculturate to Hong Kong society. Due to linguistic barriers, political and ideological differences, and discrimination; adaptation problems persisted among Mainland Chinese students, that is, they

felt it difficult to blend in (Gu, 2011), with some reporting that they remained a “Mainlander” even after living in Hong Kong for several years (Hue, 2008). Consequently, Mainland Chinese students, especially those coming from non-Cantonese-speaking regions, may choose to engage with identity conflicts altogether; Indeed, adopting a “separating” strategy and maintaining the original “Mainland Chinese” identity appears to be an easy and not necessarily unpleasant option. As a previous study points out, without much engagement with locals, some Mainland Chinese students group together to form their own social circles (Yu & Zhang, 2016). Moreover, a cross-sectional survey conducted in 2014 focusing on new immigrants found that within the context of being discriminated, Mainland immigrants in general face difficulties in identity management (Ngo & Li, 2016). Indeed, when the Mainland Chinese identity is discriminated against, both simply keeping it as is and integrating it with the local Hong Kong identity are difficult processes, leading to obstacles towards interactions with local communities; Ngo & Li (2016) show that a strong Hong Kong local identity positively predicts life satisfaction and sociocultural adaptation in the city, whereas a strong Mainland identity does the opposite.

Identity integration among Hong Kong locals. Mainland Chinese immigrants are not the only group in Hong Kong that face a challenge of identity integration. Starting from the transition period shortly after the 1997 handover, Hong Kong residents struggled between shifting towards the “Chinese” identity, thereby unifying with and assimilating into the superordinate Chinese identification, or retaining their “Hongkonger” identity and maintaining their regional identification and distinctiveness (Brewer, 1999). Some residents found a hybridized state between these two identities, while others showed polarized responses (A. Fung, 2004; Kim & Ng, 2008). Such patterns shifted in conjunction with the occurrence of social events throughout the post-handover years, with demonstrations of conflicting emotions regarding national icons (A. Y. H. Fung & Chan, 2017) being observed

as evidence of identity conflicts among Hong Kong locals. Furthermore, these conflicting tendencies affect intergroup relations with Mainland Chinese peoples. For example, the motivation for local universities students to establish interpersonal relations with Mainland Chinese students is largely context-dependent. Among Hong Kong students, self-identified “Hongkongers” gave more negative responses to Mainland Chinese compared to self-identified Chinese (Hong et al., 2004, 2006); however, such biases were sometimes attenuated when they were primed with an inclusive national frame (Lam et al., 2006). Both studies suggest that the Hong Kong identification is indeed conflicting with the Chinese identification, resulting in negative impacts; more specifically, the perceived intergroup conflicts between Mainland Chinese and local residents creates the identity-congruence of the “Hongkonger” identity as “staying away”, “fighting against” rather than “making friends” with Mainland outgroups.

Multicultural identity integration and culture mixing. The identity conflicts in Hong Kong are a unique case; both locals and Mainland immigrants are negotiating cultural identities and struggling to finding a way forward. Although the two identities involved in this conflict are non-equivalent, the two cultural groups are linked together by a common socio-political background and intergroup relationships. This project suggests that the self-perception of integration between Hong Kong and Chinese identities within an individual will be linked to the attitude that the individual has towards culture mixing. Previous studies have already demonstrated the negative responses that people have towards outgroup, dis-identified cultural symbols (Torelli et al., 2011; Cheon et al., 2016). Moreover, a recent study found that among immigrants, HIS processes were associated with positive intergroup evaluations toward multiple ethnic groups, while AIS processes were associated with negative evaluations (T.-W. Ng, Ward, & Szabó, 2019). Finally, as discussed above, biculturals who perceive their two identities as non-conflicting and compatible tend to

endorse values and practices from both cultures; it is therefore likely that the cultural symbols from both cultures will also not be perceived as mutually exclusive or incompatible. On the other hand, conflicted biculturals tend to perceive cultural symbols as less compatible and more distinctive from each other. The current project expects that for both Hong Kong locals and Mainland Chinese, those who perceive more conflict in identity integration processes will similarly show more negative reactions towards culture mixing.

Elaborating on the unique situation of Hong Kong, the two identities that are perceived to be in conflict are slightly different for Hong Kong local residents than they are for Mainland Chinese sojourners and immigrants. Looking at previous research on both groups (A. Fung, 2004; Hong et al., 2006; Hue, 2008; S. H. Ng & Lai, 2011; Gu, 2011; Ngo & Li, 2016; Yu & Zhang, 2016), the primary conflict for Hong Kong locals is the negotiation between assimilating into the superordinate “Chinese national” (中国人) identity and maintaining their “Hongkonger” (香港人) identity; whereas for Mainland Chinese in Hong Kong, the conflict is between assimilating into the “Hongkonger” (香港人) identity and maintaining their “Mainlander” (内地人) identity. Consequently, the current project adopts the Hybrid Identity Style (HIS) process as an indicator of internalization, as well as the compatibility of Mainland culture to Hong Kong culture, for both groups. A low HIS score reflects a low acceptance of Chinese identity by Hong Kong locals, or Hong Kong identity by Mainland Chinese, that creates identity-incongruity of accepting the opposing culture, negative reactions towards culture mixing, and low motivation for making cross-cultural contact; as well as resulting in poor sociocultural and psychological adaptation.

Gaps in Extant Research

The current project aims to take into consideration recent research on culture mixing and cultural identity integration while examining the intergroup relations between Hong

Kong and Mainland Chinese in acculturation settings. The three studies in this project each have potential contributions for several research domains.

First, an extensive amount of research has been carried out on cultural identity integration and acculturation. Yet even with increased attention being given to the field of culture mixing, no study has examined the role of identity integration regarding perceptions of culture mixing, particularly within the scope of intergroup conflicts, and especially within the Hong Kong context.

Second, research on the subject of multicultural identities, culture mixing, and “Hong Kong versus Mainland China” studies have been mostly restricted to limited comparisons of Western and Chinese cultures; most of the research thus far has not been treating cross-cultural differences as contrasts between Hong Kong and Mainland China. In this project, we attempt to investigate the identity integrating process in the contexts of “Hongkonger versus Mainlander” identity for Mainland Chinese immigrants and “Hongkonger versus Chinese national” identity for Hong Kong locals, examining the perspectives of both groups. By selecting and fusing typical cultural symbols from each of these two cultures, we aim to extend the current research on cultural identity integration through the subordinate-superordinate identity paradigm. In addition, this project aims to contribute to acculturation studies by revealing the associations between identity integration and fundamental reactions to new cultures.

Third, studies regarding superordinate identity have found a variety of effects resulting from promoting a common ingroup identity, and many in the context of Hong Kong have found negative associations between the local “Hongkonger” identity and attitudes toward Mainland Chinese. Yet few studies have directly compared national and ethnic Chinese identities in the context of intergroup conflicts, and the impact of promoting different Chinese identities in acculturation contexts is poorly understood. The aim of Study

3 in this project is to provide a deeper insight into the differing effects of two distinct primes that relate to different Chinese identities in contemporary Hong Kong.

Fourth, the recent developed Multicultural Identity Styles Scale (MISS) has been tested on several minority groups in immigrant societies, yet no study has focused on a regional majority group who is also a minority within the larger national context. In addition, the intergroup relations in Hong Kong are unique to the city, especially since Mainland Chinese can be regarded as a minority when seen as immigrants, but also as a majority when seen as Chinese nationals that outnumber Hong Kong locals. Furthermore, both groups in Hong Kong face the challenges of managing cultural identities amid these two cultures interacting more frequently with each other. It is therefore worth examining multicultural identities to expand understandings of identity integration of both parties in an acculturation context.

Lastly, given the currently unstable sociopolitical environment in Hong Kong, with conflicts involving Mainland China, it is more important than ever to inspect the negative perceptions that these two cultural groups have regarding each other, as well as possible solutions for changing these perceptions. If there is to be any chance of identifying the underlying causes of such conflicts and find effective intervention strategies to mitigate them, there is no doubt that this analysis must be attempted to the best of our abilities.

The Methodological and Theoretical Approach of this Project

In summary, in the current project we expect both Hong Kong local residents and Mainland Chinese sojourners to demonstrate disgust towards culture mixing. In particular, Hong Kong local residents will show such reaction to intrusive Mainland Chinese cultural symbols mixed into Hong Kong cultural symbols; Mainland Chinese sojourners will show such reaction to intrusive Hong Kong cultural symbols mixed into Mainland Chinese cultural symbols. Furthermore, as discussed above, individuals who perceive their two identities as

non-conflicting and compatible will tend to embrace both cultures; it is therefore likely that for such individuals, the cultural symbols from both cultures will also not be perceived as mutually exclusive or incompatible. On the other hand, individuals who perceive the cultural identities as conflicting tend to perceive cultural symbols as less compatible and more distinctive from each other. Thus, in this project we suggest that in general, more hybridizing and alternating between Hong Kong and Chinese identities within an individual will be linked to a more positive attitude that the individual has towards culture mixing.

In conjunction with the above, Study 1 aims to test the associations between disgust towards culture mixing and multicultural identity styles (MISS) among Hong Kong residents and Mainland Chinese sojourners in Hong Kong, in particular, to explore how hybrid identity style (HIS) and alternating identity style (AIS) are associated with disgust; in Study 2, focusing on Mainland Chinese university students who are in the initial stages of acculturating to living in Hong Kong, we explore the longitudinal impact of initial MISS on later disgust, as well as the longitudinal impact of initial disgust on later well-being, in two-time-point studies; in Study 3, taking the perspective of Hong Kong locals, we further test out whether we can reduce disgust through identities, by exposing to Hong Kong locals to different multicultural ideologies. With this design, we can compare the similarities as well as differences of how identities and disgust at cultural mixing are connected not only within the context of acculturation, but also through majority and minority perspectives.

One additional goal that the current project has is to question and thoroughly examine new and modified measurement tools. Although these analyses may not directly address the main hypotheses of this project, they are crucial to conducting rigorous research. The appendices report as supplementary materials certain additional methodological approaches that were adopted for this project.

To examine the validity of the modified measurement, multigroup confirmatory factor analysis (CFA) is applied to compare measurement invariance between cultural groups. In addition, item response theory (IRT), in particular Rasch analysis (Wright, Linacre, Gustafson, & Martin-Lof, 1994; Boone, Staver, & Yale, 2013) is conducted using WINSTEPS (Linacre, 2018) to obtain a supplementary index for measurement validity. Appendix B presents the descriptions and results of these tests.

Not all significant effects are meaningful effects. In social science research, the effect size can sometimes be too small to be considered “effective.” For example, in many cases where inter-group differences were tested in this project, the null hypothesis was set as “no difference between groups”, which can be understood as $M_{\text{dif}} = 0$; whereas in some cases, the difference was meaningless and therefore regarded the same as no difference. Other examples given in Lakens et al. (2018) regarding gender studies indicate that researchers tend to expect more males than females in a random sample, given the natural birth ratio of males to females is approximately 103:100. In such studies, the null hypothesis therefore generally expects a 1.5% difference in sample size between genders.

Under such circumstances, in addition to traditional approaches that test against null hypotheses of zero effect size, equivalence test (Lakens, 2017) results were provided for *t*-tests and correlation tests in the current project. Equivalence tests was conducted using the TOSTER package (Lakens, 2019) embedded in jamovi (jamovi project, 2018). The smallest effect sizes of interest (SESOI) used in such tests were set to $r = .21$, a value adopted from a meta-analysis of general social psychology (Richard, Bond, & Stokes-Zoota, 2003). In addition, as an index supplemental to traditional null hypothesis testing approaches, Bayesian statistics were also calculated for correlation tests, *t*-tests, and ANOVAs using JASP (JASP Team, 2018). In appreciation of the principles of open science, all the data sets and typical statistical results were stored in JASP format and made available on the Open Science

Platform (OSF, see Appendix E). The JASP format was adopted because it is available as a free open-source software that is highly appreciated by the open science community, and more importantly, it combines data and results together in a single file for easy replication.

Chapter 3: Study 1 – Validating and Exploring Associations of Disgust Towards Culture Mixing and Multicultural Identity Styles

Overview

In multicultural Hong Kong, where locals are dealing with a rise in conflicts against Mainland China, do people demonstrate reactions towards sub-regional Hong Kong-Mainland culture mixing similar to those found in previous studies on Western-Chinese culture mixing? And how do such negative reactions towards culture mixing in general associate with either the consolidation of the Chinese and Hong Kong identities, or conflicts between them? Looking to move beyond previous findings attesting that people demonstrate aversive reactions to mixed western-Chinese culture symbols (Cheon et al., 2016; Yang et al., 2016), Study 1 sets out to examine the perception of mixed Hong Kong-Mainland symbols. To address these issues, recently developed measurements of culture mixing, cultural identity, and other measures in acculturation settings were adopted and modified to fit the research context; which were implemented through a survey study of both local and Mainland Chinese students at a Hong Kong university.

Within the current project, Study 1 serves as a pilot study that aims to validate the measurement tools used for the entire project, including the modified measure of disgust (hereafter the “disgust measure” for convenience) towards culture mixing and the Multicultural Identity Style Scale (MISS). The goals of the study are to validate measurement models, test for measurement invariance between cultures, and replicate important cultural patterns observed in previous findings. Moreover, Study 1 also serves as an exploratory analysis for potential associations among these concepts, in hopes of establishing a link between cultural identity and disgust towards culture mixing.

In Study 1, the measurement of disgust towards culture mixing was developed based an identical method used in previous research (Cheon et al., 2016) that measures disgust

towards mixed images consisting of American and Chinese cultural symbols. Adopting the same measurement structure, five pairs of images were selected through group discussion and reached consensus with both Hong Kong and Mainland Chinese students prior to publishing the survey. Each pair of images contains a symbol that represents Hong Kong and another that represents Mainland China. Group discussions confirmed that these images were perceived as relatively unique and typically representative of the territory being denoted, ensuring that the cultural symbols in these images could be easily distinguished as either “Hongkongese” or “Mainland Chinese”; that is, these two groups of images were subjectively seen to be culturally different. Next, each pair of images was processed using Photoshop to produce both “side-by-side” and “mixed” presentations, assimilating according to the method of Cheon et al. (2016). Moreover, these images were edited differently for Hong Kong and Mainland Chinese participants. The final mixed images shown to the Hong Kong group set the Hong Kong symbols as the background, with the Mainland Chinese symbols being incorporated into the Hong Kong symbols, and vice versa for the mixed images used for the Mainland Chinese group. In either case, the mixed images represent the idea of “intrusive culture mixing,” recreating experiences brought by immigration and acculturation. Finally, all four types of images—the ingroup symbol, the outgroup symbol, the side-by-side presentation of both symbols, and the mixed symbols were incorporated into the first measure of the survey questionnaire. The four images were grouped into two blocks of two images each; Block 1 contained the former two types of simplex images, whereas Block 2 contained the latter two types of composite images. The exact order of presentation within each block was randomized. These groupings ensured that each simplex cultural symbol was registered in the memory of the participant before “mixing” occurred so that the participant could recognize the mixed images as being distinct from the simplex images.

As stated above, the first goal of Study 1 is testing the validity of modified measures of culture mixing. Before further testing the associations among these measures, in addition to implementing them in the subsequent studies of this project, both the disgust measure (of disgust towards Hong Kong-Mainland Chinese culture mixing) and the MISS (regarding the “Hongkonger” and “Chinese national” identities for Hong Kong locals and the “Hongkonger” and “Mainlander” identities for Mainland Chinese immigrants to Hong Kong respectively) are expected to be validated through the selected samples of local and Mainland Chinese university students in Hong Kong. The reliability, factor structure, and cross-group measurement invariance of these measures are expected to demonstrate a good model fit through testing.

In line with previous findings (Cheon et al., 2016), it is expected that the sub-regional mixing of Hong Kong and Mainland Chinese cultures will elicit negative responses similar to those regarding Chinese-Western culture mixing. Based on this assumption, an exploration of the relations among the disgust measure, MISS, and life satisfaction is thus proposed for testing in Hypothesis 1:

Hypothesis 1. Both Hong Kong and Mainland Chinese groups will demonstrate the highest levels of disgust towards mixed cultural icons and decreasing levels of disgust towards side-by-side icons, outgroup icons and ingroup icons, in that order;

As discussed in Chapter 2, the primary conflict for Hong Kong locals is the negotiation between assimilating into the superordinate “Chinese national” identity and maintaining their “Hongkonger” identity; whereas for Mainland Chinese in Hong Kong, the conflict is between assimilating into the “Hongkonger” identity and maintaining their “Mainlander” identity. In line with previous findings (Ward et al., 2018; T.-W. Ng et al., 2019) that find HIS predicts cultural identity consolidation and desirable adjustment outcomes while AIS predicts cultural identity conflicts and maladaptive adjustment

outcomes, the current study expects that HIS will be related to lower levels of disgust and better adaptation outcomes, while AIS will be related to higher levels of disgust and worse adaptation outcomes, as expressed in the following hypotheses:

Hypothesis 2a. In both Hong Kong and Mainland Chinese groups, participants with higher levels of disgust exhibit lower level of hybrid identity style (HIS);

Hypothesis 2b. In both groups, participants with lower levels of disgust exhibit lower levels of alternating identity style (AIS);

Hypothesis 3a. For both groups, HIS is positively associated with life satisfaction;

Hypothesis 3b. For both groups, AIS is negatively associated with life satisfaction.

Method

Participants. In our initial sample, 246 undergraduate and postgraduate students, of which 137 were Mainland Chinese and 109 were Hong Kong locals, were recruited from two Hong Kong universities through online advertisements posted to university-internal portals. Prior to data collection, the ideal sample size for the study was calculated using G*power (Faul, Erdfelder, Buchner, & Lang, 2009) with a typical effect size value of $r = .21$ (Richard et al., 2003), which found that to explore the associations between variables, at least 175 participants were required to achieve 80% power in the Pearson correlation coefficient test.

Participants were instructed to complete a 15-minute online questionnaire consisting of measurements described in the following section. All questions were presented in traditional Chinese for Hong Kong participants and in simplified Chinese for Mainland Chinese participants. In addition, two attention check questions were randomly inserted into the questionnaire. Based on their responses, 27 Mainland Chinese and 12 Hong Kong participants either failed or skipped over either of the attention checks; they were consequently regarded as inattentive and their responses were removed from the final data analysis. Moreover, an additional two participants were removed from Hong Kong sample

due to self-identifying as “Mainland Chinese.” The final sample consisted of 207 students, of which 110 were Mainland Chinese and 97 were Hong Kong locals. Of the Mainland Chinese students, 16 were male, 92 were female, and 2 did not report their gender; the mean age (M_{age}) of these students was 22.1 years, with a standard deviation (SD) of 2.83 years and a range of 17-29 years. Of the Hong Kong local students, 13 were male, 83 were female, and 1 did not report their gender; the mean age (M_{age}) of these students was 21.6 years, with a standard deviation (SD) of 3.7 years and a range of 18-50 years. Each participant received HK\$30 as compensation upon completing the questionnaire.

Measures

Disgust towards culture mixing. To measure disgust towards culture mixing, a total of 20 images were presented in 5 groups, each group containing two blocks. Each of the two simplex images in Block 1 was followed by two questions. The first question “To what extent do you think this picture typically represents Hong Kong or Mainland China?” assessed the typicality of the image regarding the represented culture, with responses being rated on a 6-point Likert scale from “typically represents Hong Kong” (1) to “typically represents Mainland China” (6). The second question “To what extent do you feel disgusted when you see this picture?” assessed the level of disgust felt by the participant, with responses being rated on a 6-point Likert scale from “not at all” (1) to “extremely” (6). For Block 2, each of the two composite images was only followed by the question assessing disgust. The strong internal consistency of the disgust measure among both groups in the current study was demonstrated by indicators of high reliability; McDonald’s $\omega = .89$ for the Hong Kong group and $.84$ for the Mainland Chinese group, while Cronbach’s $\alpha = .89$ for the Hong Kong group and $.82$ for the Mainland Chinese group.

Multicultural Identity Styles Scale (MISS). Developed and validated across multiple ethnic groups (Ward et al., 2018), the MISS measures how two cultural identities are sustained during acculturation, specifically whether they shift depending upon the circumstances (alternating) or blend and stabilize (hybrid) throughout the acculturation process. The scale comprises 14 items, of which 7 assess alternating identity style (AIS) processes and the other 7 assess hybrid identity style (HIS) processes.

In the present study, the two identities measured in the original scale were replaced with “Hongkonger” and “Chinese national” for Hong Kong participants, and with “Hongkonger” and “Mainlander” for Mainland Chinese participants. Sample HIS items included “For me, being a Hongkonger and being a Mainlander are intermingled” for Mainland Chinese and “For me, being a Hongkonger and being a Chinese national are intermingled” for Hong Kong locals; whereas sample AIS items included “I can be a Hongkonger or a Mainlander depending on the situation” for Mainland Chinese and “I can be a Hongkonger or a Chinese national depending on the situation” for Hong Kong locals. The original scale items were translated into Chinese through group discussions with both Hong Kong and Mainland Chinese students.

All question items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score; the scale yielded good reliability overall. For the AIS subscale, McDonald’s $\omega = .78$ for the Hong Kong group and $.80$ for the Mainland Chinese group, while Cronbach’s $\alpha = .76$ for the Hong Kong group and $.79$ for the Mainland Chinese group. For the HIS subscale, McDonald’s $\omega = .89$ for the Hong Kong group and $.84$ for the Mainland Chinese group, while Cronbach’s $\alpha = .89$ for the Hong Kong group and $.83$ for the Mainland Chinese group.

The Satisfaction with Life Scale (SWLS). Life satisfaction was measured with the widely used five-item scale developed by Diener et al. (Diener, Emmons, Larsen, & Griffin, 1985). Sample items included “In most ways my life is close to my ideal” and “I am satisfied with my life.” All question items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score. The scale yielded excellent reliability overall; McDonald’s $\omega = .93$ for the Hong Kong group and .92 for the Mainland Chinese group, while Cronbach’s $\alpha = .92$ for the Hong Kong group and .91 for the Mainland Chinese group.

Demographics. The last section of the survey questionnaire included several questions about the participants’ age, gender, year of study, permanent residency status.

Data Analysis Plan

Data preparation. All questionnaires were set up online using SurveyMonkey (SurveyMonkey Inc., 2018). Samples were obtained from three sources; Hong Kong participants were recruited from the Education University of Hong Kong (EdUHK), while Mainland Chinese participants were recruited from both EdUHK and the City University of Hong Kong (CityU). The survey results were exported into an SPSS (IBM Corp, 2017) compatible format. As stated above, initial data screening was done in SPSS based on the two attention check questions, removing a total of 39 participants from the final analysis, although this excluded data was retained in data sets and can be identified using filter variables.¹

Analytic strategy. For each scale, descriptive statistics of mean, standard deviation, skewness, and kurtosis were calculated separately for Hong Kong and Mainland Chinese groups using JASP (JASP Team, 2018).²

¹ Data sets are available on OSF at: https://osf.io/8uvzg/?view_only=64de393e51d1446587f0e8b7fd51abe3

² Results are available in JASP format on OSF.

The measurement tools for the two samples were then validated as a next step. Given that cross-cultural comparison is one of the most common research designs in social psychology, to properly compare differences between cultural groups, measurement tools for these differences must be shown to be invariant; in other words, the constructs must display the same attributes in different cultures, otherwise they cannot be applied to directly comparisons across cultures. Since measurement invariance addresses the prerequisites for a meaningful cross-cultural comparison, the present project tests conventional levels of invariance (Vandenberg & Lance, 2000) to validate the measurement tools being employed. If a measurement tool satisfies all three levels of invariance—namely the configural, metric, and, scalar levels—then it is considered to be invariant and therefore regarded as meaningful for intergroup comparisons. If the tool does not satisfy all three levels of, then subsequent analyses of the results will be conducted separately for each group or through a multigroup approach. To ensure measurement invariance before proceeding to test the main hypotheses of the study, multigroup CFA was conducted on the modified or recently developed inventories employed in the study, including the 5-item disgust measure and the translated Multicultural Identity Styles Scale (MISS).

Several fit indices were used as guidelines for examining measurements and structural models. First, as a traditional index of absolute fit, the chi-squared (χ^2) value was reported. As Barrett suggests (2007), a non-significant χ^2 indicates a good model fit; however, given that this test is sensitive to large sample sizes (Kenny & McCoach, 2003), it should be interpreted with caution. Next, other absolute fit measures provided included the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the root-mean-square error of approximation (RMSEA)—including a one-sided test of the null hypothesis that $RMSEA = .05$ ($p_{close-fit}$), and the standardized root-mean-square residual (SRMR). Conventionally used cut-off values of these indices were adopted as indicators of good model fit; that is, $CFI \geq .95$; $TLI \geq .95$;

SRMR \leq .08 (Hu & Bentler, 1999); and RMSEA \leq .08 indicating acceptable fit and RMSEA \geq .1 indicating poor fit (MacCallum, Browne, & Sugawara, 1996), with a non-significant $p_{close-fit}$ and 95% confidence interval (CI) with lower bound close to 0 and upper bound is less than .08 (Kenny, Kaniskan, & McCoach, 2015). Finally, as indices of incremental fit, the Akaike (AIC) and Bayesian (BIC) information criterion were provided; these statistics are generally used to compare non-nested models; with smaller values usually indicated a better model fit (Kuha, 2004).

Results

Scale validation. To validate the factor structure of the modified measures, CFA was conducted on the disgust measure and the MISS, albeit separately for Hong Kong and Mainland Chinese groups in the latter. Tests were carried out using Lavaan in JASP with bootstrap samples set to 5,000 and the estimator set to “Maximum Likelihood (ML).”³

Disgust towards culture mixing. On the 6-point Likert scale for the disgust measure, a value of 3 represents “a little bit representative of ingroup,” while a value of 4 represents “a little bit representative of outgroup”; the typicality of each image was therefore tested using one sample t -tests with values of 3 and 4 as thresholds. For Hong Kong participants, all five Mainland Chinese symbols were rated significantly higher than 3 ($M_s > 5.3$, $p_s < .001$), while all five Hong Kong symbols were rated significantly lower than 4 ($M_s < 2.2$, $p_s < .001$). Likewise for Mainland Chinese participants, all five Hong Kong symbols were rated significantly higher than 3 ($M_s > 4.9$, $p_s < .001$), while all five Mainland Chinese symbols were rated significantly lower than 4 ($M_s < 1.8$, $p_s < .001$). These results indicate that all cultural symbols used in the current measure were considered to be representative of their corresponding cultures.

³ All results are available in the corresponding JASP data file on OSF.

A single factor CFA was conducted for the disgust measure. For the Hong Kong sample, CFA results showed that all five items were significantly loaded on the latent factor, $p < .001$, with factor loadings ranging from .72 to .86. The overall model fit was acceptable, $\chi^2 = 15.72$, $df = 5$, $p = .008$, CFI = .96, TLI = .92, RMSEA = .15, $p_{close-fit} = .025$, 95% CI = [.069, .235] SRMR = .037, AIC = 1646.01, BIC = 1671.76. The modification index (MI = 9.82) suggested a high error covariance between the first and second items; after accounting for this covariance, the modified model showed significant improvements in indices of models fit ($\chi^2 = 6.76$, $df = 4$, $p = .149$, CFI = .99, TLI = .975, RMSEA = .084, $p_{close-fit} = .245$, 95% CI = [.00, .191], SRMR = .023, AIC = 1639.05, BIC = 1667.38). Likewise, for the Mainland Chinese sample, all five items were significantly loaded on the latent factor, $p < .001$, with factor loadings ranging from .61 to .80. The overall model fit was acceptable but slightly poor, $\chi^2 = 17.86$, $df = 5$, $p = .003$, CFI = .94, TLI = .87, RMSEA = .15, $p_{close-fit} = .013$, 95% CI = [.081, .235], SRMR = .053, AIC = 1551.74, BIC = 1578.56. The modification index (MI = 15.28) suggested a high error covariance between the second and third items with; after accounting for this covariance, the modified model showed significant improvements in indices of models fit ($\chi^2 = 4.05$, $df = 4$, $p = .399$, CFI = 1, TLI = .999, RMSEA = .011, $p_{close-fit} = .532$, 95% CI = [.00, .146], SRMR = .026, AIC = 1539.93, BIC = 1569.43).

In conclusion, the disgust measure was shown to be valid in terms of its factor structure for both cultures. Rasch analysis also demonstrated that all items were within the reasonable range of INFIT (rating scale level, from 0.6 to 1.4) and ZSTD (from -3 to 3) values for each cultural group, suggesting a good fit for the measurement structure (Wright et al., 1994). Conversely, CFA modification indices suggested that correlated item pairs were non-identical across the two groups, possibly indicating that the factor structure was not the same across cultural groups, and that subsequent analyses might have to be conducted

separately for each group. Therefore, to test whether the disgust measure was invariant across groups, multigroup CFA tests were carried out as described in a subsequent section.

Multicultural Identity Styles Scale. Given that the sample sizes ($N_{\text{Hong Kong}} = 97$, $N_{\text{Mainland}} = 110$) were relatively small for a 14-item CFA, model fit indices for the MISS did not fall within acceptable ranges. Although MISS was originally developed and validated as a two-factor structure, it was commonly used in the literature in such a way that HIS and AIS were treated as separate predictors (T.-W. Ng et al., 2019; Szabó & Ward, 2019; Ward et al., 2018). Thus, in the current project, the hypotheses could be tested by treating the MISS subscales as two independent predictors, HIS and AIS. Moreover, in addition to two-factor CFA tests, single-factor CFA tests were performed separately for each MISS subscale and each culture.

A two-factor CFA was conducted separately on the MISS results for each cultural group. For the Hong Kong sample, most items were significantly loaded on the respective latent factor, ($ps < .01$) except item 6, which was marginally loaded ($p = .103$); the unstandardized estimate was .303, 95% CI = [-.054, .685]. Factor loadings ranged from .57 to .83 for HIS items and from .28 to .86 for AIS items. In general, the CFA yielded a poor model fit, $\chi^2 = 202.45$, $df = 76$, $p < .001$, CFI = .816, TLI = .780, RMSEA = .133, $p_{\text{close-fit}} < .001$, 95% CI = [.111, .155], SRMR = .088, AIC = 4551.461, BIC = 4625.217. The modification index suggested a high error covariance between item 12, “some situations make it hard to be A and B at the same time,” and item 14, “I can be A or B depending on the situation.” To avoid over-modification, the covariance of items within the same latent factor was considered to be acceptable, while cross latent factor covariance was rejected unless a reasonable theoretical explanation could be given; since items 12 and 14 have the same latent factor, the covariance between them was included. The modified model accounting for this covariance showed improvements but was still a poor fit. Following the aforementioned

principles, other acceptable covariances were added, resulting in a final model modified with covariances between items 12 and 14, items 1 and 11, and items 10 and 14. The fit of this final model was still far from ideal ($\chi^2 = 64.78$, $df = 73$, $p < .001$, CFI = .867, TLI = .834, RMSEA = .116, $p_{close-fit} < .001$, 95% CI = [.092, .139], SRMR = .079, AIC = 4519.80, BIC = 4601.18); it was therefore concluded that the two-factor structure of MISS was not valid for the Hong Kong sample.

For the Mainland Chinese sample, all items were significantly loaded on the respective latent factor ($ps < .01$). Factor loadings ranged from .31 to .85 for HIS items and from .41 to .87 for AIS items. In general, the CFA yielded a poor model fit, $\chi^2 = 185.75$, $df = 76$, $p < .001$, CFI = .829, TLI = .791, RMSEA = .138, $p_{close-fit} < .001$, 95% CI = [.114, .162]; SRMR = .088, AIC = 4173.42, BIC = 4242.09. The modification index (MI = 8.4) suggested an intra-factor covariance between item 1, “for me, being A and being B are intermingled,” and item 9, “I am A in a B way”. The modified model accounting for this covariance showed improvements but was still a poor fit. Following the aforementioned principles, one more covariance between items 4 and 8 (MI = 7.9) was added, resulting in a final model that still had a poor fit ($\chi^2 = 168.33$, $df = 74$, $p < .001$, CFI = .867, TLI = .837, RMSEA = .108, $p_{close-fit} < .001$, 95% CI = [.087, .130]; SRMR = .068; AIC = 5109.24, BIC = 5192.68).

Summarizing thus far, a two-factor structure of MISS fits poorly for both cultural groups. Based on the two-factor CFA results above, most of the indices of fit were found to be close to conventional cut-off values, while each covariance-modified model fit only in a small amount. Analysis therefore proceeded with single-factor CFA for HIS and AIS respectively.

For the Hong Kong sample, all MISS-HIS items significantly loaded on the latent construct ($p < .001$), with factor loadings ranging from .61 to .82. The overall single-factor model yielded a good model fit, $\chi^2 = 22.98$, $df = 14$, $p = .061$, CFI = .972, TLI = .958,

RMSEA = .082, $p_{close-fit}$ = .181, 95% CI = [.000, .140], SRMR = .04, AIC = 2282.81, BIC = 2318.71. Regarding MISS-AIS items, the factor loading of items 2 and 6 were marginally significant (p = .07 and .086), with unstandardized estimates = .314, 95% CI = [-.047, .637] and .278, 95% CI = [-.026, .602] respectively. The remaining items were significantly loaded on the latent factor (p < .001), with factor loadings ranging from .48 to .89. The overall model fit was good, χ^2 = 22.75, df = 14, p = .064, CFI = .951, TLI = .927, RMSEA = .082, $p_{close-fit}$ = .185, 95% CI = [.000, .140], SRMR = .062, AIC = 2392.77, BIC = 2428.37.

For the Mainland Chinese sample, all MISS-HIS items significantly loaded on the latent factor (p < .01), with factor loadings ranging from .34 to .84. The overall model fit was good, χ^2 = 31.05, df = 14, p = .005, CFI = .941, TLI = .912, RMSEA = .106, $p_{close-fit}$ = .038, 95% CI = [.055, .156], SRMR = .062, AIC = 2582.65, BIC = 2620.33. Regarding MISS-AIS items, all of them were significantly loaded on the latent factor (p < .01), with factor loadings ranging from .38 to .92. The model fit was adequate, χ^2 = 29.55, df = 14, p = .009, CFI = .929, TLI = .893, RMSEA = .1, $p_{close-fit}$ = .054, 95% CI = [.049, .151], SRMR = .066, AIC = 2682.61, BIC = 2720.42.

The results above demonstrate that for both the Hong Kong and Mainland Chinese samples, single-factor models yielded acceptable fitting indices that demonstrated a better fit compared to a two-factor model. This conclusion indicates that further testing should proceed by treating HIS and AIS as separate predictors; the MISS should therefore be treated as two single-factor scales in subsequent hypotheses testing.

Measurement invariance. To test whether the measures could be directly compared across groups using composite scores, measurement invariance tests were conducted to observe whether the factor structures were invariant across groups. If a measurement had different factor structures for each of the two groups, it meant that the meaning of the measured concept may be variate for each group, and therefore the means scores could not be

interpreted. Multigroup CFA was conducted on both the disgust measure and MISS by comparing measurement models between the Hong Kong and Mainland Chinese groups. Following the typical approaches of testing measurement invariance (Vandenberg & Lance, 2000) multigroup analysis was applied to test the three levels of invariance in nested models. *Configural invariance* is attested if the same CFA structure can be set for all groups, with factor loadings remaining free to estimate; *metric invariance* would constrain all factor loadings to be the same across groups; and scalar invariance—considered to be the final empirical step for determining invariance—would constrain all factor loadings and intercepts across groups. These three levels were sequentially tested by first fitting the two groups separately into the same structural model in a multigroup CFA test and inspecting the overall model fit; a good model fit indicated configural invariance. Next, the two groups were fit separately into the same structural model by constraining all factor loadings to be identical across groups, thereby testing whether the construct had the same meaning in both groups. Upon comparing model fitness with the configural model, if a better fit is obtained, then metric invariance has been attested. Finally, a CFA test was conducted where the two groups were fit separately into the same structural model by constraining all intercepts to be equal; if this model fit better than the metric invariance model, then scalar invariance was attested. In principle, if the conditions of the prior tests were not met, conducting subsequent tests was meaningless; however, statisticians have suggested that if partial metric invariance is achieved, further tests could still be carried out, given that full metric invariance is usually rare in empirical cases (Byrne, Shavelson, & Muthén, 1989; Schoot, Lugtig, & Hox, 2012). Under such circumstances, a thorough inspection of invariant factor loadings is necessary.

In the current study, the testing procedures of the CFA models were similar to those discussed in the previous section except that the data was fitted into a multigroup model; the procedural details are thus omitted here. Table 3.1 presents a summary of the test statistics for

measurement invariance. Given that the results showed that none of the modified measurement tools reached a level of scalar invariant, and that only the MISS-AIS measure displayed metric invariance across the Hong Kong and Mainland China samples, subsequent analyses for all tests will be performed either separately for each cultural group or through multi-group analysis. In conclusion, the single-factor measurement structure was valid for both the disgust measure and MISS across both cultural groups, while the two-factor measurement structure of MISS was not valid. Moreover, neither the disgust measure nor the MISS displayed scalar-level invariance across both groups.

Table 3.1. *Measurement Invariance Tests Results*

Measurement	Fitting Indices									Invariant
	χ^2	df	$\Delta\chi^2$	CFI	TLI	RMSEA	SRMR	AIC	BIC	
Disgust										
Configural	33.575	10		.95	.90	.152 [.097, .21]	.045	3197.7	3264.2	YES
Metric	67.782	14	34.207	.886	.838	.194 [.149, .241]	.132	3224	3277.1	NO
MISS										
HIS										
Configural	54.034	28		.957	.936	.095[.056, .133]	.032	4865.46	4958.5	YES
Metric	68.358	34	14.324	.944	.931	.099[.065, .133]	.098	4867.78	4940.89	NO
AIS										
Configural	33.796	28		.939	.909	.092[.052, .131]	.043	5075.377	5168.284	YES
Metric	59.257	34	6.733	.937	.922	.085[.047, .121]	.079	5070.329	5143.327	YES
Scalar	123.537	40	64.28	.791	.780	.143 [.115, .172]	.121	5150.609	5250.153	NO

Note. Disgust = Disgust towards Culture Mixing, MISS = Multicultural Identity Styles, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

Test of Hypothesis 1: Replication. In addition to the tests of measurement models above, the validity of the disgust measure was further examined by testing whether the

pattern of disgusts towards ingroup symbol, outgroup symbol, side-by-side presentation, and mixed symbols found by Cheon et al. (2016) were replicated. Cheon et al. (2016) consistently found that participants rated mixed cultural symbols as the most disgusting compared to side-by-side presentations, outgroup symbols, and ingroup symbols.

For the Hong Kong group, a repeated-measure analysis of variance (ANOVA) revealed that image type had a significant main effect, $F(3, 288) = 80.56, p < .001, \eta^2 = .46, \omega^2 = .22$. Post hoc comparisons indicated that the mixed symbols were rated more disgusting than side-by-side symbols, $M_{dif} = -.69, SE = .09, t = -7.62, d = -.77, p < .001$, which in turn were rated more disgusting than outgroup symbols, $M_{dif} = -.25, SE = .09, t = -2.72, d = -.28, p < .05$, which in turn were rated more disgusting than ingroup symbols. $M_{dif} = -.78, SE = .10, t = -7.97, d = -.81, p < .001$. Moreover, the Bayes factor value ($BF_{10} = 3.46 \times 10^{34}$) resulting from a Bayesian repeated-measure ANOVA strongly supported the main effect of image type; that is, evidence supporting the alternative hypothesis (include intra-subject factors) was 3.46×10^{34} times stronger than that supporting the null hypothesis (random noise model).

Likewise, for the Mainland Chinese group, a repeated-measure ANOVA also confirmed the significant main effect of image type, $F(3, 327) = 63.81, p < .001, \eta^2 = .37, \omega^2 = .20$. Post hoc comparisons indicated that the mixed symbols were rated more disgusting than side-by-side symbols, $M_{dif} = -.33, SE = .07, t = -4.86, d = -.46, p < .001$, which in turn were rated more disgusting than outgroup symbols, $M_{dif} = -.50, SE = .06, t = -7.91, d = -.75, p < .001$; however, outgroup symbols were rated to be as disgusting than ingroup symbols, $M_{dif} = -.08, SE = .05, t = 1.63, d = -.16, p = .64$. In terms of Bayesian repeated-measure ANOVA, the resulting Bayes factor value was $BF_{10} = 2.08 \times 10^{29}$, suggesting overwhelmingly strong support for the main effect of image type. Figure 3.1 presents the patterns of disgust ratings across image types for both groups.

The results above indicate that the replication of the findings by Cheon et al. (2016) were successful and that Hypothesis 1 was supported. To further explore potential associations among the disgust measure (disgust towards culture mixing), MISS, and SWLS, bivariate correlation tests were conducted, additionally supplemented by Bayesian analyses that provided Bayes factor values (BF_{10}) and 95% credible intervals (CRI) as supplementary indices. Moreover, to address the issue of whether the detected correlation effect size was large enough to be meaningful, that is, larger than the SESOI, the TOST equivalence testing method (Lakens, 2019) was conducted on all significant correlations found. Given the explorative nature of Study 1, the conventional SESOI value of $r = .21$ was chosen from previous meta-analysis (Richard et al., 2003). The TOST upper bound was set to $r = .21$ and lower bound was set to $r = -.21$.

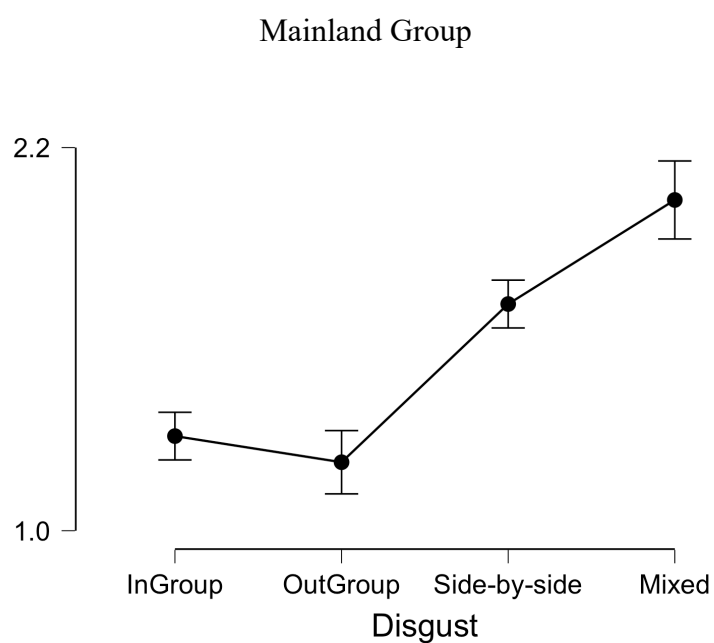
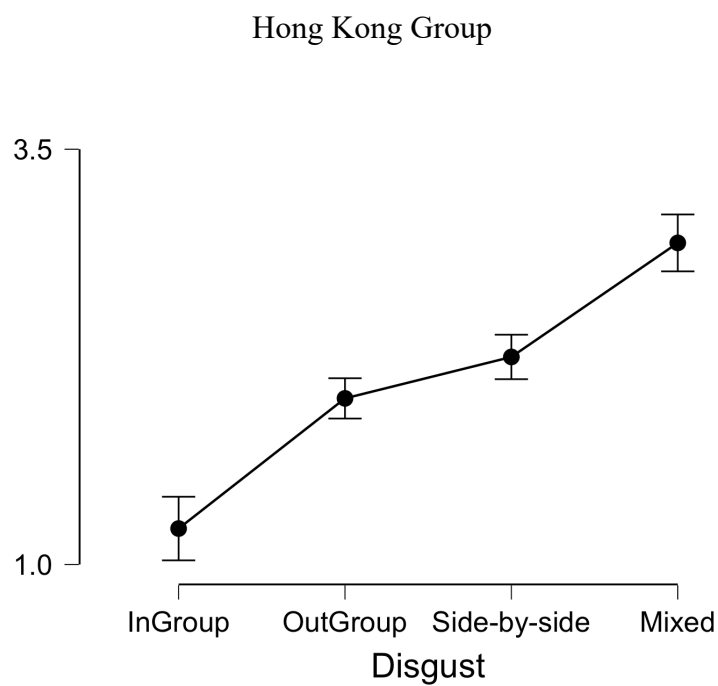


Figure 3.1. Disgust ratings for four types of image stimuli in Study 1 for Hong Kong and Mainland Chinese university students.

Tests of Hypotheses 2a and 2b: MISS and disgust. Pearson correlation tests were conducted for the mean scores of the MISS subscales and the disgust measure. Table 3.2 shows that the mean score of disgust towards mixed symbols in the Hong Kong sample was negatively correlated with both the mean scores of HIS, $r = -.52, p < .001, 95\% \text{ CI} = [-.65, -.36], BF_{10} = 268823.12, 95\% \text{ CRI} = [-.65, -.35]$, and AIS, $r = -.26, p < .05, 95\% \text{ CI} = [-.43, -.06], BF_{10} = 3.0, 95\% \text{ CRI} = [-.43, -.07]$. On the other hand, Table 3.3 shows that the mean score of disgust towards mixed symbols in the Mainland Chinese sample was marginally correlated with the mean score of HIS, $r = -.18, p = .06, 95\% \text{ CI} = [-.36, .00], BF_{10} = .74, 95\% \text{ CRI} = [-.35, .00]$, but not related to AIS, $r = -.04, p = .68, 95\% \text{ CI} = [-.23, .15], BF_{10} = .13, 95\% \text{ CRI} = [-.22, .15]$. These results suggest that evidence supporting the associations between the identity styles and disgust towards culture mixing is strong in the Hong Kong sample but insufficient in the Mainland sample.

Given that significant bivariate correlations were only demonstrated in the Hong Kong sample, equivalence tests were conducted only for that group. Test results showed that the correlation between HIS and disgust was significantly different from the TOST upper bound, $p < .001$, but not different from the TOST lower bound, $p = 1$, and the 90% CI upper bound of r was lower than the TOST lower bound, suggesting that the correlation was not equivalent, also different from SESOI. Similarly, the correlation between AIS and disgust was significantly different from the TOST upper bound, $p < .001$, but not the TOST lower bound, $p = .68$; however, the 90% CI upper bound, $r = -.09$, was higher than the TOST lower bound, suggesting that the correlation was non-zero, but not significantly different from the SESOI. In conclusion, TOST testing suggested that the negative relation between HIS and disgust was robust and meaningful, while the relation between AIS and disgust was relatively small but still significant.

As HIS and AIS were highly correlated in both Hong Kong and Mainland Chinese samples, they were both entered as covariates in linear regression analysis predicting disgust. The results show that, in the Hong Kong sample, model $R^2 = .28$, HIS negatively predicted disgust, $\beta = -.62$, $p < .001$, 95% CI = $[-.95, -.43]$, AIS did not predict disgust, $\beta = .20$, $p = .21$, 95% CI = $[-.11, .51]$; in the Mainland Chinese sample, model $R^2 = .07$, HIS negatively predicted disgust, $\beta = -.42$, $p < .01$, 95% CI = $[-.65, -.10]$, AIS marginally and positively predicted disgust, $\beta = .29$, $p = .06$, 95% CI = $[-.02, .56]$.

These results support Hypothesis 2a; Hypothesis 2b was partially supported due to a non-significant association observed in the Hong Kong sample.

Tests of Hypothesis 3a and 3b: MISS and SWLS. As shown in Table 3.2, the mean score for SWLS in the Hong Kong sample was marginally correlated to both HIS, $r = .19$, $p = .06$, 95% CI = $[-.01, .38]$, $BF_{10} = .71$, 95% CRI = $[-.01, .37]$, and AIS, $r = .17$, $p = .10$, 95% CI = $[-.04, .35]$, $BF_{10} = .46$, 95% CRI = $[-.04, .35]$. On the other hand, as shown in Table 3.3, the mean score for SWLS in the Mainland Chinese sample was marginally correlated to HIS, $r = .18$, $p = .06$, 95% CI = $[-.01, .36]$, $BF_{10} = .72$, 95% CRI = $[-.01, .35]$, but not to AIS, $r = .12$, $p = .20$, 95% CI = $[-.07, .30]$, $BF_{10} = .27$, 95% CRI = $[-.07, .30]$. Similar to Hypothesis 2a and 2b, linear regression analyses were conducted but the results suggested HIS and AIS were non-significant predictors ($ps > .1$) when entered together predicting SWLS for both samples. Given the weakness of the evidence provided, Hypotheses 3a and 3b are not supported.

Table 3.2. *Pearson Correlations of Main Measures in Study 1 for Hong Kong Group*

	Disgust	HIS	AIS
HIS	-0.518 ***		
AIS	-0.256 *	0.656 ***	
SWLS	-0.067	0.190	0.165

Note. Disgust = Disgust towards Culture Mixing, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3.3. *Pearson Correlations of Main Measures in Study 1 for Mainland Group*

	Disgust	HIS	AIS
HIS	-0.184 †		
AIS	-0.040	0.797 ***	
SWLS	-0.123	0.183 †	0.124

Note. Disgust = Disgust towards Culture Mixing, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

In Study 1, the measure of disgust towards culture mixing used in Cheon et al. (2016) was modified by selecting unique Hong Kong and Mainland Chinese cultural symbols and mixing them into similar formats. Moreover, this measure was also validated for both Hong Kong and Mainland Chinese samples. Potential negative relations between the hybrid cultural identity style and disgust towards culture mixing were discovered. Although there was a lack

strong evidence to support the association between cultural identity styles and life satisfaction, this relationship will be tested further in the subsequent longitudinal studies.

Unlike previous studies that used mixed Western-Chinese cultural symbols, the present project aimed to examine a sub-regional mixture of Chinese culture—Hong Kong and Mainland Chinese cultural symbols—tackling a cultural distinction that is much subtler than those discussed by previous works, whose differences might be meaningful only to local residents. Five pairs of distinct cultural symbols for Hong Kong and Mainland Chinese culture were chosen through group discussions with corresponding group members and then combined in accordance with the concept of “intrusive” mixing found in previous studies, with ingroup cultural symbols appearing as the background or main theme of the stimuli, while the outgroup symbol was mixed in as but a small portion of the stimuli. Given that the referent for the “outgroup” was different depending on the target group, the five pairs of stimuli were therefore not matched in content between the two groups; consequently, the appearance of intergroup differences was not surprising.

The disgust measure was tested in Hong Kong among both local and Mainland Chinese samples, and was validated through demonstrating a good factor structure, as well as replicating the rating pattern of the previous study by Cheon et al. (2016). Although the disgust measure did not show metric invariance across the two groups, it retained good factor structure within each group. Moreover, the results suggest that, despite mixed stimuli always being perceived as the most disgusting compare to other stimuli, each cultural group had distinctive reactions toward those other stimuli; whereas Hong Kong participants rated outgroup Mainland Chinese symbols as more disgusting than ingroup symbols, Mainland Chinese participants did not significantly differentiate between their ingroup symbols and outgroup Hong Kong symbols. Given that except for mixed cultural symbols being consistently being rated as the most disgusting, Cheon et al. (2016) found that differences

between the other three stimuli types were non-significant, we believe that this non-significance is attributed to group dynamics. The contexts of historic or contemporary intergroup conflicts often have the effect of heightening negative perceptions of the outgroup culture; under such contexts, ingroup members may therefore perceive outgroup symbols to be more disgusting as compared to a no-conflict context. In the case of Hong Kong locals, it is possible that the negative attitudes perceiving Mainland culture as intrusive and hostile elevated the baseline of disgust for Hong Kong participants. On the other hand, Mainland Chinese participants did not differentiate between ingroup Chinese symbols and outgroup Hong Kong symbols in terms of disgust ratings. This phenomenon probably indicates that Mainland Chinese immigrants and sojourners either do not perceive the host Hong Kong culture to be hostile, given that their primary motivations for immigrating or travelling to the city are to seek better economic and educational opportunities, or even regard Hong Kong culture to be a subsidiary part of Chinese culture; indeed, members of the sample of Mainland Chinese selected for this study were highly willingly to integrate into Hong Kong society (see Appendix A for acculturation attitude results). The differences in disgust ratings between Hong Kong and Mainland Chinese participants therefore suggests that basic reactions to cultural contamination may not be the only contributing factor to disgusted reactions towards Hong Kong-Mainland culture mixing; extra variance can also be attributed to the ingroup perception of a particular outgroup culture.

In the current project, both Hong Kong locals and Mainland Chinese in Hong Kong demonstrated highest disgust towards culture mixing, and both groups were dealing with identity conflicts. However, the cultural positions and cultural experiences of these two groups were different.

For Mainland Chinese in Hong Kong, they may be regarded as typical immigrants / sojourners in acculturation settings. Especially among university students in our studies,

some of them might want to stay in Hong Kong while others planned to leave after graduation, but in fact all of them have to live in Hong Kong for several years as a minority group, thus they might position themselves as typical immigrant group that needs to adapt to the Hong Kong society. So, Hong Kong culture to them was perceived as a host / majority culture that they need to adapt to. On the other hand, when these participants are contrasting Hong Kong culture to Mainland culture, it may be perceived as differences between two sub-Chinese cultures. That is, for Mainland Chinese, Hong Kong culture was considered as part of the larger Chinese culture. Even if this culture was unfamiliar, distinct, and Westernized to most Mainland Chinese, it was possibly considered as similar to other unique minority cultures in China. As such, for Mainland Chinese the aversive reaction to the mixture of these two cultures could be buffered as Hong Kong culture was perceived as less foreign; consistent with this, we found that Hong Kong-Mainland culture mixing was perceived as less disgusting by Mainland Chinese sojourners compared to Hong Kong residents and Mainland Chinese did not differentiate between standalone Mainland cultural symbols and Hong Kong symbols on disgust ratings. However, the rising tension and intergroup conflicts between these two groups may reinforce the boundary between Hong Kong and Mainland Chinese cultures. Discrimination and bias toward Mainland Chinese immigrants were reported in previous studies (Leung, Leung, & Chan, 2007; Hue, 2008; Ma, 2009; I. F. S. Ng, Lee, Wong, & Chou, 2015), and perhaps such negative experiences kept Hong Kong culture as partially “foreign” and “exclusive” even it was considered as a Chinese sub-culture, thus the mixture with Mainland Chinese culture was perceived more disgusting than standalone ones.

For Hong Kong residents, they may see themselves as the majority group when contrasting to Mainland Chinese immigrants in Hong Kong, but they could also see themselves as the minority when contrasting to P.R.C in general when facing the issue of

assimilation to China after the 1997 handover. As majority, Hong Kong locals might consider the Mainland Chinese culture as a typical “foreign” culture that is brought in by Mainland immigrants and is “contaminating” their ingroup culture; as minority, they might face the fear of ingroup culture being assimilated into Mainland Chinese culture and being eliminated. These reactions were commonly seen when simplified Chinese was mistakenly used in public or Mandarin was implemented into the education curricula. Therefore, for Hong Kong locals, the negative reactions to the outgroup Mainland culture was reasonably expected, and their disgust feelings to culture mixing could possibly be enhanced by this pre-existing negative perception, no matter whether they place themselves in majority position or minority position. This presumption was consistent with our findings that, although Hong Kong participants rated the mixed cultural symbols the most disgusting, they also rated the outgroup (Mainland) standalone symbols more disgusting than ingroup (Hong Kong) symbols.

Given the unique cultural positions discussed above, the primary identity conflict for Hong Kong locals is the negotiation between adopting the superordinate “Chinese national” identity and maintaining their “Hongkonger” identity; whereas for Mainland Chinese in Hong Kong, as a typical immigrants group, the conflict is between assimilating into the “Hongkonger” identity and maintaining their “Mainlander” identity. For Hong Kong locals, the Chinese identity was possibly placed in a majority position, which was perceived as a superordinate category that includes Hong Kong and to assimilate Hongkonger identity; for Mainland Chinese immigrants, these two identities might be considered as mutually exclusive: “Hongkonger” as similar as other sub-group identities in China, like “Shanghainese”, while “Mainlander” as a distinct sub-group identity that is contrasting to, but not including “Hongkonger”. Therefore, for both of these cultural groups, how they place these cultural identities depends on and reflects how they perceive these two cultures, and

consequently affects how they feel about the mixture of these two cultures. Both identities are related to the intergroup relations between Hong Kong and Mainland China, and the way of managing these identities also represents individuals' attitudes toward the outgroup.

This may also have implications for the meaning of HIS and AIS within the two participant groups in these studies. In Study 1, we observed a relatively strong and negative association between HIS and disgust among Hong Kong participants, but for Mainland Chinese this association was relatively weak. Although MISS involves two specific cultural identities, it aimed to measure two forms of identity integration process, which represent functional attempts by immigrants to integrate into host society (Ward, Ng, Szabo, Qumseya, & Bhowon, 2018). This process is a pattern of how to manage two identities rather than strength of identifying with each identity. For example, among Hong Kong residents, HIS measures how strong people perceive themselves “being Hongkonger and being Chinese are intermingled”; AIS measures “I can be Hongkonger or Chinese depending on the situation”. Thus, responses to these statements did not represent the simple strength of identifying with one of the identities or combination of these two but indicated also degrees of viewing these identities as compatible or mutually exclusive to one other at one time moment. Although in the current study's adaptation of the MISS the two identity pairs for these two cultural groups were different, MISS captured how people perceive the relationship between these two identities. Specifically, for Hong Kong group, it was about blending or shifting between a superordinate identity and a subordinate identity that were not in equal positions, while for Mainland Chinese it was about an identity of origin and another identity of host society that were mutually exclusive.

In the current project, both cultural groups were facing the challenge of managing a minority ingroup identity and a majority outgroup identity, so it is possible that a similar identity integration process exists between these two groups. In general MISS quantified the

overall acceptance of two identities, and HIS and AIS were not significantly different at mean level within each cultural group, but after controlling HIS and AIS for each other, the unique variation represents the distinctive functions of the two styles. Given the above mechanisms, in Ward et al. (2018) the similar adaptation functions of MISS (HIS predicted positive outcomes and AIS predicted negative outcomes) were observed across three different ethnic groups of immigrant minorities with different identity pairs (the same host cultural identity with different ethnic identities); thus, this pattern could also exist and be compared among Hong Kong locals and Mainland Chinese sojourners when the two groups were considered as placed in a minority position.

Among these two cultural groups, both of the two groups are within Chinese culture, and both identities were closely related to how participants view the relationship between Hong Kong and Mainland China and how they perceived the cultural differences. In conclusion, although MISS was adapted differently for each cultural group, the underlying identity integration process was similar across groups and could be compared.

On the other hand, how HIS and AIS were related to disgust showed differences between Hong Kong and Mainland Chinese participants in Study 1. This may indeed be because the outgroup culture was in different positions for the two groups, for example, the ingroup identity and cultural symbols for Mainland Chinese were both regarded as in a minority position that acculturated in Hong Kong society, but for Hong Kong locals the ingroup identity was regarded as a minority identity that facing assimilation into the outgroup identity while the ingroup cultural symbol was regarded as a majority culture that being contaminated by the outgroup culture.

In summary, the cultural positions and cultural identities involved in the perception of Hong Kong-Mainland culture mixing were non-identical between these two groups. Thus, this difference could explain the non-identical associations among disgust towards culture

mixing, HIS and AIS between the two cultural groups. However, despite the distinct manifestations in the process, the similar associations between the way of managing two identities and disgust suggested their important adaptative functions in cultural adaptation processes.

Although the correlation between cultural identity styles and life satisfaction was marginally significant, strong evidence to support the association between them was not found in the present study. This may be due to the limited sample size observed for both groups, particularly for the Hong Kong group. Another reason could be that the Mainland Chinese sample surveyed consisted of mixed cohorts of university students, with participants representing a variety of living experience in Hong Kong. To fill in these statistical and analytical gaps, in the following study, we implement a longitudinal design to investigate first-year Mainland Chinese university students in Hong Kong, exploring the potential associations between cultural identity styles and life satisfaction.

Chapter 4: Study 2 – Longitudinal Studies of Mainland Chinese Students in Hong Kong

Overview

In Study 1, we attempted to modify and validate the disgust measure of culture mixing and the Multicultural Identity Styles Scale (MISS), in addition to establishing the associations between the two measures, as well as the Satisfaction with Life Scale (SWLS). Tests were conducted among both Hong Kong and Mainland Chinese students at the Education University of Hong Kong and City University of Hong Kong. The results found that both groups perceived mixed cultural symbols as more disgusting than separate presentations of cultural symbols, confirming our hypothesis that the sub-regional culture mixing of Hong Kong and Mainland cultures triggered the universal reaction observed in previous studies. On the other hand, these two groups also differed in their reactionary patterns, as Hong Kong participants perceived outgroup Mainland Chinese symbols to be more disgusting than ingroup Hong Kong symbols, while Mainland Chinese participants did not significantly differentiate between both sets of symbols. The study concluded by proposing an association between disgust towards culture mixing and how Hong Kong participants manage both their local identity and the national identity.

Despite the findings made in Study 1, how disgust towards culture mixing associates with life satisfaction in the acculturation process remains unclear. As dynamic strategies of negotiating among cultural identities, both the hybrid identity style (HIS) and the alternating identity style (AIS) can change during the acculturation process (Szabó & Ward, 2019). To examine such changes and investigate the causal relations between HIS, AIS, disgust towards culture mixing and life satisfaction; we propose to test our hypotheses in longitudinal studies. In the following pair of studies, we first observed these associations through the perspective of Mainland Chinese university students by conducting two two-time-point longitudinal studies among a group of first-year students. Study 2a recruited a small group of first-year

students through the subject pool of the Department of Psychology and found a potential negative cross-lagged impact of disgust on life satisfaction. Study 2b tested the same measures on a larger sample from a different cohort; the results indicated that not only was the aforementioned negative cross-lagged impact of disgust on life satisfaction observed, but also the positive cross-lagged impact of HIS and negative cross-lagged impact of AIS on disgust respectively. Due to subject pool restrictions, Study 2a was only able to take place over a 3-month interval; this temporal limitation was compensated for in Study 2b amid the availability of more resources.

Given the importance of disgust regarding intergroup relations (Rottman et al., 2018), it is expected to have a significant impact on the acculturation process. How minority and majority groups perceive and interact with each other shapes the acculturation context and potentially the life satisfaction of people involved in the process. As discussed in Chapter 2, the two multicultural identity styles perform distinct functions in acculturation process. Previous research has found that HIS predicts positive adaptation outcomes and AIS negative outcomes (Ward et al., 2018), that HIS associates with positive intergroup evaluations and AIS negative evaluations (T.-W. Ng et al., 2019), and that intercultural adaptive ability has positive cross-lagged impacts on HIS and negative cross-lagged impacts on AIS (Szabó & Ward, 2019). In line with these patterns, Study 2 expect HIS to be adaptive and AIS to be maladaptive in the acculturation process. The hypotheses proposed for the study are:

Hypothesis 1a. The hybrid cultural identity style (HIS) has negative cross-lagged impacts on disgust towards culture mixing, as quantified by the disgust measure.

Hypothesis 1b. The alternate cultural identity style (AIS) has positive cross-lagged impacts on disgust towards culture mixing.

Hypothesis 2. Disgust towards culture mixing has negative cross-lagged impacts on satisfaction, as quantified by the SWLS.

Study 2a – A 3-Month Longitudinal Study of First-Year Mainland Chinese University Students in Hong Kong

Method.

Participants. Forty-two first-year undergraduate Mainland Chinese students, all of which self-identified as never having lived in Hong Kong before, were recruited from the Department of Psychology at the Education University of Hong Kong (EdUHK) for the study.⁴ Both recruitment and the distribution of all questionnaires were carried out in September, thereby qualifying all participants as “freshmen.” The students participated in fulfillment of partial credit for their program courses. They were informed that the study was separated into two parts and that a questionnaire would be sent to them for each part, the first one in September and the second one in December. The two identical questionnaires each took around 20 minutes to complete, with all questions presented in Simplified Chinese. The measurement tools used for specific question items will be described in subsequent sections.

Of the 42 participants recruited at the first time point (T1), 2 of them dropped out by the second time point (T2). In addition, two attention check questions were randomly inserted into the questionnaire. Based on their responses, 2 participants failed at least one attention check question; they were consequently regarded as inattentive and their responses were removed from the final data analysis. The final sample consisted of 38 Mainland Chinese students, of which 8 were male and 30 were female. The mean age (M_{age}) of the participants was 18.03 years, the standard deviation (SD_{age}) was .59 years and the range was 17-20 years.

⁴ Participants were recruited from the departmental subject pool, as a result the study was limited with maximum participants of 50 and maximum duration of four months.

*Measures.*⁵

SWLS. Life satisfaction was measured using the scale developed by Diener et al. (1985) that was also applied in Study 1. All question items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score. The SWLS measure yielded good reliability at both time points. At T1, McDonald’s $\omega = .89$ and Cronbach’s $\alpha = .88$; similarly, at T2, McDonald’s $\omega = .88$ and Cronbach’s $\alpha = .86$.

MISS. The multicultural identity styles were measured using the same scale developed by Ward et al. (2018) that was also applied in Study 1, but treated as two separate subscales. In the present study, the two identities measured in the original scale were replaced with “Hongkonger” and “Mainlander” for the Mainland participants. The same question items used in Study 1 were presented, with all items being rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score. The MISS measures yielded good reliability at both time points. At T1, McDonald’s $\omega = .86$ and Cronbach’s $\alpha = .85$; similarly, at T2, McDonald’s $\omega = .90$ and Cronbach’s $\alpha = .89$.

Disgust measure. The disgust measure used in Study 1 was adopted for the current study, but with only three groups of images presented in each trial, namely Mainland Chinese symbols (ingroup), Hong Kong symbols (outgroup), and mixed symbols. The “side-by-side” stimuli images were removed for several reasons. First, the variable of interest across all studies in the current project was disgust towards mixed stimuli rather than other types. Second, the pattern of greater disgust towards mixed stimuli compared to “side-by-side” stimuli had been consistently validated in Study 1; there was therefore no need to retain the “side-by-side” stimuli as a point of comparison. Lastly, reducing the number of stimulus

¹In Study 2a, apart from the measurement tools discussed here we also measured Acculturation Attitude (Berry et al., 2006), Psychological Symptoms and School Adjustment (Berry et al., 2006), Behavioral CQS (Ang et al., 2007), Revised Multi-group Ethnic Identity Measure (Roberts, Phinney & Masse, 1999). Due to the hypotheses of interest and limited space, these measures were not discussed in the chapter. A brief report of descriptive statistics could be found in Appendix C.

items would increase the efficiency of the measurement and possibly improve data quality. The final experiment presented three types of images—ingroup (Mainland Chinese), outgroup (Hong Kong), and mixed symbols—in two blocks per set of images, with Block 1 containing the two types of simplex images and Block 2 containing the mixed image. The exact order of presentation within Block 1 was randomized. The question “To what extent do you think this picture typically represents Hong Kong or Mainland China?” was presented to assess the typicality of the image regarding the represented culture, with responses being rated on a 6-point Likert scale from “typically represents Hong Kong” (1) to “typically represents Mainland China” (6). The internal consistency of the disgust measure for the mixed images was deemed acceptable by the relevant indicators. At T1, McDonald’s $\omega = .79$ and Cronbach’s $\alpha = .72$, whereas at T2, McDonald’s $\omega = .87$ and Cronbach’s $\alpha = .84$.

Demographics. The last section of the survey questionnaire included several questions about the participants’ age, gender, year of study, permanent residency status, and some other non-identifiable information.

Data analysis plan.

Data preparation. Questionnaires were set up online at both time points using SurveyMonkey. Individual cases from different time points were matched according to student identification numbers provided at both time points. Data sets were combined and screened using SPSS. Data screening was done in SPSS based on the two attention check questions, although this excluded data was retained in data sets and can be identified using filter variables.⁶

Analytic strategy. Descriptive statistics and ANOVAs were performed separately for T1 and T2 using JASP. The cross-lagged panel model was tested using Lavaan in R, and the standard error was estimated using the bootstrap resampling method with 5000 draws.

⁶ Data sets are available on OSF.

Results.

Descriptive statistics and replication. Table 4.1 shows the means and standard deviations for the measures at both time points, while Table 4.2 shows the correlations between the two MISS subscales, the disgust measure, and SWLS scores at both time points. With the exception of the two MISS subscales, weak cross-sectional correlation patterns were observed overall at a given time point. On the other hand, relatively strong longitudinal correlation patterns were observed across both time points; for example, the disgust measure and the MISS subscales were significantly correlated across T1 and T2.

Table 4.1. *Means and Standard Deviations of Main Measures in Study 2a (N = 38)*

Measure	T1		T2	
	Mean	SD	Mean	SD
Disgust				
Mainland China	1.13	.19	1.15	.25
Hong Kong	1.05	.13	1.11	.25
Mixed	1.43	.67	1.60	.84
MISS				
HIS	4.79	1.08	4.68	1.06
AIS	4.39	.98	4.24	1.03
SWLS	4.85	1.27	4.64	1.17

Note. Disgust = Disgust towards Culture Mixing, MISS = Multicultural Identity Styles, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

Table 4.2. *Pearson Correlations of Main Measures in Study 2a (N = 38)*

	1	2	3	4	5	6	7
1.T1 Hybrid	1						
2.T1 Alternate	0.679 ***						
3.T1 Disgust	-0.338 *	-0.177					
4.T1 SWLS	0.180	0.061	-0.308				
5.T2 Hybrid	0.588 ***	0.523 ***	-0.166	0.021			
6.T2 Alternate	0.490 **	0.630 ***	-0.085	-0.164	0.775 ***		
7.T2 Disgust	-0.297	-0.218	0.727 ***	-0.075	-0.235	-0.115	
8.T2 SWLS	0.068	-0.003	-0.452 **	0.604 ***	0.040	-0.186	-0.386 *

Note. Disgust = Disgust towards Culture Mixing, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

* $p < .05$, ** $p < .01$, *** $p < .001$

Two repeated-measure ANOVAs regarding image type as an intra-subject factor were conducted separately for both time points to test whether the disgust measure was capable of replicating previous findings. The main effect of image type was significant at T1, $F(2, 74) = 10.04, p < .001, \eta^2 = .21$. Post hoc testing with Bonferroni correction indicated that the ingroup symbol was rated as less disgusting than the mixed symbol, $t = -2.72, d = -.44, p < .05$, as was the outgroup symbol, $t = -3.57, d = -.58, p < .01$, but the ingroup symbol was rated as more disgusting than the outgroup symbol, $t = 3.58, d = .58, p < .01$. The main effect of image type was also significant at T2, $F(2, 74) = 15.71, p < .001, \eta^2 = .30$. Post hoc testing with Bonferroni correction indicated that the ingroup symbol was rated as less disgusting than the mixed symbol, $t = -3.94, d = -.64, p < .01$, as was the outgroup symbol, $t = -4.12, d = -.67, p < .001$; however, there was no significant difference in disgust ratings between ingroup and outgroup symbols, t

$= 1.28, d = .21, p = .63$. Testing results confirmed that the mixed symbol was rated as the most disgusting image type at both time points, which is consistent with the findings of previous studies.

Cross-lagged panel model. The two-time-point cross-lagged panel model (Kenny, 1975, 2014) was adopted to test the hypotheses of the current study. Path analysis was applied by combining three cross-lagged regressions into one model to reduce type I error rate. More specifically, the T2 scores for each of the four variables (HIS, AIS, disgust, and SWL) were regressed on their corresponding T1 score in conjunction with the T1 scores for the other three variables. Figure 4.1 shows the resulting structural model; for the sake of clarity, only significant paths are shown in the diagram.

From such a regression configuration, the fully cross-lagged panel model was produced as a saturated model with zero degree of freedom and no available fit index for reference. Consequently, the current model further specified one error covariance—namely the correlation between T2 HIS and T2 SWLS—as not correlated (fixed to zero) to release one degree of freedom. This correlation was chosen because it was empirically demonstrated to small and non-significant in both the bivariate correlation matrix and the multiple regressions of the path model (Napper, Kenney, Lac, Lewis, & LaBrie, 2014). Fixing this correlation as zero would not only have no impact on the overall model fit nor compromise the hypotheses, but also permit the application of fit indices for model fit reference.

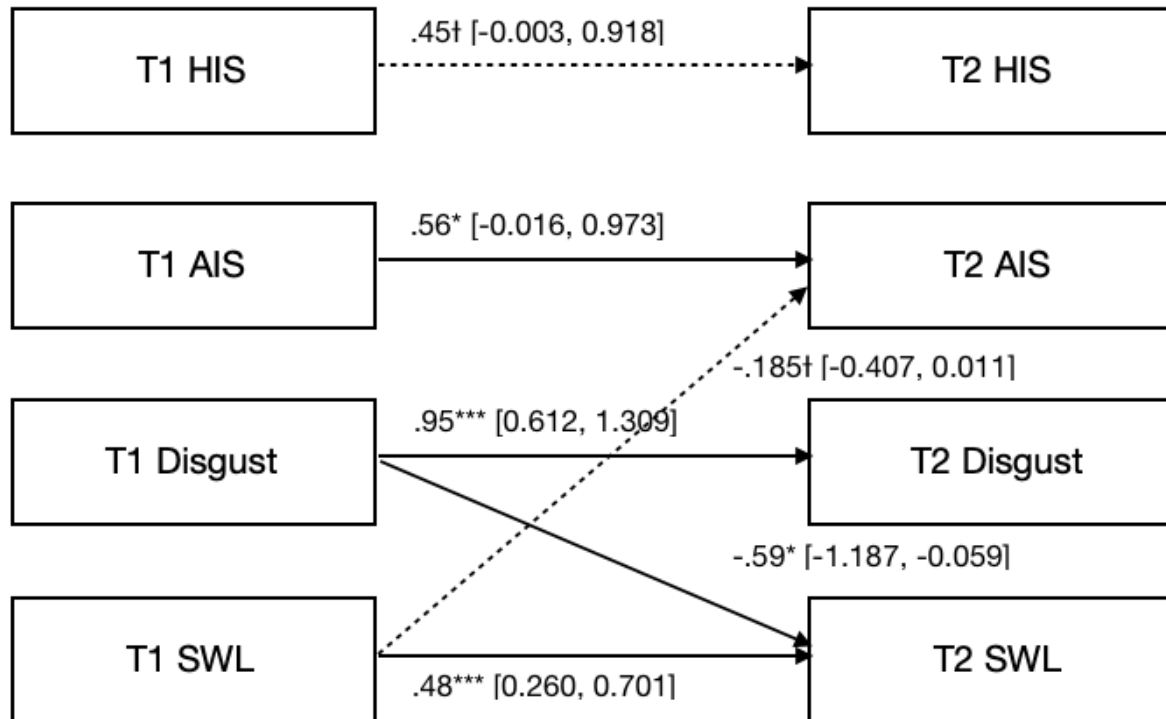


Figure 4.1. Cross-lagged panel model with significant path coefficients for the variables of Study 2a ($N = 38$). Unstandardized path coefficients were marked with bias-corrected 95% CIs of 5000 bootstrap samples. Disgust = Disgust towards Culture Mixing, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Test of Hypothesis 1a. After controlling for other T1 variables, neither T1 HIS predicted T2 disgust, $B = .01$, $SE = .31$, $p = .98$, 95% CI = [-0.545, 0.679], nor T1 disgust predicted T2 HIS, $B = -.01$, $SE = .1$, $p = .93$, 95% CI = [-0.193, 0.204]. Indeed, only T1 disgust predicted T2 disgust, $B = .95$, $SE = .18$, $p < .001$, 95% CI = [.612, 1.309]. Consequently, given that hybrid cultural identity management styles did not show cross-lagged effects on disgust towards culture mixing, Hypothesis 1a was not supported for this sample.

Test of Hypothesis 1b. After controlling for other T1 variables, T1 AIS did not predict T2 disgust, $B = -.07$, $SE = .1$, $p = .46$, 95% CI = [-0.31, 0.084], given that only T1 disgust predicted T2 disgust as stated above. T1 disgust also did not predict T2 AIS, $B = -.01$, $SE = .20$,

$p = .98$, 95% CI = [-0.342, 0.513]. Consequently, given that alternating cultural identity management styles did not show cross-lagged effects on disgust towards culture mixing, Hypothesis 1b was also not supported for this sample.

Test of Hypothesis 2. After controlling for other T1 variables, T1 disgust negatively predicted T2 SWL, $B = -.59$, $SE = .28$, $p < .05$, 95% CI = [-1.187, -0.059], and T1 SWL positively predicted T2 SWL, $B = .48$, $SE = .11$, $p < .001$, 95% = [0.26, 0.701], whereas T1 SWL did not predict T2 disgust, $B = .11$, $SE = 0.08$, $p = .19$, 95% CI = [-0.05, 0.273]. Consequently, given that disgust towards culture mixing showed negative cross-lagged effects on satisfaction with life, Hypothesis 2 was supported for the sample.

Moreover, after the error covariance between T2 HIS and T2 SWLS was fixed to zero, the path model yielded an excellent fit, $\chi^2 = 0.52$, $df = 1$, $p = .47$, CFI = 1, TLI = 1.1, RMSEA = 0, $p_{close-fit} = .49$, 95% CI = [0, .382], SRMR = .013, providing additional evidence that the path model fits the data well. In summary, Study 2a did not observe the cross-lagged impacts of HIS and AIS on disgust, but instead identified the cross-lagged impact of disgust on satisfaction with life.

Discussion. Study 2a extends research on cultural identity styles and disgust towards culture mixing in acculturation settings by examining the interrelations among HIS, AIS, the disgust measure, and the SWLS across two time points. The negative cross-lagged effects of disgust on life satisfaction were observed, while the cross-lagged effects of HIS and AIS on disgust were not found to be significant.

Given that the first time point was the starting point of university life for all first-year Mainland Chinese sojourner students, it was therefore used as a baseline in the study design. It was hypothesized that how these first-year students managed their “Mainlander” and “Hongkonger” identities would affect their perception of culture mixing, in particular the notion that Hong Kong cultural symbols would “contaminate” Mainland cultural symbols, and

that furthermore such perceptions would affect their life satisfaction after living in Hong Kong for a period of time. According to previous research, HIS indicates an adaptive style of integrating the host and ethnic heritage cultural identity that leads to better acculturation outcomes, while AIS indicates maladaptive identity conflicts and leads to opposite outcomes (Ward et al., 2018). Consistent with these patterns, the current study hypothesized that after three months, HIS would negatively predict disgust while AIS would positively predict disgust, and consequently disgust would negatively predict SWLS.

Statistical analysis results indicate that all T1 scores for the variables were significantly correlated to their T2 scores, demonstrating the good consistency of all measures. The cross-lagged model observed that the T1 disgust score negatively predicted T2 SWLS after controlling for T1 SWLS, but T1 SWLS did not predict T2 disgust even after controlling for T1 disgust. These correlations indicate a cross-lagged effect of disgust on SWLS, meaning that Mainland Chinese freshmen students entering Hong Kong with a high level of disgust towards culture mixing had lower level of life satisfaction after living in Hong Kong for three months. This finding was consistent with our hypothesis, supporting the negative effects of disgust reactions towards culture mixing during the acculturation process. For immigrants, holding negative perceptions towards the host culture that they are attempting to live in or adapt to is dysfunctional, as they must deal with disgust reactions and other negative emotions triggered in daily life.

Both the HIS and AIS scores at T1 were positively associated with their corresponding T2 scores. Yet after controlling for AIS, disgust, and SWLS at T1, HIS did not predict any of the dependent variables at T2; T1 AIS also did not make any predications even after controlling for other variables at T1. The cross-lagged impact of cultural identity styles on disgust or SWLS was therefore not observed. These results may be possibly tempered by the limited sample size and the relatively short duration (3 months) of the research design. It is possible that the change

of hybridizing or shifting between Hong Kong and Mainland Chinese identities has not yet emerged during this short time period as most of the Mainland Chinese students continued to hold a stable perception of themselves as “Mainlander.” Such limitations of the research design in Study 2a were rectified in Study 2b by increasing the sample size and extending the study duration to six months.

Study 2b – A 6-Month Longitudinal Study of First-Year Mainland Chinese University Students in Hong Kong

In Study 2b, the same method and measurements used in Study 2a were reproduced with a different cohort of first-year students from Mainland China that did not participate in Study 2a. Given the limitations of Study 2a, this study set out to compensate for those shortcomings by recruiting a larger sample and extending the duration of the study to six months. With these changes, Study 2b is expected to replicate the cross-lagged effect of disgust on life satisfaction found in Study 2a, hopefully extending those findings to establish the relation between MISS and disgust towards culture mixing. The same hypotheses from Study 2a are tested once again, reproduced below as follows:

Hypothesis 1a. The hybrid cultural identity style (HIS) has negative cross-lagged impacts on disgust towards culture mixing, as quantified by the disgust measure.

Hypothesis 1b. The alternate cultural identity style (AIS) has positive cross-lagged impacts on disgust towards culture mixing.

Hypothesis 2. Disgust towards culture mixing has negative cross-lagged impacts on satisfaction, as quantified by the SWLS.

Method.

Participants. A sample of 108 first-year undergraduate and postgraduates Mainland Chinese students were recruited from EdUHK for the study. Recruitment was carried out during

October and the distribution of all questionnaires during November, thereby qualifying all participants as “freshmen.” At the first time point (T1), they were informed that the study was separated into two parts. Upon completion of the survey questionnaire at a computer lab, each of them received HK\$50 as compensation and were informed that they would be asked to complete another questionnaire six months later (T2), upon which they would receive an additional HK\$50 as compensation. The two identical questionnaires at both time points were presented in Simplified Chinese. The measurement tools used for specific question items will be described in subsequent sections.

Of the 108 participants recruited at the T1, 47 of them dropped out by T2, representing a dropout rate of 43.5%; however, the exclusion of data for these dropout participants did not significant impact the T1 SWLS, MISS, and disgust scores. In addition, two attention check questions were randomly inserted into the questionnaire; based on their responses, several participants failed at least one attention check question at either time point and consequently regarded as inattentive. Moreover, several other participants self-identified as having lived in Hong Kong before enrolling at the university. A total of 13 participants were removed from the final data analysis for these two reasons. The final sample consisted of 48 Mainland Chinese students, of which 4 were male and 48 were female. The mean age (M_{age}) of the participants was 21.77 years, with a standard deviation of 4.1 years and a range of 17-35 years.

Measures.⁷

SWLS. Life satisfaction was measured using the scale developed by Diener et al. (1985) that was also applied in Studies 1 and 2a. All question items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score. The SWLS measure yielded good reliability at T1 and excellent reliability at T2. At T1,

⁷ In Study 2b, apart from the what discussed above, the same additional measurement tools as Study 2a were used. A brief report of descriptive statistics could be found in Appendix C.

McDonald's $\omega = .90$ and Cronbach's $\alpha = .88$; at T2, McDonald's $\omega = .93$ and Cronbach's $\alpha = .92$.

MISS. The multicultural identity styles were measured using the same scale developed by Ward et al. (2018) according to the methods applied in Study 2a that treated HIS and AIS as two separate subscales. The same question items used in Study 1 were presented, with all items being rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score. The MISS measures yielded excellent reliability at both time points. At T1, McDonald's $\omega = .93$ and Cronbach's $\alpha = .93$; similarly, at T2, McDonald's $\omega = .94$ and Cronbach's $\alpha = .93$.

Disgust measure. The disgust measure was implemented in the same manner as in Study 2a, using only three groups of images presented in each trial. All responses being rated on a 6-point Likert scale from “typically represents Hong Kong” (1) to “typically represents Mainland China” (6). The internal consistency of the disgust measure for the mixed images was deemed acceptable by the relevant indicators at T1 and slightly poor at T2. At T1, McDonald's $\omega = .71$ and Cronbach's $\alpha = .65$, whereas at T2, McDonald's $\omega = .61$ and Cronbach's $\alpha = .55$.

Demographics. The last section of the survey questionnaire included several questions about the participants' age, gender, year of study, permanent residency status, and some other non-identifiable information.

Data analysis plan.

Data preparation. As in Study 2a, questionnaires were set up online at both time points using SurveyMonkey. Individual cases from different time points were matched using participant identification numbers that were randomly generated at T1. Data sets were combined and screened using SPSS. Data screening was done in SPSS based on the two

attention check questions, although this excluded data was retained in data sets and can be identified using filter variables.⁸

Analytic strategy. Descriptive statistics and ANOVAs were performed separately for T1 and T2 using JASP. The cross-lagged panel model was tested using Lavaan in R, and the standard error was estimated using the bootstrap resampling method with 5000 draws.

Results.

Descriptive statistics and replication. Table 4.3 shows the means and standard deviations for the measures at both time points, while Table 4.4 shows the correlations between the two MISS subscales, the disgust measure, and SWLS scores at both time points. As in Study 2a, with the exception of the two MISS subscales, weak cross-sectional correlation patterns were observed overall at a given time point, whereas relatively strong longitudinal correlation patterns were observed across both time points.

Table 4.3. *Means and Standard Deviations of Main Measures in Study 2b (N = 48)*

Measure	T1		T2	
	Mean	SD	Mean	SD
Disgust				
Mainland China	1.17	.29	1.20	.30
Hong Kong	1.05	.13	1.05	.11
Mixed	1.63	.63	1.54	.53
MISS				
HIS	4.53	1.15	4.37	1.19
AIS	4.05	1.28	4.00	1.27
SWLS	4.93	1.29	4.84	1.37

Note. Disgust = Disgust towards Culture Mixing, MISS = Multicultural Identity Styles, SWLS =

Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

⁸ Data sets are available on OSF.

Table 4.4. *Pearson Correlations of Main Measures in Study 2b (N = 48)*

	1	2	3	4	5	6	7
1.T1 Hybrid	1						
2.T1 Alternate	0.855 ***						
3.T1 Disgust	0.020	0.109					
4.T1 SWLS	0.105	0.030	-0.030				
5.T2 Hybrid	0.689 ***	0.664 ***	-0.034	0.057			
6.T2 Alternate	0.676 ***	0.736 ***	0.017	-0.085	0.867 ***		
7.T2 Disgust	0.027	0.209	0.478 ***	-0.115	0.155	0.197	
8.T2 SWLS	0.002	-0.129	-0.416 **	0.552 ***	0.111	0.050	-0.332 *

Note. Disgust = Disgust towards Culture Mixing, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

* $p < .05$, ** $p < .01$, *** $p < .001$

Two repeated-measure ANOVAs regarding image type as an intra-subject factor were conducted separately for both time points to test whether the disgust measure was capable of replicating previous findings. The main effect of image type was significant at T1, $F(2, 94) = 36.84, p < .001, \eta^2 = .44$. Post hoc testing with Bonferroni correction indicated that the ingroup symbol was rated as less disgusting than the mixed symbol, $t = -5.84, d = -.84, p < .001$, as was the outgroup symbol, $t = -6.73, d = -.97, p < .001$, but the ingroup symbol was rated as more disgusting than the outgroup symbol, $t = 3.00, d = .43, p < .05$. The main effect of image type was also significant at T2, $F(2, 94) = 36.62, p < .001, \eta^2 = .44$. Post hoc testing with Bonferroni correction indicated that the ingroup symbol was rated as less disgusting than the mixed symbol $t = -6.06, d = -.88, p < .001$, as was the outgroup symbol $t = -6.71, d = -.97, p < .001$; moreover,

the ingroup symbol was also rated as more disgusting than the outgroup symbol $t = 3.37$, $d = .49$, $p < .01$. Testing results confirmed that the mixed symbol was rated as the most disgusting image type at both time points, which is consistent with the findings of previous studies.

Cross-lagged panel model. Applying the same approach as in Study 2a, path analysis of the two-time cross-lagged model was applied by regressing the T2 scores for each of the four variables (HIS, AIS, disgust, and SWLS) on their corresponding T1 score in conjunction with the T1 scores for the other three variables. Figure 4.2 shows the resulting structural model; for the sake of clarity, only significant paths are shown in the diagram. For both theoretical and empirical reasons, the error covariance between T2 AIS and T2 SWLS was specified as not correlated and fixed to zero to release one degree of freedom.

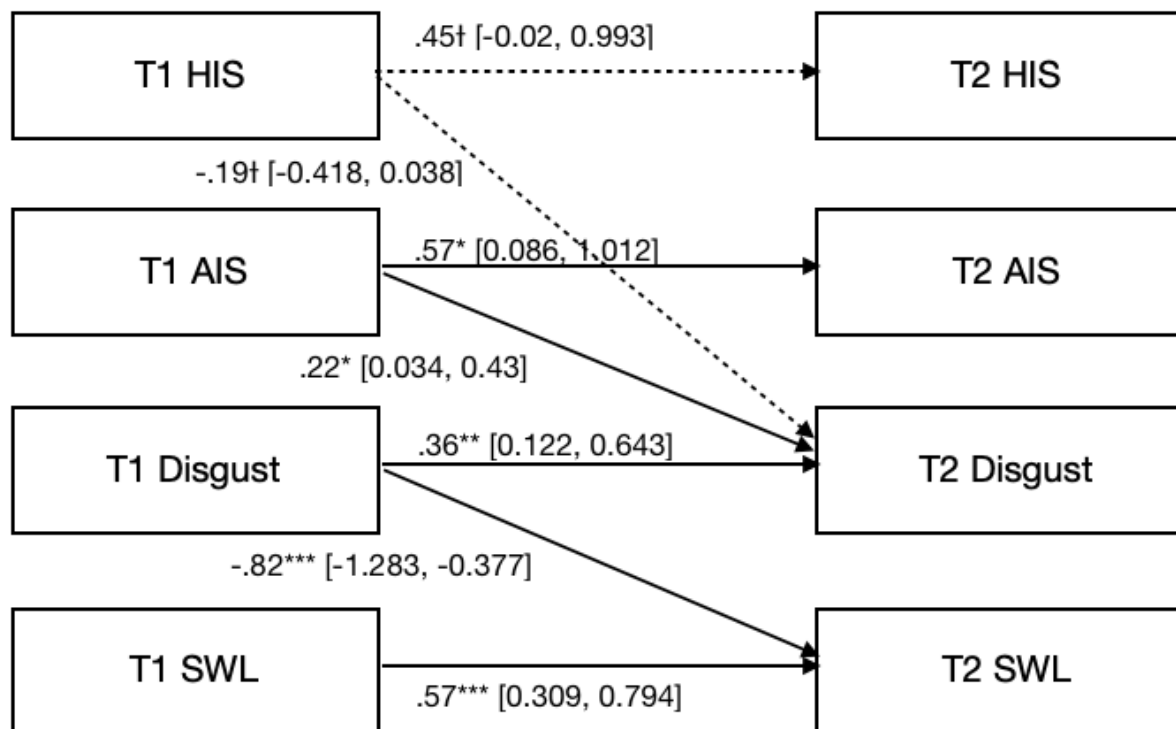


Figure 4.2. Cross-lagged panel model with significant path coefficients for the variables of Study 2b ($N = 48$). Unstandardized path coefficients were marked with bias-corrected 95% CIs of 5000 bootstrap samples. Disgust = Disgust towards Culture Mixing, SWLS = Satisfaction with Life Scale, HIS = Hybrid Identity Style, AIS = Alternating Identity Style.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Test of Hypothesis 1a. After controlling for other T1 variables, T1 HIS marginally predicted T2 disgust, $B = -.19$, $SE = .12$, $p = .089$, 95% CI = [-0.418, 0.038], whereas T1 disgust more strongly predicted T2 disgust, $B = .36$, $SE = .13$, $p < .01$, 95% CI = [0.122, 0.643]. On the other hand, T1 disgust did not predict T2 HIS, $B = -.14$, $SE = .21$, $p = .50$, 95% CI = [-0.535, 0.305]. Consequently, given that hybrid cultural identity management styles did show negative cross-lagged effects on disgust towards culture mixing, Hypothesis 1a was supported with marginally significant evidence for this sample.

Test of Hypothesis 1b. After controlling for other T1 variables, T1 AIS positively predicted T2 disgust, $B = .22$, $SE = .10$, $p < .05$, 95% CI = [0.034, 0.430] in conjunction with T1 disgust. On the other hand, T1 disgust did not predict T2 AIS, $B = -.11$, $SE = .20$, $p = .59$, 95% CI = [-0.498, 0.278]. Consequently, given that alternating cultural identity management styles also showed positive cross-lagged effects on disgust towards culture mixing, Hypothesis 1b was supported for this sample.

Test of Hypothesis 2. After controlling for other T1 variables, T1 disgust negatively predicted T2 SWLS, $B = -.82$, $SE = .23$, $p < .001$, 95% CI = [-1.283, -0.377], as did T1 SWLS, $B = .57$, $SE = .12$, $p < .001$, 95% CI = [0.309, 0.794]; however, T1 SWLS did not predict T2 disgust, $B = -.03$, $SE = .05$, $p = .53$, 95% CI = [-0.116, 0.071]. Consequently, given that disgust towards culture mixing showed negative cross-lagged effects on satisfaction with life, H2 was supported for the sample.

Moreover, after the error covariance between T2 AIS and T2 SWLS was fixed to zero, the path model yielded an excellent fit, $\chi^2 = 0.27$, $df = 1$, $p = .60$, CFI = 1, TLI = 1.1, RMSEA = 0, $p_{close-fit} = .62$, 95% CI = [0, .307], SRMR = .008, providing additional evidence that the path model fits the data well. In summary, Study 2b observed that HIS showed marginally significant cross-lagged impacts on reducing disgust, AIS showed significant cross-lagged

impacts on increasing disgust, and disgust showed significant negative cross-lagged impacts on satisfaction with life.

Post-hoc power analyses were conducted with *simsem* (Beaujean, 2014) in R using Monte Carlo simulation methods. For both Study 2a and Study 2b, the results of simulated fit indices cutoffs indicated that the cross-lagged models remained very good fit ($\chi^2 < .001$, CFI = 1, TLI = 1, RMSEA < .001, SRMR < .001) even at the most stringent Alpha level (.001), which means most of the simulated samples indicated very good fit to the cross-lagged model, thus we considered the cross-lagged model in both studies were well fitted. Specifically, the power of disgust at T1 predicting SWL at T2 is 92.5% for Study 2a and 99.8% for Study 2b. However, the marginal cross-lagged effects of MISS on disgust were underpowered. The power of HIS at T1 predicting disgust at T2 is 10% for Study 2a and 28% for Study 2b, the power of AIS at T1 predicting disgust at T2 is 10% for Study 2a and 33% for Study 2b. The above results suggest that the longitudinal impact of disgust on SWL is robust; however, the effects of identity styles on disgust are perhaps small and require larger samples to confirm. Thus, caution should be taken when interpreting these results.

Discussion.

Consistent with Study 2a, Study 2b observes negative cross-lagged effects of disgust on life satisfaction among Mainland Chinese university students after six months of living in Hong Kong. Furthermore, Study 2b found a marginally significant negative cross-lagged effect of HIS on disgust, as well as a significant positive cross-lagged effect of AIS on disgust.

Statistical analysis results indicated that all T1 measures were positively associated with their corresponding T2 scores, demonstrating that HIS, AIS, disgust, and SWLS were all consistent across both time points. The results supported the hypotheses of study 2b and are accurately represented by the cross-lagged model shown in Figure 4.2, where each of the T2 scores was regressed on all four T1 measures. The marginally significant cross-lagged effect

of HIS and the significant cross-lagged effect of AIS on disgust, as well as the cross-lagged effect of disgust on SWLS, were observed.

The results and the model were both consistent with the hypotheses; that is, after controlling for other T1 measures, HIS had negative cross-lagged impacts on disgust whereas AIS had positive cross-lagged impact on disgust, and consequently disgust had negative cross-lagged impacts on life satisfaction. This suggests that after living in Hong Kong for six months, Mainland Chinese students would find integrating and fusing the Mainland and Hong Kong identities together to be helpful in reducing their perceived disgust towards culture mixing, whereas shifting between the two identities would result in the opposite by increasing such disgust reactions during their stay in Hong Kong. As minority group members in Hong Kong and its universities, Mainland Chinese students are mostly seeking better education or to uproot themselves from their hometowns; it is therefore not surprising that the impact of cultural identity integration falls into typical patterns of acculturation. In this case, successfully fusing Mainland and Hong Kong identities indicates acceptance of both cultures, fewer problems with integrating into Hong Kong society, and perhaps perceiving Hong Kong culture as less distant from Mainland culture or even as an ingroup culture. On the contrary, shifting between Mainland and Hong Kong identities signals internal conflicts towards accepting Hong Kong culture, causing an individual to distribute more resources in dealing with different cultural situations encountered in daily life; consequently, this leads to difficulties with internalizing Hong Kong culture and results in worse adaptation outcomes. Such an identity management style probably indicates perceiving Hong Kong and Mainland Chinese cultures as being incompatible; any mixing of the two consequently triggers disgust reactions towards perceived contamination. This maladaptive assumption of disgust was also supported by the result of the significantly negative cross-lagged effect of disgust on SWL, a pattern that was consistent with the findings of Study 2a.

Briefly regarding the limitations of Study 2v, the final sample size was not ideal due to the high dropout rate at T2; consequently, latent variable analysis to take measurement errors into account could not be performed. Nevertheless, considering that this study was an intra-subject research design, and that the resulting sample size was sufficient for conducting regression analysis in the cross-lagged panel model, the reoccurring patterns of Studies 2a and Study 2b were informative for the current project as a whole.

General Discussion of Study 2

The two separate studies that make up Study 2 both demonstrated patterns regarding how the chosen style of managing multicultural identities affects the perception of Hong Kong-Mainland China culture mixing, as well as regarding how such perceptions affect satisfaction with life for Mainland Chinese students living in Hong Kong for a period of time. Both studies observed that disgust towards culture mixing at T1 negatively predicted satisfaction of life at T2 as typically expected from the hypotheses; Study 2b also observed that T1 HIS negatively predicted T2 disgust while T1 AIS positively predicted T2 disgust to a significant degree. Whereas the cross-lagged impacts of HIS and AIS on disgust were not significant in Study 2a, such patterns were observed in Study 2b with a slightly larger sample size and a longer gap between the two time points. It is possible that the contrasting effects of either consolidating or conflicting between multiple cultural identities only emerges after a longer stay in the host culture, perhaps more than a semester in length for university students.

Study 2 as a whole demonstrated that fusing together heritage and host identities—that is, adopting HIS strategies –protects Mainland Chinese students from increased negative reactions towards mixed cultures, representing an adaptative strategy by a minority that is common during the acculturation process and consistent with most of the research on cultural identity integration (Cheng et al., 2006; Nguyen & Benet-Martínez, 2013; Ward et al., 2018). In contrast, AIS appears to boost disgust towards culture mixing and elevate negative

consequences in the long run. Again, the design of this study and the model only explained the role of cultural identity styles and disgust towards culture mixing; the real-world process for Mainland Chinese acculturating to Hong Kong is no doubt far more complex and related to more contextual factors. To fill in these gaps, the overall results of study 2 point out potential predictors of future perception of culture mixing and consequences as areas of further study; additionally, its findings contributed to extending previous research on culture mixing into acculturation settings, as well as to facilitate intergroup and intercultural contact.

The current study extends previous cross-sectional studies on culture mixing by using a cross-lagged panel model to examine its relationship to cultural identities and satisfaction with life. Such a model uses all predictors and outcomes at two time points—of which measures at the first time point serves as a baseline for these constructs—and tests the temporal causal effect of these predictors (Kenny, 1975, 2014). Despite limited resources, two studies with a dual time-point design were conducted and found that: (1) baseline disgust is not associated with cultural identity styles even after follow-up observations made three and six months later, and that in the opposite direction, baseline cultural identity styles only weakly predicted disgust at follow-up time points; (2) baseline disgust was a strong predictor of life satisfaction at follow-up time points three and six months later, but not vice versa; and (3) baseline cultural identity styles were not associated with life satisfaction at follow-up time points three and six months later. Although a longitudinal mediation model to examine the sequential effects of the variables on each other could not be established, findings discussed above identify the causal relations of cultural identity styles on disgust, as well as disgust on acculturation outcomes.

Regarding the limitations of Study 2 in general, both component Studies 2a and 2b could only formulate analyses from relatively small sample sizes due to significant dropout rates and limited resources. Although this compromised the power of the current findings, the

two studies replicated the same pattern regarding the negative impact of disgust on life satisfaction, which demonstrates a promising direction in further researching the role that disgust plays in the acculturation context. Furthermore, due to the limited sample sizes, Study 2 employed path analysis to address the cross-lagged panel models that were created; such an analysis method does not take measurement error and measurement structure into account like SEM analysis would, although the technique of releasing one degree of freedom was adopted to permit the application of fit indices for model fit reference. These are important assumptions that should be improved on and checked in future studies.



Chapter 5: Study 3 – Priming Studies of Superordinate Identity Among Hong Kong

Local Students

Overview

Both Studies 1 and 2 of the current project replicated the pattern of a universal negative reaction towards culture mixing found by previous researchers in the specific context Hong Kong-Mainland Chinese culture mixings. The two studies identified that both Hong Kong local students and Mainland Chinese students felt more disgust towards mixed cultural symbols compare to separate symbols, even though the two cultures are usually both considered to be Chinese subcultures. The two studies also found that for both groups, such feelings of disgust were associated with how people manage their Chinese and Hong Kong identities. In particular, Study 2 found that for visiting Mainland Chinese students to Hong Kong universities, their ability to integrate their Mainland Chinese and Hong Kong identities, in addition to their initial disgust towards culture mixing, forecast their cultural adaptation outcomes after three and six months of living in Hong Kong.

As the majority group in the acculturation process, how Hong Kong students perceive culture mixing, especially a mixture of Hong Kong local culture and Mainland Chinese culture, not only reflects how they internalize their Chinese identity, but also may shape how both groups proceed with intercultural contact. This study is thus interested in testing an intervention that reduces Hong Kong participants' disgust towards culture mixing through the mechanism of cultural identity. In a series of separate component studies that together make up in Study 3—namely a pilot, Study 3a, and Study 3b—the conflicting identities of Hong Kong students are identified to examine whether priming participants with either multiculturalism or assimilation ideologies would change how they respond in terms of emotional responses, perceived identity strength, and disgust towards culture mixing.

The effect of common identities. One of the significant aspects blended into Hong Kong-Mainland Chinese conflicts is the dispute involving identification as a “Chinese national.” On one hand, Mainland Chinese perceive the “Chinese national” identity as an umbrella term that includes Hong Kong people and themselves; on the other hand, many Hong Kong residents have struggled with resisting against and dis-identifying from such a superordinate category. There are several ways of conceptualizing identity that could be relevant to the experience of disgust towards Hong Kong-Mainland culture mixing. For example, in terms of the multicultural identity styles examined in the previous studies of this project, do Hong Kong participants perceive their “Hongkonger” and “Chinese national” identities to be fused or separated? Additionally, we may simply ask about the degree to which participants identify with an overarching superordinate identity, such as being a citizen of the People’s Republic of China—which indexes the Chinese national identity—or being ethnically Chinese.

When people categorize themselves in the same group as others, the resulting common identity has been found to associate with group-level emotional appraisals and identity-related behaviors. According to self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), the answers to the question “who am I” are largely defined by what has been made salient in a social context. Perceptions of the self vary in terms of how strongly one identifies with a particular group; for instance, a strong adherent to the group is more likely to conform to group norms and behaviors (Terry & Hogg, 1996; Hogg & Reid, 2006). In such cases, whether the outcome of self-categorization involves an aversive or pleasant reaction to the ingroup, or a friendly or hostile reaction to the outgroup, depends on which relevant identity is being made salient.

Studies of superordinate identities have shown significant, mostly positive impacts this self-categorization process on intergroup relations. Rooted in both social identity theory

and self-categorization theory (Tajfel, 1981; Turner et al., 1987), the notion of a superordinate identity is a social category that captures the common ground – a common ingroup identity of different subgroups that reduces biases and discrimination towards outgroups (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993). For instance, in the context of European Union, a series of studies found that priming British participants with a “European” identity reduced their biases towards French people (Stone & Crisp, 2007); likewise, studies in Israel also suggested that higher identification with the national Israeli identity among both Israeli Jews and Arabs predicted lower tendencies to inhumanize outgroup members (Gaunt, 2009). Moreover, when primed with shared identities, people perceive ethnic and political outgroups to be less threatening, show more positive attitudes towards them (Riek, Mania, Gaertner, McDonald, & Lamoreaux, 2010), and are more cooperative in bargaining compared to those being primed with distinct identities (McLeish & Oxoby, 2011). All these circumstances suggest that common identities demonstrate positive effects for improving intergroup relations.

Yet despite most research on superordinate identities observing positive effects, a disidentified superordinate identity may very well have the opposite effects. As a study on Chinese-American biculturals discovered, strong identification with American culture strengthens assimilative responses towards American cultural priming, whereas strong disidentification with Chinese culture drives participants to shift away from Chinese cultural priming (Zou et al., 2008). In line with such patterns, an earlier meta-analysis found that strong identifiers with a group are more likely to increase differentiation from outgroups if group distinctiveness is perceived to be undermined, while weak identifiers are less likely to do so (Jetten, Spears, & Postmes, 2004). Strong identifiers also tend to perceive threatening outgroups as being physically closer than non-threatening outgroups, whereas weak identifiers perceive the opposite (Xiao & Van Bavel, 2012). Such findings not only highlight

the influence of dispositional factors in self-categorization processes, but also suggest that superordinate identities may come with potential complications.

The controversy of national identity. As a typical form of superordinate identity, national identity has recently been thrust under the spotlight amid the global context of nationalist outgroup denigration and ingroup preference appearing to be becoming more dangerous and common in recent years. Significant markers in the news media such as Donald Trump’s iconic “build the wall” slogan, the persecution of the Rohingya people in Myanmar, and the Christchurch mosque shooting in New Zealand are arguably driven by intergroup hatred and weaponized national identities.

Aside from these negative current events, research has found that national identity is a controversial and double-edged sword. Studies demonstrate that depending on the intergroup climate, the promotion of a national identity can either be inclusive (e.g. “one of us” rhetoric) or exclusive (e.g. “send them back” rhetoric). On one hand, when national identity serves as a common identity, it can greatly reduce biases between ethnic groups (Gaunt, 2009) and political opponents (Riek et al., 2010; Levendusky, 2018); for instance, strong identifiers with a national identity often feel more guilt towards international conflicts when national pride was induced (Schori-Eyal, Tagar, Saguy, & Halperin, 2015). On the other hand, when outgroups are excluded from the national identity, priming the national identity enhances negative attitudes toward immigrants (Wojcieszak & Garrett, 2018). Indeed, when national identity is wielded in an exclusionary matter, it most likely enhances interethnic biases; people who strongly identify with their national identity and believe that they are superior within their nation tend to blame asylum seekers (Berndsen, Thomas, McGarty, Bliuc, & Hendres, 2017) for their problems and resist taking the perspective of immigrants even when instructed to do so (Berndsen, Thomas, & Pedersen, 2018). An earlier priming study by Li and Brewer (2004) found that nationalism negatively associated with multiculturalism; such

findings are supported by a recent study from the World Values Survey project that also revealed a negative correlation between national identity and attitudes toward ethnic diversity in Western societies (Hamamura, 2017).

In the Hong Kong context, the national Chinese identity—that is, being a citizen of the People’s Republic of China—may serve as a superordinate and inclusive identity to “Hongkonger” (Hong et al., 1999). When China resumed its sovereignty over Hong Kong in 1997, the Chinese national identity naturally became, alongside “Hongkonger” and other terms, one of the potential identities that could be adopted by Hong Kong residents, as reflected in public opinion polling (The University of Hong Kong, 2019). Yet in recent years, given the growing conflicts between Hong Kong and Mainland China, the Chinese identity is becoming less of a unifying identity and instead more of a stigmatized, politically opposite one; those who dis-identify with the national Chinese identity prefer maintaining the distinct Hong Kong identity that contrasts with Mainland China (Brewer, 1999). In this case, unlike other regional Chinese identities, the “Hongkonger” identity may be regarded as not falling under the umbrella term “Chinese national,” or even “Chinese,” but an independent identity that indexes a social context and political stances that are distinct from Mainland China.

We conducted three separate studies attempting to develop a prime for Hong Kong local residents that reduced disgust towards Hong Kong-Mainland culture mixing using different multicultural ideologies.

In the pilot study, we sampled 262 Hong Kong university students to test two distinct identity primes (in comparison to control conditions) and how they affected corresponding identity strength. Participants were randomly assigned into a national identity priming condition, a traditional Chinese virtue priming condition, or control conditions for each prime; after reading the primes, they were asked to rate identity strength that corresponded to the primes.

In the following Study 3a, we tried to use multiculturalism to reduce the disgust. In total 120 university students were randomly assigned into either a priming condition, which they were asked to read a multiculturalism prime inspired and modified from a previous study (Todd & Galinsky, 2012), or a control condition; and then they rated disgust towards culture mixing as well as national identity strength.

In Study 3b, based on the Intergroup Emotion Theory (IET, Smith & Mackie, 2010), we tried to reduce disgust by influencing cultural identity styles that associated with it and through the emotion responses after being primed. The detail of IET will be discussed in the overview section of Study 3b. In total 174 university students were randomly assigned into a multiculturalism priming condition, an assimilation priming condition, or a control condition; after reading the primes, they rated their emotions on the Positive Affect and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988), ethnic identity strength, disgust towards Hong Kong-Mainland China culture mixing, and MISS.

Pilot Study – A Test for Two Distinct Identity Primes and Identity Strength

The current study. The ultimately intent of this study is to reduce disgust towards Hong Kong-Mainland culture mixing through priming a concordant identity. First, priming materials that could influence identification with a particular Chinese identity needed to be developed; the particular type of Chinese identity that could be influenced also needed to be determined. To understand the dynamics of identity conflicts in Hong Kong and to develop priming materials that associate with these identities, a pilot survey was conducted to investigate whether two primes could affect the degree to which individuals identified with two types of superordinate Chinese identities.

The two superordinate identities deemed appropriate and representative for Hong Kong residents that were selected are “Chinese national” (中国人) and “ethnic Chinese” (中华民族).

Given the low strength of identifying with the former identity among Hong Kong residents

(The University of Hong Kong, 2019), it was expected that Hong Kong participants would potentially exhibit aversive reactions to it; consequently, the priming study adopted a between-group design to avoid any potential emotional interference caused by repeated measurements. The pilot test employed two different priming conditions and two corresponding control conditions. The test was interested in whether an ethnic prime would increase identification with being “ethnically Chinese,” and conversely whether a national prime would decrease identification with being a “Chinese national”. The hypotheses proposed for the pilot study are:

Hypothesis 1. After reading the national prime, participants will exhibit lower national identity strength compare to those who read the control prime.

Hypothesis 2. After reading the ethnic prime, participants will exhibit higher ethnic identity strength compare to those who read the control prime.

Method.

Participants. Local Hong Kong participants were recruited using convenience sampling from another project. A total of 262 undergraduate students, all of them self-identifying as Hong Kong permanent residents, were recruited from the Education University of Hong Kong.

Measures.

Priming manipulation. The two priming conditions were implemented through random assignment using online questionnaires (SurveyMonkey Inc., 2018). Participants were randomly assigned to either one of the priming conditions (national versus ethnic) or one of two corresponding control conditions when they began the questionnaire. Participants assigned to the national priming group were instructed to read a paragraph modified from a previous study regarding superordinate identity (Stone & Crisp, 2007) that describing the current national identity after 1997 handover. A translated sample of the material is given below:

“China resumed its sovereignty over Hong Kong in 1997. Some people think that since Hong Kong has returned, it is no longer meaningful to use ‘Hong Kong people’ to describe themselves. Instead, they think they should use ‘Chinese (中国人)’ ... for example, during the Anti-Japanese War...we can see that Hong Kong people identified with Chinese identity.”

Participants assigned to the ethnic priming group read a paragraph about traditional Chinese virtues adopted from a local newspaper. A translated sample of the material is given below:

“Benevolence and filial piety are the most distinctive parts of the traditional Chinese virtues. Benevolence is not only the symbol of ethnic Chinese culture and the fundamental principle, but also the most common moral standard in daily life ...”

Participants in both control conditions were instructed to read a paragraph describing the development of science selected from Stephen Hawking’s *A Brief History of Time*, which was considered to be unrelated to either national or ethnic identity. A sample of the material is reproduced below:

“Today we have powerful tools, intellectual tools such as math and science, and technical tools such as computers and telescopes. Scientists use these tools to piece together a knowledge about space... The latest breakthroughs in physics make it possible for us to provide answers to some of the outstanding questions ...”

Identity Strength. After the reading task, participants rated themselves on four items adopted and modified from Reed & Aquino (2003) that measured identity strength. The specific identities being measured differed in their priming conditions. For the Chinese national prime and its corresponding control condition, participants rated their agreement with identifying a National Chinese (e.g. “It’s great to be a Chinese national”). For the ethnic

Chinese prime and its corresponding control condition, participants rated their agreement with identifying as ethnically Chinese (e.g. “It’s great to be ethnically Chinese”). All items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score.

Results. Comparing each prime with its control group displayed no significant priming effects on either national or ethnic identity. More specifically, independent sample *t*-tests exhibited no significant difference in national identity strength between the priming and control groups, $t(134) = 1.35$, $p = .18$; $M_{\text{priming}} = 3.35$, $SD = 1.16$; $M_{\text{control}} = 3.62$, $SD = 1.16$; and Cohen’s $d = 0.23$. Likewise, no significant difference in ethnic identity strength was discovered between the priming and control groups, $t(124) = .23$, $p = .82$; $M_{\text{priming}} = 4.15$; $SD = 1.01$; $M_{\text{control}} = 4.19$, $SD = .97$; Cohen’s $d = 0.04$. Consequently, both hypotheses were not supported by the sample data.

On the other hand, a one-way ANOVA with identity strength as the dependent variable and all four conditions as independent variables showed that there were significant differences in identity endorsement between participants rating their national identity and rating their ethnic identity, $F(3,258) = 9.45$, $p < .001$, $\eta^2 = 0.10$. Post hoc comparisons with Bonferroni correction indicated that the strength of national identity was consistently rated lower than that of ethnic identity between both priming conditions ($ps < .001$) and between both control conditions ($ps < .05$). Consequently, although no priming effect was exhibited between priming and control conditions, the participants in the sample suggest that Hong Kong people identifying most strongly with being ethnically Chinese than being Chinese nationals overall.

Discussion. This pilot study aimed to provide an initial test of priming tools and attempt to develop intervention materials for future studies. The results above suggest that the primes used under both conditions were not effective in promoting corresponding identity strengths; however, the one-way ANOVA confirmed that Hong Kong participants were more willing to

identify themselves as ethnic Chinese than as Chinese nationals overall. The lack of support for the hypotheses may be explained by the effects of methodological factors; this pilot study was conducted as a complement to the last session of a 40-minute questionnaire, and so participants might not have been paying attention to the primes due to being fatigued from the long process. Furthermore, it is also possible that the national and ethnic identity primes in the current pilot study were considered to be nothing more than related cultural representations that were not powerful enough to trigger emotional reactions and affect the strength of identification with cultural groups. In the subsequent component studies of Study 3, the typical approach of using multicultural ideologies as a means of affecting intergroup perceptions was adopted; moreover, these priming materials were further modified through surveys, face-to-face talks, and small group discussions with both Mainland Chinese and Hong Kong students.

Study 3a – A Priming Study of Multiculturalism on Disgust towards Culture Mixing among Hong Kong University Students

Overview. Focusing on Hong Kong residents, Study 3a represented a first attempt at trying to reduce the negative reactions associated with Hong Kong-Mainland culture mixing by seeking a possible solution to buffer the disidentification with national Chinese identity. Inspired by the classic framework (Verkuyten, 2005), the study proposes that by promoting multiculturalism and diversity in the Hong Kong-Mainland culture mixing context, perceived identity conflicts will be diminished, thereby reducing negative attitudes towards culture mixing.

In contrasting to colorblindness, which ignore cultural differences altogether, multiculturalism emphasizes the preservation of different cultural values, traditions, and lifestyles (Morris et al., 2015). As a subject of intergroup research, multiculturalism has receiving considerable attention. Richeson and Nussbaum (2004) found that people with exposure to multiculturalist ideologies showed less racial bias compare to those with

colorblindness. When comparing multiculturalism with assimilationism on intergroup evaluations, Verkuyten (2005) found that the former was related to less negative outgroup evaluations from majority group members and more positive ingroup evaluations from minority group members. Moreover, the endorsement of multiculturalism is associated with higher self-esteem for both groups in acculturation settings (Verkuyten, 2009), and promoting the broad goals of multiculturalism makes the majority group feel less threatened by immigrants, predicting fewer prejudices towards them (Mahfud, Badea, Verkuyten, & Reynolds, 2018). In the Hong Kong context, multiculturalism also predicts less perceived discrimination for Mainland Chinese immigrants and more intergroup tolerance for Hong Kong locals, further improving the conditions for intercultural contact (Hui et al., 2015). Furthermore, multiculturalism could potentially improve intergroup perceptions between Mainland Chinese and Hong Kong locals by buffering the negative attitudes associated with value incongruence (Guan et al., 2011).

Regarding the various forms of cultural encounters, Brug and Verkuyten (2007) proposed four types of cultural diversity models to describe the outcomes of intercultural contact – namely “mosaic” (the ideal multiculturalism, maintaining differences while coexisting together), “melting-pot” (cultural fusion and the breakdown of differences), assimilation (minority groups abandon their own cultures to join in the majority culture), and segregation (each of the group and their respective cultures remain separate). Consistent with previous findings by Verkuyten (2005), minority group members endorsed multiculturalism more than majority group members, who in turn endorsed assimilation more than minority group members. Moreover, Brug and Verkuyten (2007) found that the more that minority group members identified with their ethnic group, the more that they endorsed multiculturalism over assimilation. These findings are expected given that stronger identifiers

in ethnic minority groups would prefer maintaining their heritage while also attempting to integrate into the settlement society.

The current study (Study 3a). So far there's no study that associates cultural identification with disgust towards cultural mixing. However, as the original study has shown that patriotism boosted disgust towards ingroup-outgroup culture mixing, we suspected the national identity would also play a role in such cognitive processes. What's more, as the results of Study 1 showed, if Hong Kong individuals managed local identity and national identity in a more fused manner this was strongly and negatively related to such disgust. Thus, in the current study we hypothesized that by manipulating the strength of national identity, the disgust towards Hong Kong-Mainland culture mixing would be affected through the negative associations demonstrated in previous findings. Throughout Study 3, the two ideologies of multiculturalism and assimilation are examined regarding cultural diversity within China, with their effects being tested among Hong Kong residents. Study 3a first tests the effects of a multicultural ideology on Hong Kong residents, who may consider themselves as a minority within China. Although Mainland Chinese immigrants and sojourners to Hong Kong are undoubtedly outnumbered by locals, thereby naturally being positioned a minority group in the context of acculturating to Hong Kong, Hong Kong locals may also have similar concerns related to whether they should assimilate to Mainland China, as well as whether to reject or embrace a superordinate identity. Within the greater Chinese context, Hong Kong residents are expected to react to multiculturalism in a manner similar to attested minorities in previous research; that is, to express a preference for multiculturalism within China.

The multiculturalism prime is expected to increase positive reactions to national identity, thereby decreasing disgust towards culture mixing. Figure 5.1 illustrates a proposed path model for the hypotheses of the study, which are:

Hypothesis 1. Participants under the priming condition will exhibit lower disgust measure ratings compared to those under the control condition.

Hypothesis 2. Participants under the priming condition will exhibit greater national identity strength compared to those under the control condition.

Hypothesis 3. National identity strength will mediate the priming effect on disgust towards culture mixing.⁹

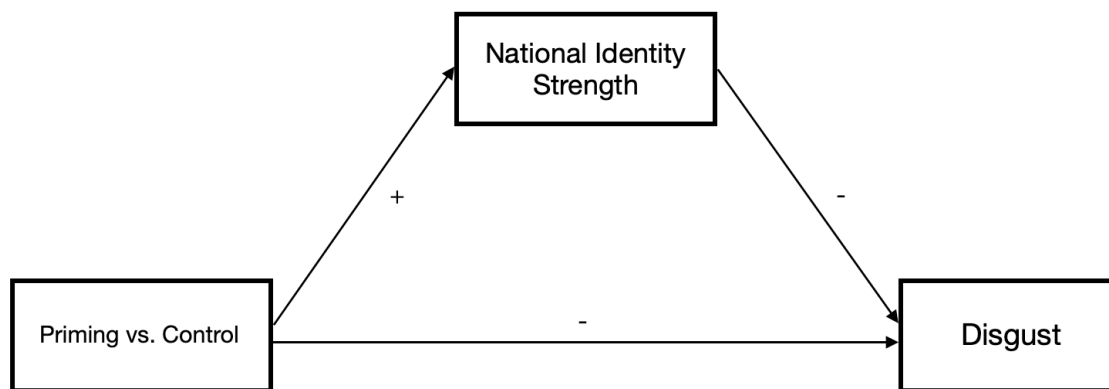


Figure 5.1. Hypothesized path model showing the priming effects of multiculturalism priming on disgust towards culture mixing and national identity strength. National identity strength is hypothesized to mediate the priming effect on disgust.

Method.

Participants. 123 undergraduate students, all of which self-identified as Hong Kong permanent residents, were recruited from the Education University of Hong Kong through online advertisements sent by email and posted to university-internal portals. Although a power analysis was not performed prior to data collection, a subsequent power calculation

⁹ In the original design of Study 3a reported on OSF, we also expected that the dual cultural selves (S. H. Ng & Lai, 2011) would moderate the priming effect on disgust towards culture mixing and national identity strength, that is, the effect of western cultural priming and Chinese cultural priming depends on how strong people identifying with western and Chinese culture (T. K. Ng et al., 2016). No moderation effect was found in the final result, though the Chinese Self and Western Self were significant predictors of national identity strength. Given the fact that after controlling for both cultural selves the priming effect was not tempered, we removed this measure from the subsequent analysis.

performed in G*power taking the typical effect size value of $r = .21$ ($d = .43$) found that at least 172 participants were required to obtain 80% power in t -tests. Given the sample size of 123 participants, this study is therefore slightly underpowered with regards to detecting mean differences between two independent groups.

Participants were instructed to finish a 5-minute online questionnaire consisting of the measurement tools described in the next section. Upon beginning the questionnaire, participants were randomly assigned into either the priming condition or the control condition. All items in the questionnaire were presented in Traditional Chinese. Data from one participant were excluded based on the Mahalanobis distance (Tabachnick & Fidell, 2007) between the main dependent variables of the disgust measure and national identity strength; data from an additional two participants were also excluded due to the participants skipping main measures. The final sample consisted of 120 participants, of which 30 were male, 89 were female, and 1 did not report their gender. The mean age (M_{age}) of the participants was 21.67 years, with a standard deviation of 4.66 years. 58 participants of the final sample were sorted into the priming condition, while the other 62 were sorted into the control condition. Upon completion of the study, five of the participants were awarded HK\$50 in compensation through a lucky draw.

Measures.¹⁰

Priming manipulation. As stated previously, priming conditions were implemented by random assignment using the online questionnaire as in the pilot study, with participants being assigned to either the priming group or the control group. Priming group participants were directed to read a set of instructions, followed by a paragraph describing the celebration of diverse cultural phenomena in the Greater China area. Both the instructions and the priming

¹⁰Arranged after the Disgust Measure, we also measured a 5-item Social Distance Scale (Wark & Galliher, 2007) towards Mainland Chinese. As the measure was less relevant to the current study, some statistics were discussed in Appendix D.

material were developed based on previous research (Todd & Galinsky, 2012) and through group discussions with Hong Kong local students. A translated sample of the material is given below:

“There are many different cultural groups living together in the Greater China region, and this is where we are, in such a unique place ... Each ethnic group in the Greater China region can make contributions in a different way. Recognizing this diversity can help creating a harmonious relationship among different ethnic groups ...”

After reading the prime, participants were asked to briefly list up to five reasons for supporting the argument presented in the prime. On the other hand, control group participants were only directed to read the instructions given for the priming group and then asked to briefly list up to five questions regarding the experiment.

Disgust Measure. The disgust measure used in both Studies 1 and 2 was adopted for the current study, but with only the group of 5 mixed image stimuli of Hong Kong and Mainland Chinese culture symbols to eliminate experimental redundancy. The stimuli were presented in a randomized order for each participant and were followed by a single question item: “to what extent do you feel disgust when you see this picture?” Responses were rated on a 6-point Likert scale from “not at all” (1) to “extremely” (6). The scale yielded good reliability; McDonald’s $\omega = .84$ and Cronbach’s $\alpha = .84$.

National identity strength. After reading the prime, the national identity strength of participants was measured using the same modified 4-item measure (Reed & Aquino, 2003) applied in the pilot study. Sample items included “It’s great to be a Chinese national” and “I am extremely proud of my affiliation with Chinese nationals.” All question items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a

“neutral” (4) score. The measure yielded acceptable reliability; McDonald’s $\omega = .81$ and Cronbach’s $\alpha = .74$.

Demographics. The last section of the survey questionnaire included several questions about the participants’ age, gender, year of study, and permanent residency status.

Data analysis plan.

Data preparation. The questionnaire was set up using SurveyMonkey and the data set was download in SPSS format. Initial data screening was done by identifying repeated submissions, missing open-ended questions, and abandoned trials. Thereafter, multivariate outliers based on the Mahalanobis distance were marked using filter variables.¹¹

Analytic strategy. Descriptive statistics, t -tests were calculated using JASP. The mediation model was tested using Lavaan in R, and the standard error was estimated using bootstrap resampling method with 5000 draws.

Results.

Test of Hypothesis 1. An independent sample t -test found no significant differences in the disgust measure between the two conditions, $t(117.4) = -1.35$, $p = .18$, Cohen’s $d = .25$, 95% CI = $[-.61, .11]$; $M_{control} = 2.88$, $SE = .16$; $M_{priming} = 2.57$, $SE = .17$. Hypothesis 1 was therefore not supported.

Test of Hypothesis 2. An independent sample t -test found no significant differences in national identity strength between the two conditions, $t(118) = 1.48$, $p = .14$, Cohen’s $d = .27$, 95% CI = $[-.09, .63]$; $M_{control} = 3.57$, $SE = .15$; $M_{priming} = 3.88$, $SE = .15$. Hypothesis 2 was therefore not supported, although the trend was in the expected direction.

Test of Hypothesis 3. Although no total effect of the prime on the disgust measure was observed, the analysis proceeded with testing a potential mediation model, given that a significant correlation between national identity strength and disgust was observed ($r = -.47$, p

¹¹ Data sets are available on OSF.

< .001), and that testing of both Hypotheses 1 and 2 indicated that the differences between priming conditions on both identity strength and disgust were trending in the expected direction as indicated by the 95% CI. Moreover, it was believed that inconsistent mediation could be another reason why a mediation model would potentially stand, where an inconsistent mediating effect refers to one that exists without observable total effect, which may occur when there are unknown moderators or suppression (Shrout & Bolger, 2002; MacKinnon, Fairchild, & Fritz, 2007).

The hypothesized path model illustrated in Figure 5.1 was tested in JASP using Lavaan. Results showed that dummy-coded priming conditions marginally increased national identity strength, $\beta = .15$, 95% CI = [-.07, .73], $SE = .20$, $p = .10$. Moreover, after controlling for the priming conditions, identity strength significantly reduced the disgust measure, $\beta = -.46$, 95% CI = [-.71, -.32], $SE = .10$, $p < .001$. Yet given that the indirect effect of priming conditions reducing the disgust measure through identity strength was only close to marginally significant, $\beta = -.07$, 95% CI = [-.40, .03], $SE = .11$, $p = .13$, Hypothesis 3 was not supported; however, as with the tests for Hypotheses 1 and 2, it was observed that the major mass of the 95% CIs were located on one side of 0, indicating potential effects.

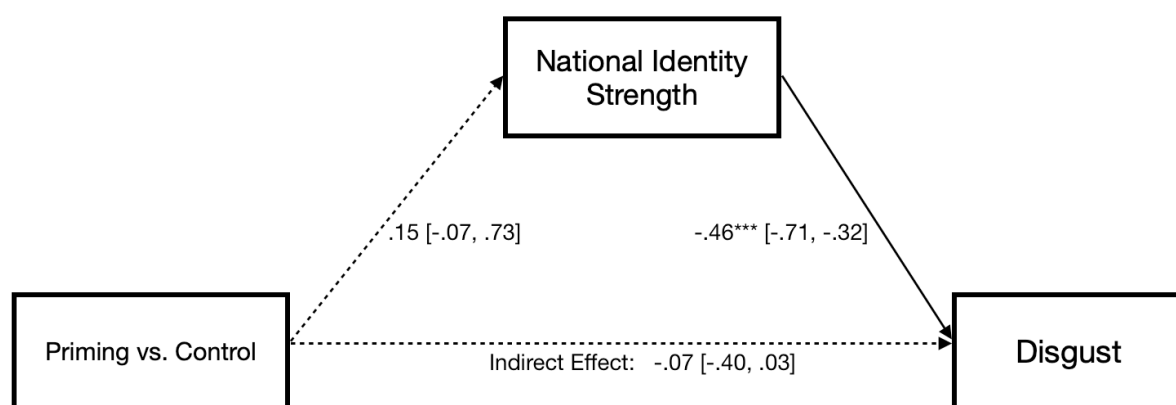


Figure 5.2. Path model showing the effects of priming conditions on disgust towards culture mixing mediated through national identity strength. Solid arrows indicate significant paths

with standardized path coefficients and bias-corrected 95% CIs of 5000 bootstrap samples.

Dotted lines indicate non-significant paths. ($\dagger p < .10$, $* p < .05$, $** p < .01$, $*** p < .001$)

Summarizing thus far, Study 3a demonstrated that the prime had no significant total effects on either the disgust measure or national identity strength, though the major mass of the 95% CIs were located on one side of 0, indicating a potential direction for the priming effects. Moreover, the mediation model observed a close to marginally significant indirect effect of multiculturalism priming on disgust through national identity strength.

Discussion. Study 3a did not find significant priming effects on disgust towards culture mixing and only found marginally significant effects on national identity strength. Nevertheless, having found a strong negative association between national identity strength and disgust towards culture mixing, a potential indirect priming effect on disgust through national identity strength was again observed. This potential mediation model could therefore suggest possible pathways for how cultural identity strength is shaped by multicultural ideology and subsequently affects perceptions of culture mixing.

A multiculturalist Greater China (MGC) prime was created and modified for Study 3a as an intervention tool for trying to reduce disgust towards culture mixing among Hong Kong locals. The distinct context of Hong Kong makes an examination of Chinese culture significantly unique, considering that “traditional” Hong Kong culture combines Chinese heritage with Western manifests, whereas present conflicts in the city invoke this particular cultural combination against modern Chinese culture. To identify subtle cultural differences and find a superordinate Chinese category that does not trigger negative views regarding Mainland China from Hong Kong participants, the effect of multiculturalism was tested in Study 3a through promoting the ideology of embracing diversity in the Greater China area.

Regarding the MGC prime as a treatment tool, the results reveal a potential direction for the intervention effect of the prime on disgust towards cultural mixing.

Although priming effects on both the disgust measure and national identity strength were found to be non-significant, analysis of both tests revealed that major mass of the 95% CIs were located on one side of 0, suggest a direction for the priming effect. The non-significance of the results is suspected to be due to data noise, small effect size, and insufficient power. Furthermore, the results of testing the mediation model presented in Figure 5.2 showed a promising indirect priming effect from the MGC prime to disgust towards culture mixing through the national identity strength. Again, although the *p*-value is insignificant, the 95% CI suggests a promising direction for intervention strategies developed from the MGC prime. Lastly, a strong negative association was found between national identity strength and disgust, indicating that the more strongly that Hong Kong participants identified with the Chinese national identity, the less disgusted that they felt when they saw Hong Kong symbols mixed with Mainland symbols.

Given these findings, we decided to test whether the patterns of Study 3a could be replicated in a final study that examined priming effects on different measures of identity and mediating mechanisms. Accounting for the low strength of identification with national Chinese identity demonstrated in the pilot study, the subsequent Study 3b added one more prime related to an assimilative national identity to explore whether it would generate an “opposite” priming effect to that generated by the MGC prime.

Study 3b – A Priming Study of the Effects of Multiculturalism versus Assimilation on Disgust Towards Culture Mixing Among Hong Kong University Students

Overview. When people categorize themselves as a member of a particular group rather than another group or as individuals, they experience various emotions that are

associated with the ingroup (Smith, Seger, & Mackie, 2007). The basic framework of emotional reactions that are determined by this process of social categorization is outlined by the intergroup emotion theory (IET) proposed by Smith and Mackie (2010). IET suggests that the particular emotional responses evoked by social categorization—including emotions related to outgroups, in addition to how these responses are experienced, depend on the specific cultural context. For example, American students showed more anger and less respect towards Muslims when they themselves were categorized as nationals rather than students, and more anger and less respect to police when categorized as students rather than nationals (Ray, Mackie, Rydell, & Smith, 2008). Another study found that honor-related insults resulted in stronger emotional reactions from Arab students compared to British students, whereas no significant difference was found when the insults targeting their student identity (Maitner, Mackie, Pauketat, & Smith, 2017). Group-based emotions are not only amplified by identification with the group, but also consequently direct intergroup attitudes, willingness to establish contact with outgroups, and group behaviors (Esses & Dovidio, 2002; Mackie, Smith, & Ray, 2008). In the same vein, when identities associated with *conflicts* between Hong Kong and Mainland China are activated, negative emotional responses are expected to be evoked that will subsequently direct intergroup attitudes and perceived intergroup relations among Hong Kong locals and Mainland Chinese immigrants; on the contrary, when an *inclusive and harmonious* identity is activated, positive emotional responses and attitudes are expected.

In Study 3a, priming Hong Kong students with the ideology of multiculturalism in Greater China (MGC) only resulted in a close to marginally significant effect of reduced disgust towards Hong Kong-Mainland culture mixing. Study 3b seeks to further test this MGC prime and attempt to replicate the same patterns found in Study 3a. Additionally, Study 3b also includes an assimilation-oriented nationalist (AN) prime similar to that used in the

pilot study. Based on aversive reactions from minorities towards assimilation attested in prior European studies (Verkuyten, 2005), the AN prime is expected to elicit a priming effect opposite to that generated by the MGC prime.

The current study (Study 3b). As discussed in Chapter 1, a significant decrease in the strength of identification with the “Chinese national” identity compared to other identities has been observed among Hong Kong local residents since the 1997 handover. Consequently, Study 3b includes the AN prime that emphasizes the assimilation of Hong Kong identity into Chinese identity, in contrast to the multicultural China ideology emphasized by the MGC prime, to test whether any potentially contrastive priming effects on ethnic identity strength would be elicited by the AN prime. Ethnic identity strength was therefore also measured to test whether both primes would affect the strength of identifying with the affiliated “ethnic Chinese” identity among participants, as demonstrated in the pilot study. The emotional responses associated with the activation of a certain group identity were considered to be one of the most important outcomes of priming. In the Hong Kong context, it is expected that the MGC priming would trigger more positive emotions than negative emotions, and vice versa for the AN priming. The resulting negative emotions triggered by AN priming would subsequently contribute to the aversive reactions related to the perception of Mainland China.

Ultimately, the main goal of this research design is to further examine the association between disgust towards culture mixing and cultural identities in the Hong Kong context by taking identity conflicts into account when comparing the distinct impacts of two ideologies regarding cultural diversity. It is hoped that this study can provide insights into the underlying mechanism of negative emotional reactions towards cultural mixing, thereby contribute to a better understanding of current social issues in Hong Kong.

Study 3b was preregistered at <https://osf.io/dyw39/> during the beginning stages of the data collection process. The hypotheses listed in the following sections were slightly modified

since then, and some of the less relevant hypotheses from the original registration are not discussed here. Appendix 3.1 presents a brief report on those removed hypotheses and results.

Hypothesized total effects. The predicted total effects of the two primes compared to the control condition, as well as on the measures of emotional responses, identity, and disgust; in addition to the predicted total effects of self-rated identity on disgust, are proposed in Hypothesis 1:

Hypothesis 1. AN-primed participants will experience lower levels of positive affect and higher levels of negative affect compared to the control group; whereas MGC-primed participants will experience higher levels of positive affect and lower levels of negative affect compared to the control group.

Parallel effects are expected to occur on the superordinate identities. First, the primes may have contrasting effects on the ethnic Chinese identity of participants, as proposed in Hypothesis 2a:

Hypothesis 2a. AN-primed participants will rate themselves lower on ethnic Chinese identity compared to the control group; whereas MGC-primed participants will rate themselves higher on ethnic Chinese identity compared to the control group.

Consistent with Study 3a, the MGC prime is expected to promote positive attitudes towards the Chinese national identity. In study 3b, this identity is measured together with Hong Kong local identity through the MISS, reflecting the identity conflicts among the Hong Kong participants. Considering that the willingness to integrate into mainstream society activates both HIS and AIS (Ward et al., 2018), the MGC prime should promote participant willingness to integrate, thereby elevating both HIS and AIS, whereas the AN prime should discourage such intentions, thereby reducing both HIS and AIS, as proposed in Hypothesis 2b:

Hypothesis 2b. AN-primed participants will rate themselves lower on both HIS and AIS compared to the control group, whereas MGC-primed participants will rate themselves higher on both scales compared to the control group.

Similarly, the two primes are expected to have contrasting effects on disgust towards culture mixing, as proposed in Hypothesis 3:

Hypothesis 3. AN-primed participants will rate mixed images as more disgusting compared the control group, whereas MGC-primed participants will rate mixed images as less disgusting compared to the control group.

Hypothesized mediational effects. How will the effects of the primes on the disgust measure be mediated by emotional responses and self-rated identities? Hypothesis 4a proposes a possible conjecture:

Hypothesis 4a. Ethnic identity strength will mediate the priming effects on disgust towards culture mixing, of which the AN prime will have positive indirect effects on disgust through ethnic identity strength, whereas the MGC prime will have negative indirect effects on disgust through ethnic identity strength.

In Study 1, negative correlations between HIS, AIS, and disgust towards culture mixing were found among Hong Kong participants; Study 2 subsequently observed the negative cross-lagged effect of HIS and the positive cross-lagged effect of AIS respectively on the disgust measure. Consequently, the current study expects that priming effects on HIS and AIS would also be transferred onto the disgust measure, as proposed in Hypothesis 4b:

Hypothesis 4b. HIS and AIS will both mediate the priming effects on disgust towards culture mixing, of which the AN prime will have positive indirect effects on disgust through both HIS and AIS, whereas the MGC prime will have negative indirect effects on disgust through both HIS and AIS.

It is expected that after reading the AN prime, participants would rate their ethnic identity to be weaker as a consequence of negative emotional reactions; in contrast, after reading the MGC prime, participants would rate their ethnic identity to be stronger as a consequence of positive emotional reactions. Consequently, Hypothesis 5a expects that both primes also indirectly

affect disgust through emotional affects and ethnic identity strength according to the path model proposed in Figure 5.3:

Hypothesis 5a. Compared to the control condition, AN priming would increase negative affect, thereby leading to increased disgust through reduced ethnic identity strength, whereas MGC priming would increase positive affect, thereby leading to decreased disgust through increased ethnic identity strength.

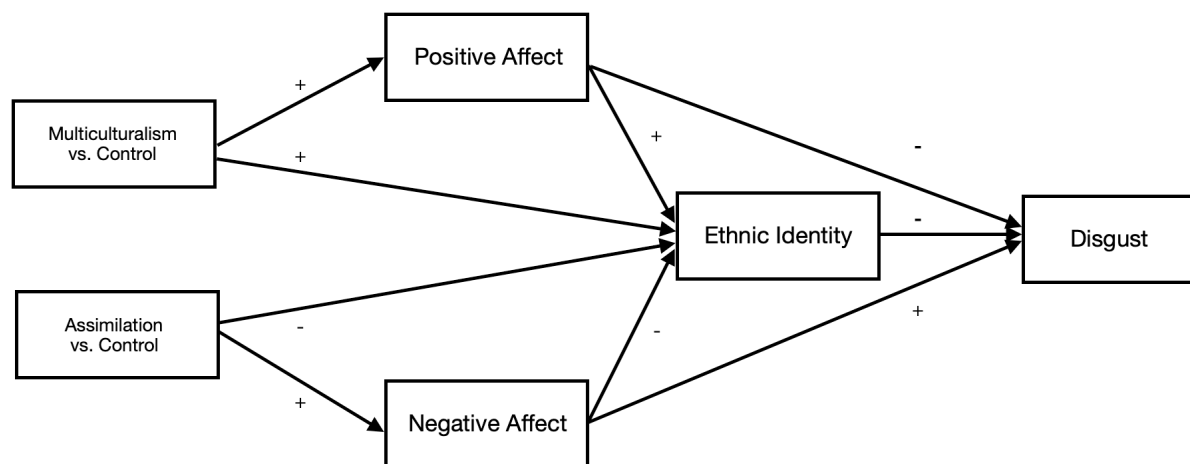


Figure 5.3. Proposed path model showing priming effects on disgust towards culture mixing through positive affect, negative affect, and ethnic identity strength.

Similarly, Hypothesis 5b also expects that both primes will have contrasting effects on disgust through HIS and AIS respectively according to the path model proposed in Figure 5.4:

Hypothesis 5b. Compared to the control condition, AN priming would increase negative affect, thereby leading to increased disgust through reduced HIS and AIS, whereas MGC priming would increase positive affect, thereby leading to decreased disgust through increased HIS and AIS.

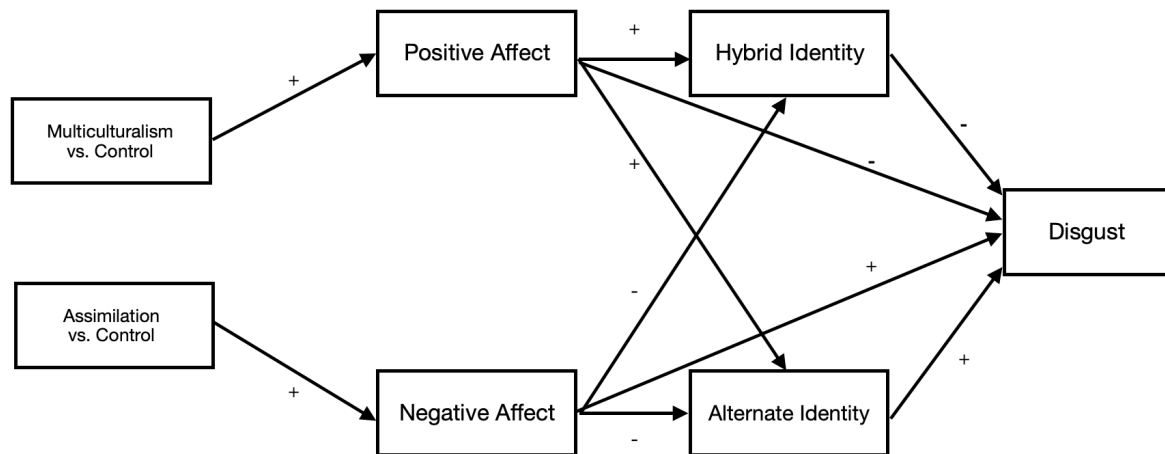


Figure 5.4. Proposed path model showing priming effects on disgust towards culture mixing through positive affect, negative affect, HIS, and AIS.

Method.

Participants. In total 174 undergraduate students, all of which were identified as Hong Kong permanent residents and had never participated in previous studies of this project, were recruited from the Education University of Hong Kong through online advertisements sent through the university-internal email system. Prior to data collection, the ideal sample size for the study was calculated using G*power with a typical effect size value of $r = .21$ ($f = .2148$), which found that to achieve 80% power in ANOVA, at least 210 participants were required to detect significant differences between the 3 priming groups. Given the sample size of 174 participants, this study is therefore slightly underpowered with regards to ANOVA analysis; however, the same effect size is sufficient for to achieving 95% power in multiple linear regression analysis using 4 predictors, which only requires a sample size of 92 subjects.

Participants were instructed to visit a computer lab to complete a 25-minute questionnaire on individually designated computers. Upon entering the lab, they were greeted by a native Cantonese speaker and instructed to sit down in preassigned seats, prevented them

from talking to each other and peeking at each other's answers. Once participants had finished the first measure of the questionnaire, they were randomly assigned to one of three priming condition groups: AN prime ($N=53$), MGC prime ($N=58$), or control ($N=56$). After reading the corresponding priming materials, participants proceeded to complete responses for the remaining measurements as described in the following section. Each participant received HK\$50 as compensation upon completing the questionnaire.

The data of 3 participants were excluded due to missing responses for manipulation check questions as well as the data of an additional 4 participants based on the Mahalanobis distance of the main variables of the current study, namely the PANAS scale, the disgust measure, and the two MISS subscales. The final sample consisted of 167 participants, of which 35 were males and 132 were female. The mean (M_{age}) of the participants was 20.8 years, with a standard deviation of 2.92 years and a range of 17-42 years.

Measures.¹²

Priming manipulation. As stated previously, priming conditions were implemented by random assignment using the online questionnaire hosted on Qualtrics, with participants being assigned to one of three groups: AN prime, MGC prime, or control. This assignment facilitated the investigation of the potential aversive effects of AN priming as compared to MGC priming.

AN-primed participants read a paragraph describing the 1997 handover of Hong Kong and the assimilation of the “Hongkonger” identity into the “Chinese national” identity. The priming material was adapted that used in the pilot study and modified to emphasize the assimilation process. A translated sample of the material is given below:

“China resumed its sovereignty over Hong Kong in 1997. Some people think that since Hong Kong has returned, it is no longer meaningful to use ‘Hong

¹² The same Social Distance Scale and Dual Cultural Selves as Study 3a was measured in the current study. The brief report of relevant statistics can be found in Appendix D.

Kong people' to describe themselves. Instead, they think they should use 'Chinese (中国人)'. In 2008, the proportion of Hong Kong people who identifying themselves as "Chinese" increased by 7-12% compared with that of 2007 ..."

MGC-primed participants read a paragraph describing the celebration of diverse cultural phenomena in the Greater China area; aside from some slight modifications, the priming material was identical to that used in Study 3a.

Control group participants read a paragraph of neutral text about the chemical element of iron adapted from Wikipedia. A sample of the material is reproduced below:

"Iron is a chemical element with chemical symbol is Fe, atomic number 26, and relative atomic mass 56. It is a type of transitional metal. Iron is the most commonly used material on earth..."

After reading these materials, participants in all three groups were presented with a question item asking "to what extent do you agree with the above paragraph?" Responses were rated on a 7-point Likert scale from "strongly disagree" (1) to "strongly agree" (7) that included a "neutral" (4) score. The question item was then followed by a writing task related to the priming material: for both the AN and MGC priming groups, participants were asked to briefly list up to five reasons for supporting the argument in the paragraph, whereas control group participants were asked to briefly list up to five reasons why iron is useful.

The PANAS Scale. The emotional state of participants was measured using a modified 10-item version of the Positive Affect and Negative Affect Schedule (PANAS) scale originally developed by Watson, Clark, and Tellegen (1988). The scale consists of two subscales, with 5 items measuring positive affect and another 5 items measuring negative affect. Responses for all items were rated on a 6-point Likert scale from "not at all" (1) to "extremely" (6). The Positive Affect subscale yielded excellent reliability, McDonald's $\omega = .91$ and Cronbach's α

= .91. The Negative Affect subscale yielded good reliability; McDonald's $\omega = .89$ and Cronbach's $\alpha = .89$.

Strength of ethnic Chinese identity. The ethnic identity strength of participants was measured using the same modified 4-item measure (Reed & Aquino, 2003) applied in both the pilot study and Study 3a, with the identity in question being the “ethnic Chinese” (中华民族) identity. Sample items included “It’s great to be ethnically Chinese” and “I am extremely proud of my affiliation with ethnic Chinese people.” The scale yielded acceptable reliability, McDonald's $\omega = .87$ and Cronbach's $\alpha = .83$.

Disgust measure. Disgust towards culture mixing was measured by same scale used throughout the project, but according to the methods applied in Study 3a that used only the group of 5 mixed image stimuli. The scale yielded good reliability for the current study, McDonald's $\omega = .87$ and Cronbach's $\alpha = .86$.

MISS. The multicultural identity styles were measured using the same scale developed by Ward et al. (2018) according to the methods applied across Study 2 that treated HIS and AIS as two separate subscales. In the current study, the two identities measured in the original scale were replaced with “Hongkonger” and “Chinese national” for the Hong Kong participants. All question items were rated on a 7-point Likert scale from “strongly disagree” (1) to “strongly agree” (7) that included a “neutral” (4) score. The HIS subscale yielded an excellent reliability, McDonald's $\omega = .93$ and Cronbach's $\alpha = .93$. The AIS subscale yielded an acceptable reliability, McDonald's $\omega = .80$ and Cronbach's $\alpha = .79$.

Demographics. The last section of the survey questionnaire included several questions about the participants' age, gender, year of study, and permanent residency status.

Results.

Test of Hypothesis 1. A multivariate analysis of variance (MANOVA) was conducted with priming conditions as fixed factors and positive affect and negative affect as dependent

variables; results suggested a significant main effect of priming on the dependent variables, $F(2,164) = 9.8, p < .001$, Wilk's $\lambda = .80$. Separate ANOVA tests indicated that the effect of priming conditions was significant on positive affect, $F(2,164) = 4.76, p < .05, \eta^2 = .05$. Post hoc tests with Holm correction showed that the MGC condition (hereafter abbreviated as *G*) had a higher positive affect score than both the control condition, $t = 2.46, p < .05$, Cohen's $d = .46$; $M_G = 2.78, SD = 1.22$; $M_{control} = 2.27, SD = 1.01$, and AN (hereafter abbreviated as *N*) condition, $t = 2.29, p < .05$, Cohen's $d = .42$; $M_N = 2.30, SD = 1.12$. No significant difference was observed between the AN and control conditions, $t = -.14, p = .89$, Cohen's $d = .03$.

The effect of priming conditions was also significant on negative affect, $F(2,164) = 13.37, p < .001, \eta^2 = .14$. Post hoc tests with Holm correction showed the AN condition had a higher negative affect score than both the control condition, $t = 4.63, p < .001$, Cohen's $d = .83$; $M_N = 2.46, SD = 1.23$; $M_{control} = 1.58, SD = .85$, and MGC condition, $t = 4.37, p < .001$, Cohen's $d = .78$; $M_G = 1.64, SD = .86$. No significant difference was observed between the MGC and control conditions, $t = .30, p = .76$, Cohen's $d = .07$.

Given that AN priming was found to solely increase negative affect and that MGC priming solely increased positive affect, Hypothesis 1 was only partially supported.

Test of Hypothesis 2a. A univariate ANOVA test was conducted with priming conditions as fixed factors and ethnic identity strength as the dependent variable. The main effect of priming on identity strength was significant, $F(2,164) = 4.01, p < .05, \eta^2 = .06$. Post hoc tests with Holm correction showed that the AN condition resulted in lower ethnic identity strength compared to both the MGC condition, $t = -2.52, p < .05$, Cohen's $d = .49$; $M_N = 3.51, SD = 1.16$; $M_G = 3.98, SD = 1.12$, and the control condition, $t = -2.42, p < .05$, Cohen's $d = .45$; $M_{control} = 3.92, SD = 1.23$. No significant difference was observed between the MGC and control conditions, $t = -.09, p = .93$, Cohen's $d = -.02$. Given that only AN priming negatively impacted ethnic identity strength, Hypothesis 2a was only partially supported.

Test of Hypothesis 2b. A MANOVA test was conducted with priming conditions as fixed factors and HIS and AIS scores as dependent variables. The main effect of priming on both MISS dimensions was non-significant, $F(2,164) = .78, p = .54$, Wilk's $\lambda = .98$. Separate ANOVAs also showed non-significant main effects of priming conditions on both HIS, $F(2,164) = .70, p = .50, \eta^2 = .01$; $M_N = 3.58, SD = 1.37$; $M_G = 3.67, SD = 1.45$; $M_{control} = 3.91, SD = 1.44$, and AIS, $F(2,164) = 1.5, p = .23, \eta^2 = .02$; $M_N = 3.67, SD = 1.10$; $M_G = 3.76, SD = 1.11$; $M_{control} = 4.01, SD = 1.11$. Given that no differences between priming conditions were found on the MISS subscales, Hypothesis 2b was not supported.

Test of Hypothesis 3. A univariate ANOVA test was conducted with priming conditions as fixed factors and the mean score of the disgust measure as the dependent variable. The results showed a non-significant main effect of priming, $F(2,171) = .69, p = .50, \eta^2 = .01$. Post hoc tests with Holm correction found no significant differences between the AN and control conditions, $t = 1.11, p = .81$, Cohen's $d = .21$; $M_N = 2.75, SD = 1.38$; $M_{control} = 2.48, SD = 1.15$, or between the MGC and control conditions, $t = .89, p = .81$, Cohen's $d = .17$; $M_G = 2.70, SD = 1.39$. Given that no total effect was found on disgust for either of the primes, Hypothesis 3 was not supported.

Test of Hypothesis 4a. The proposed path model was tested using Lavaan, with SE being estimated by 5000 bootstrap samples. The multi-categorical exogenous variable of priming conditions was dummy-coded into two dummy variables: AN priming versus control (NC), and MGC priming versus control (GC). Because the model was a saturated model, indices of model fit were not available for reference. Consistent with the test of Hypothesis 2a, the AN prime significantly decreased ethnic identity strength, $\beta = -.23, p < .05$, 95% CI = [-1.04, -.15], but the MGC prime did not, $\beta = .01, p = .92$, 95% CI = [-.41, .45]. Moreover, after controlling for both dummy condition variables (NC and GC), ethnic identity strength negatively predicted disgust, $\beta = -.54, p < .001$, 95% CI = [-.72, -.47]. The joint significance

of the effect pathways was then tested, with results revealing a significant indirect effect of the AN prime increasing disgust through ethnic identity, $\beta = .12, p < .05, 95\% \text{ CI} = [.09, .65]$, that was absent for the MGC prime, $\beta = -.01, p = .92, 95\% \text{ CI} = [-.27, .25]$. Consequently, only the “NC–ethnic identity–disgust” pathway was significant, and Hypothesis 4a was only partially supported.

Test of Hypothesis 4b. The proposed path model was tested using Lavaan, with SE being estimated by 5000 bootstrap samples. Again, because the model was a saturated model, indices of model fit were not available for reference. Consistent with the test of Hypothesis 2b, no significant priming effects were found on either HIS or AIS ($ps > .05$). Moreover, after controlling for both dummy condition variables, HIS negatively predicted disgust, $\beta = -.61, p < .001, 95\% \text{ CI} = [-.76, -.38]$, but not AIS, $\beta = .18, p = .18, 95\% \text{ CI} = [-.08, .46]$. The joint significance of the effect pathways was then tested, with results revealing non-significant indirect effects of GC through both HIS, $\beta = .06, p = .30, 95\% \text{ CI} = [-.14, .48]$, and AIS, $\beta = -.02, p = .48, 95\% \text{ CI} = [-.24, .06]$, as well as NC through both HIS, $\beta = .09, p = .10, 95\% \text{ CI} = [-.03, .45]$, and AIS, $\beta = -.02, p = .33, 95\% \text{ CI} = [-.23, .03]$. Given that no indirect priming effects were found on disgust through either MISS subscale, Hypothesis 4b was not supported.

Test of Hypothesis 5a. The proposed path model in Figure 5.3 was tested using Lavaan, with SE being estimated by 5000 bootstrap samples. The results suggested an excellent model fit, $\chi^2 = .09, df = 2, p = .96, \text{CFI} = 1.0, \text{TLI} = 1.08, \text{RMSEA} = 0, p_{\text{close-fit}} = .97, 95\% \text{ CI} = [0, 0], \text{SRMR} = .01$. Regression results showed that NC positively predicts negative affect, $\beta = .37, p < .001, 95\% \text{ CI} = [.23, .50]$, while GC positively predicts positive affect, $\beta = .21, p < .01, 95\% \text{ CI} = [.07, .35]$. After controlling for both dummy-coded condition variables, negative affect negatively predicted ethnic identity strength, $\beta = -.34, p < .001, 95\% \text{ CI} = [-.46, -.21]$, while positive affect positively predicted ethnic identity strength, $\beta = .57, p < .001, 95\% \text{ CI} = [.46, .68]$. Furthermore, after controlling for both dummy-coded condition variables and both

affect variables, ethnic identity strength negatively predicted disgust, $\beta = -.51, p < .001$, 95% CI = $[-.66, -.36]$, whereas negative affect positively predicted disgust, $\beta = .16, p < .05$, 95% CI = $[.01, .31]$. Thereafter, the joint significance of the two pathways was also tested for indirect effects, with results revealing significant indirect effects for both the “GC–positive affect–ethnic identity–disgust” pathway, $\beta = -.06, p < .05$, 95% CI = $[-.11, -.01]$, and the “NC – negative affect–ethnic identity –disgust”, $\beta = .06, p < .01$, 95% CI = $[.02, .10]$.

The analysis demonstrated that the AN prime indirectly increased disgust through increasing negative affect and decreasing ethnic identity strength, whereas the MGC prime indirectly decreased disgust through increasing positive affect and increasing ethnic identity strength; Hypothesis 5a was therefore supported. Figure 5.5 illustrates the revised path model following the above tests.

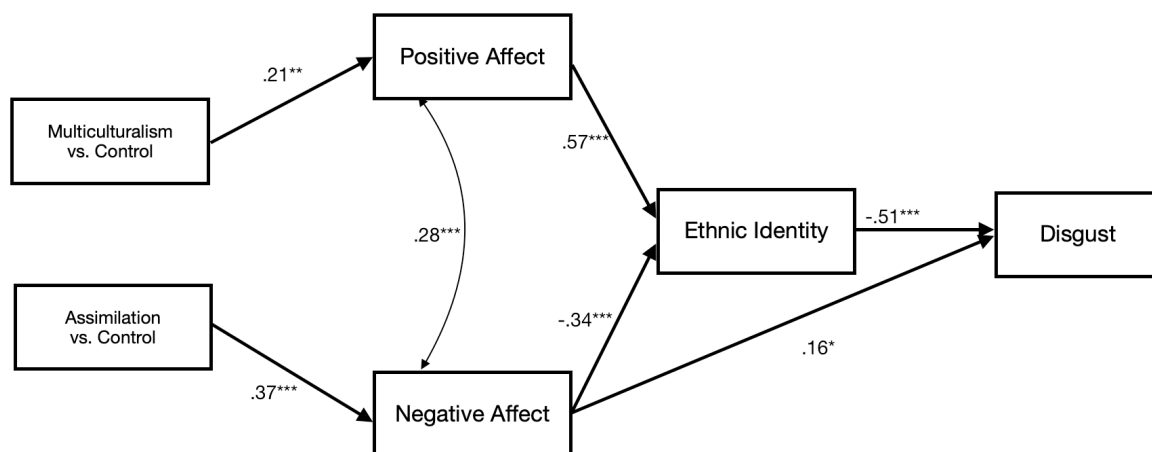


Figure 5.5. Path model showing priming effects on disgust towards culture mixing through positive affect, negative affect, and ethnic identity strength. Only significant paths are shown in the diagram with standardized path coefficients. (* $p < .05$, ** $p < .01$, *** $p < .001$).

Test of Hypothesis 5b. The proposed path model in Figure 5.4 was tested using Lavaan, with SE being estimated by 5000 bootstrap samples. The results suggested a good model fit, $\chi^2 = 7.38, df = 4, p = .12$, CFI = .99, TLI = .94, RMSEA = .07, $p_{close-fit} = .27$, 95% CI = $[0, .15]$,

SRMR = .05. The first set of regression results showed that NC significantly predicts negative affect, $\beta = .37, p < .001, 95\% \text{ CI} = [.24, .51]$, while GC significantly predicts positive affect, $\beta = .21, p < .01, 95\% \text{ CI} = [.06, .35]$. After controlling for both affect variables, the effect of NC on AIS remained non-significant, $\beta = -.02, p = .78, 95\% \text{ CI} = [-.13, .10]$; on the other hand, both positive affect ($\beta = .39, p < .001, 95\% \text{ CI} = [.25, .52]$) and negative affect ($\beta = -.22, p < .01, 95\% \text{ CI} = [-.37, -.07]$) significantly predicted AIS. Similarly, the effect of GC on HIS remained non-significant, $\beta = -.06, p = .23, 95\% \text{ CI} = [-.15, .04]$; on the other hand, both positive affect ($\beta = .44, p < .001, 95\% \text{ CI} = [.33, .56]$) and negative affect ($\beta = -.27, p < .001, 95\% \text{ CI} = [-.40, -.15]$) significantly predicted HIS.

The final set of regression results, which regressed both dummy-coded condition variables, both affect variables, and both MISS subscales on disgust, showed that only negative affect ($\beta = .21, p < .01, 95\% \text{ CI} = [.07, .35]$) and HIS ($\beta = -.57, p < .001, 95\% \text{ CI} = [-.77, -.36]$) significantly predicted disgust. Thereafter, the joint significance of the two pathways was also tested for indirect effects, with results revealing significant indirect effects for the “GC–positive affect–HIS–disgust” pathway, $\beta = -.05, p < .05, 95\% \text{ CI} = [-.09, -.01]$, but non-significant indirect effects for the “NC–negative affect–AIS–Disgust” pathway, $\beta = -.02, p = .20, 95\% \text{ CI} = [-.04, .01]$. Given that a direct effect pathway remained from negative affect to disgust, the alternative indirect effect pathway of “NC–negative affect–disgust” was also tested, with results supporting the presence of significant indirect effects, $\beta = .08, p < .01, 95\% \text{ CI} = [.02, .14]$. Moreover, significant indirect effects were also found for the “NC–negative affect–HIS–disgust” pathway, $\beta = .06, p < .01, 95\% \text{ CI} = [.02, .10]$.

The analysis demonstrated that the AN prime indirectly increased disgust through increasing negative affect and decreasing HIS, whereas the MGC prime indirectly decreased disgust through increasing positive affect and increasing HIS; Hypothesis 5b was therefore supported. Figure 5.6 illustrates the revised path model following the above tests.

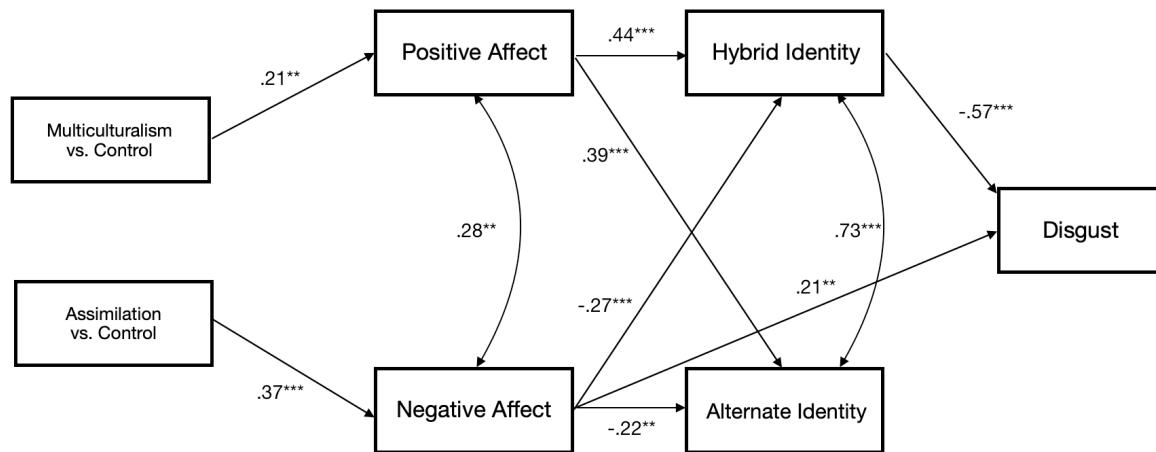


Figure 5.6. Path model showing the priming effects on disgust towards culture mixing through positive affect, negative affect, and HIS. Only significant paths are shown in the diagram with standardized path coefficients. (* $p < .05$, ** $p < .01$, *** $p < .001$).

Table 5.1 summarizes the results of the indirect effects testing conducted throughout Study 3b.

Table 5.1. *Summary of the Indirect Effects tested in Study 3b.*

Path	Hypothesis	β	95% CI	Conclusion
GC – Ethnic Identity – Disgust	H4a	-.01	[-.27, .25]	Unsupported
NC – Ethnic Identity – Disgust	H4a	.12	[.09, .65]	Supported
GC – HIS – Disgust	H4b	.06	[-.14, .48]	Unsupported
GC – AIS – Disgust	H4b	-.02	[-.24, .06]	Unsupported
NC – HIS – Disgust	H4b	.09	[-.03, .45]	Unsupported
NC – AIS – Disgust	H4b	-.02	[-.23, .03]	Unsupported
GC – Positive Affect – Ethnic Identity – Disgust	H5a	-.06	[-.11, -.01]	Supported
NC – Negative Affect – Ethnic Identity – Disgust	H5a	.06	[.02, .10]	Supported
GC – Positive Affect – HIS – Disgust	H5b	-.05	[-.09, -.01]	Supported
NC – Negative Affect – AIS – Disgust	H5b	-.02	[-.04, .01]	Unsupported
NC – Negative Affect – HIS – Disgust	H5b	.06	[.02, .10]	Supported

Discussion. By comparing two different ideological primes in parallel, Study 3b examined the distinct effects of promoting multiculturalism in Greater China and assimilation into the Chinese nation on emotional responses, ethnic Chinese identity, multicultural identity styles, and disgust towards culture mixing among Hong Kong students. Data analysis observed both the constructive effect of MGC priming—which decreased disgust towards culture mixing through promoting positive affect, increasing ethnic identity strength, and elevating HIS—and the aversive effect of AN priming—which increased disgust towards culture mixing through promoting negative affect, reducing ethnic identity strength, and suppressing HIS—results that were consistent with the expectations of the study. Together, the phenomena resulting from the

distinct priming effects represent the context for Hong Kong-Mainland conflicts in contemporary Hong Kong.

The two primes triggered divergent patterns in emotional responses; the MGC prime elicited positive affect rather than negative affect, whereas the AN prime did the opposite. This result echoes previous findings that activating certain social categories changes the emotions associated with affiliated group identities. In this case, the notion of multiculturalism in the Greater China area was probably an inclusive superordinate category with no identity conflicts or negative events related to Hong Kong; these desirable evaluations were therefore more likely to evoke positive emotions. On the other hand, the assimilation of Hong Kong identity into Chinese identity was a significant reminder of unpleasant recent events; the priming of an assimilatory Chinese national ideology possibly hardened the local identity and induced protective responses, consequently triggering the negative emotions associated with the assimilatory identity.

Study 3b also measured ethnic Chinese identity as one of the outcomes potentially affected by the primes. The results indicate that only the AN prime decreased ethnic identity strength while the MGC prime had no effect. Apart from inconsistent mediating effects that suppressed the priming, this is likely because ethnic identity strength might have already reached a ceiling as shown in the pilot study, leaving little room for further raising by MGC priming. Conversely, the negative impact of the AN prime was strong enough to reduce ethnic identity strength.

Although national identity strength was not directly measured in Study 3b considering its potential confounding of the priming effects, it was indirectly measured as one of the conflicting cultural identities for Hong Kong locals within the MISS subscales. Subsequent ANOVAs did not reveal any significant difference between priming conditions on disgust towards culture mixing or MISS. Nevertheless, given the strong correlations among ethnic

identity strength, MISS and PANAS; the priming effects were suspected to either be relatively small and lack sufficient power to be detected, or masked by inconsistent mediation patterns.

Indeed, testing of mediation models revealed several indirect effect pathways as hypothesized. The significant mediating effect of ethnic identity strength on the positive path from the AN prime to disgust was observed. Subsequent tests also observed mediation of the negative effect of the MGC prime on disgust through the mediators of greater positive affect and greater ethnic identity strength, in addition to mediation of the positive effect of the AN prime on disgust through the mediators of greater negative emotion and lesser ethnic identity strength. Moreover, similar indirect effects were observed through HIS. The MGC prime decreased disgust by increasing positive affect and HIS, whereas the AN prime increased disgust by increasing negative affect and decreasing HIS. These indirect effects were small but significant, indicating that the emotional affects evoked by the primes shared an important common variance between the priming effects and outcomes. In other words, by having an emotional reaction to a prime, the relevant identification of the individual will be altered according to that reaction and subsequently affect the individuals' perception of the mixing of cultures related to the identification.

As an adaptive identity management strategy, HIS was positively predicted by positive affect evoked by the MGC prime and negatively predicted by negative affect elicited by the AN prime. When controlled for as a covariate along with HIS, AIS served as alternative and maladaptive strategy that was predicted in the same way as HIS, but with smaller effect sizes. Both HIS and AIS work as strategies of cultural identity management for acculturating towards a multicultural society, and both of them have important functions in different contexts when people wish to integrate into society (Ward et al., 2018). Study 3b examined MISS for majority group members in Hong Kong and found that consistent with previous findings, HIS was still a functional strategy for Hong Kong locals as it negatively predicted disgust towards culture

mixing. On the other hand, AIS positively predicted disgust; however, this relation was only marginally significant.

If these findings are interpreted in terms of cultural contamination embedded in culture mixing studies, the multicultural identities management styles possibly represent how individuals alienate or internalize outgroup cultures as a result of modifying the perception of outgroup compatibility with their own ingroup culture. By testing several hypothesized indirect effect pathways, small but significant priming effects were observed passing through emotional affects and identity styles that ultimately altered the level of disgust towards culture mixing. These processes not only unraveled links among disgust towards culture mixing, ethnic identity strength, cultural identity styles and intergroup emotions; but also provided implications for how to change the level of this disgust by manipulating how people perceive their belongingness to social categories.

It is noticed that in Study 3b, the Positive Affect and Negative Affect were shown to be positively associated when considering all participants together. One of the reasons could be that the PANAS was measured using a unipolar scale from “not at all”, “a little bit” all the way up to “very strong”. Unlike bipolar scales, in the current study there’s no “neutral” option as well as “disagree”, as a result, participants might not be able to contrast positive emotions with negative emotions; instead, they might perceive complex emotions after reading the primes and exhibit co-occurrence of positive and negative affect. This phenomenon was studied in previous research and East Asians demonstrated non-related Positive Affect and Negative Affect patterns compared to western samples (Larsen, Hershfield, Stastny, & Hester, 2017; Spencer-Rodgers, Peng, & Wang, 2010). For example, when negative emotions were provoked after reading the assimilation prime, they might also indicate some degree of positive emotions. On the other hand, considering each condition separately, the correlations within each of the three conditions ($r_{MGC} = .15, p = .26$; $r_{AN} = .27, p < .05$; $r_{control} = .39, p < .01$) are relatively low;

moreover, visual inspection suggests this positive relation in the overall sample may contain more noise (perhaps due to different conditions) rather than being meaningful (Wagenmakers et al., 2018).

In summary, Study 3b employed an experimental design that demonstrated the desirable influence of MGC priming on the adaptive perception of ethnic identity and multicultural identity styles, as well as its effect on reducing disgust towards Hong Kong-Mainland culture mixing among Hong Kong local residents. The experimental design also demonstrated the salient aversive effect of AN priming on the maladaptive perception of ethnic identity and multicultural identity styles, as well as its effect on increasing the disgust towards culture mixing. Especially within the context of conflicting intergroup relationships in contemporary Hong Kong, caution is advised regarding considerations of how public messages should be delivered and what emotional responses they will evoke.

Chapter 6: General Discussion

Overview

Culture mixing, the conjunctive and mixed presentation of different cultural symbols (Chiu et al., 2009) that triggers the universal and fundamental aversive reaction of disgust (Cheon et al., 2016; Rottman et al., 2018), was observed to be occurring in the context of Hong Kong in a pattern that bears great similarities to previously attested examples of interethnic cultural mixing, even as the particular mixture in Hong Kong was unique in containing two sub-regional cultures: a Sino-Western local Hong Kong culture and a modern Mainland Chinese culture. The three component studies of the current project repeatedly observed the associations that culture mixing had with cultural identities and the process of acculturation in the multicultural society of Hong Kong. For both minority group Mainland Chinese immigrants in Hong Kong or majority group Hong Kong locals, how individuals integrate the multiple cultural identities that they had was significantly related to how they perceive culture mixing. In Study 1, the disgust measure of culture mixing (Cheon et al., 2016) was modified and validated through applying it to the newly created Hong Kong-Mainland cultural mixture, the results of which replicated the patterns demonstrated in previous research and verified its measurement structure; moreover, a potential negative association between this disgust and hybrid cultural identity styles was discovered for both Hong Kong local residents and Mainland Chinese immigrants. In Study 2, two separate two time-point longitudinal studies surveyed Mainland Chinese students who had recently arrived in Hong Kong and measured their cultural identity styles, disgust towards culture mixing, and life satisfaction over time, discovering cross-lagged impacts of initial cultural identity management styles on later disgust, as well as the cross-lagged impact of initial disgust on later life satisfaction. In Study 3, three priming studies focused on Hong Kong local students were conducted to explore a possible intervention to reduce disgust at cultural mixing by

influencing identity style, comparing two distinct ideologies that affect individual perceptions about ethnic Chinese identity, multicultural identity styles, and finally disgust towards culture mixing: a multicultural Greater China (MGC) ideology that increases Chinese / multicultural identity strength and reduces disgust, and an assimilatory Chinese national (AN) ideology that weakens Chinese / multicultural identity strength and increases disgust.

Limitations / Future Directions

Some limitations of this project are worth mentioning. First, due to limited resources available, our samples predominantly consist of females and university students, on account of conducted studies in a university with an unequal gender balance. Although we did not expect gender differences in our research – nor do studies in related fields suggested their existence – the experiences of these specific participants will inevitably be different from individuals belonging to other social groups with significantly different backgrounds—such as social workers and the cross-border working class—thereby affecting perceptions of cultural identity styles and culture mixing.

Second, the design of the component studies, especially Study 2, was slightly underpowered. Because Study 2a was conducted on a sample pool of designated size, the total sample size was less than ideal even with a low dropout rate. On the other hand, although a larger sample size was available for measurements at the first time point, Study 2b was also affected by small sample size due to a high dropout rate at the second time point. In addition, a disadvantage of using the dual time-point design is its ineffectiveness in tracking changing trends and identifying mediating effects in longitudinal design. Even with repeated measurement across two waves of data collection, it is difficult to allocate large amounts of resource to resolve the lack-of-power issues in our project. Nevertheless, we mostly replicated the cross-lagged pattern of the causal relation between disgust and life satisfaction, thereby drawing some promising directions from the findings.

As another consequence of small sample sizes, we were unable to conduct latent variable analysis, such as using SEM to test path models across all studies, in our project. Given these circumstances, all the interpretations made from the models were assumed to hold without measurement error and without taking correlations within factor structure into account. Future studies should focus on identifying particular effect sizes and allocating more resource to increase the power to detect such effect sizes.

Despite these aforementioned limitations, we were still able to consistently observe disgust towards Hong Kong-Mainland culture mixing and its associations with cultural identities across three studies; most crucially, these observations were attested among both local residents and Mainland Chinese immigrants in Hong Kong. Future studies may attempt to identify more dispositional or cultural factors that affect this disgust, in order to develop more effective intervention strategies for both cultural groups.

HIS / AIS in the Hong Kong context

In our studies, we found unusually high correlations between HIS and AIS. This may have implications for the meaning of MISS in the specific cultural contexts where adopting both identities has larger implications for attitudes about other social issues. From the Ward et al. (2018) study we can see that HIS and AIS were also positively correlated across different ethnic groups, but with lower coefficients ($r_{\text{NewZealandChinese}} = .21$, $r_{\text{Mauritian}} = .20$, $r_{\text{IsraeliArab}} = .38$). A positive correlation is logical as both identity styles should be activated by the desire of identity integration and attempts to internalize both ethnic and host cultural identities. Despite the high synchronization of the two identity styles in our sample, when controlled as covariates, both HIS and AIS demonstrated a relatively consistent adaptative functioning pattern as previous study showed, for example, in Study 1 HIS negatively predicted disgust for both groups, AIS marginally and positively predicted disgust for Mainland Chinese, and in Study 2b HIS marginally negatively predicted disgust while AIS

positively predicted disgust. These results suggest that, the two styles of MISS still captured a similar process regarding the cultural perception among both cultural groups.

On the other hand, for both of the cultural groups in the current project, perceptions of the outgroup memberships (“National Chinese” for Hong Kong locals, “Hongkonger” for Mainland Chinese) were major determiners of both HIS and AIS ratings, since they were commonly low-identified. It is possible that a great proportion of variance was explained by the strength of dis-identified identity. Both cultural groups in the current project have a potentially dis-identified identity in MISS: some Hong Kong locals were rejecting the national identity as shown in previous studies, while some Mainland Chinese in Hong Kong found it difficult to identify with local identities due to perceived prejudice from local residents.

However, given the possible explanations above, this pattern could also be a unique phenomenon for Hong Kong studies. These results may suggest that, for Chinese people in Hong Kong dealing with two sub-cultural identities that are closely related to each other, the hybrid style and alternate style are more similar than different, though small distinctive adaptative functions exist. In future studies, the unique correlations between HIS and AIS in Hong Kong could be further explored in terms of the variation of one disidentified identity. In summary, this problem should be addressed in future studies on validation of MISS among the Chinese population and evaluations of cultural differences between Hong Kong and Mainland Chinese cultures.

Methodological Exploration

Several new statistical approaches were applied in this project that aimed to enhance the analytical strategies, provide additional information that supplemented traditional statistical methods, and obtain more accurate understandings of the data. First, Bayesian approaches were applied to typical statistical test such as the Pearson correlation and

ANOVAs as compensation for the small sample sizes of our project. With its popularity having increased in recent years, Bayesian analysis is frequently promoted as offering straightforward interpretations of statistical results in terms of how strong the evidence supports one hypothesis over another, as compared to the traditional null hypothesis significance testing approach that relies on rejecting the null hypothesis (Wagenmakers, Wetzels, Borsboom, & van der Maas, 2011; Wagenmakers et al., 2018). Furthermore, with powerful sequential analysis and robustness check functions, Bayesian analysis has now been implemented in user-friendly software, making it more useful for tracking trends of hypothesis testing during data collection. Although not presented for every piece of information in the dissertation, the Bayesian approach was applied to all three studies, and is briefly discussed in Appendix.

Second, beyond significance testing, many psychological studies were criticized as being obsessed with *p*-values while ignoring meaningful effects (Valentine, Aloe, & Lau, 2015). To determine whether the effects observed in our data were meaningful, in other words to test the effect sizes against minimal expectations, the equivalence test technique (Lakens, 2017) was adopted to test the correlation coefficients against the typical effect size value in social psychology ($r = .21$) as a means of determining whether given effect sizes were bigger than the smallest effect size of interest.

Lastly, we applied item response theory (IRT), in particular Rasch analysis, to test the validity of the modified measurement tools used in Study 1. IRT provides item-based and person-based information about the scales and offers detailed characteristics for each item; it was thus applied to gain insights into improving scale development, in addition to functioning as a complementary index of measurement validity. The Appendix presents the IRT results of the disgust measure.

Aside from innovations in statistical analysis throughout the whole project, a new research design was tried out through preregistering Study 3b on the Open Science Platform (OSF) in appreciation of open-science developments in psychology. In addition to testing preregistered hypotheses, we revisited our data and conducted measurement invariance tests between the two cultural groups in our project, intending to thoroughly inspect the potential cultural differences demonstrated by the recently developed inventories, as well as validate the modified measurement tools.

Theoretical Contributions

First, this project contributes to existing literature by applying research on culture mixing in the context of acculturation and exploring its associations with the integration of cultural identities. Research has shown that people hold universally negative perceptions towards culture mixing (Torelli et al., 2011; Cheon et al., 2016; Yang et al., 2016); however, culture mixing in a acculturation context has been rarely studied, especially with regard to questions of how people affiliate with multiple cultures, how belongingness to a particular culture, and how minority and majority group members in a multicultural society responds towards culture mixing (Harush et al., 2016). The current project expands this line of research by examining the mixture of two sub-regional cultures in Hong Kong, exploring its relationships to the integration two distinct identities and ideologies among both Mainland Chinese and Hong Kong university students.

Second, unlike previous research comparing cultural differences between Western and Chinese cultures (S. H. Ng & Lai, 2011; Hong, Fang, Yang, & Phua, 2013; Cheon et al., 2016), this project took a nuanced approach by contrasting two sub-regional Chinese cultures: Hong Kong culture and Mainland Chinese culture. Both of these cultures share a substantial common Chinese heritage; however, Hong Kong culture has deeply absorbed elements of Western culture amid its British colonial history, whereas Mainland Chinese

culture has become its own brand new and unique system. The results of our studies find robust evidence that cultural boundaries remain between Hong Kong and Mainland China despite having a lot in common. Furthermore, the differential preferences of these two cultures closely relates to the cultural identities of their respective group members and, more importantly, predicts the disgust towards Hong Kong-Mainland culture mixing of members.

Third, this project expanded the understanding of effects associated with a superordinate or common ingroup identity by examining cultural identity within the scope of identity conflicts in the Hong Kong context. Throughout this project, two pairs of the most salient cultural identities for Mainland Chinese immigrants (“Hongkonger” versus “Mainlander”) and Hong Kong residents (“Hongkonger” and “Chinese national”) that corresponded to their distinct life experiences in the city were examined. The project found that managing these pairs of identities had profound impacts on the acculturation process and intergroup attitudes. For Mainland Chinese students, successfully integrating their two identities represented an adaptive acculturation strategy; however, shifting between the two represented a maladaptive strategy. For Hong Kong residents, reading about the idea of a multicultural Greater China made them more prone to integrate their two identities; by contrast, exposure to the idea of assimilating into China made them less likely to integrate these identities and therefore less likely to identify as ethnically Chinese. The two identity conflicts observed throughout the project are therefore unique, functioning in dissimilar ways for both cultural groups. Unlike previous research focusing on the typically positive effects of the superordinate identity on reducing intergroup bias (Gaertner et al., 1993; Stone & Crisp, 2007; Gaunt, 2009; Gaertner & Dovidio, 2011), or the national identity as elicitor of discrimination against minorities (Schori-Eyal et al., 2015; Berndsen et al., 2017, 2018; Wojcieszak & Garrett, 2018), the current project shifted attention to how identity affects

individuals functioning in a multicultural society, as well as how its intergroup perceptions are affected through intrapersonal factors.

Finally, through examining the multicultural identity styles among local residents and Mainland Chinese immigrants in Hong Kong, this project extended the research on identity integration through the perspectives of both majority and minority groups in an immigrant society. Underscoring the necessity of incorporating acculturation expectations from the majority group in the host society into a theoretical understanding of the acculturation process, Studies 1 and 3 investigated cultural identity management styles and their associations with perceptions of culture mixing among local residents in addition to Mainland Chinese immigrants. Between these two groups, similar patterns in the relations between identity styles and cultural perceptions were found, which provide implications beyond the universal reactionary mechanism towards culture mixing, in addition to offering an interactive approach for immigration research to investigate relations between individuals and the cultures they identify with, as well as intergroup relations between cultural groups.

Implications for Hong Kong

During the time that this project was conducted, the necessity for Hong Kong to deal with its complex intergroup conflicts and identity crisis was more urgent than ever. This project captures several perspectives from two significant parties in the conflicts and explored how dispositional factors such as cultural identities and group memberships were linked to perceptions of the cultures involved in the conflicts. Informed by self-categorization theory (Turner et al., 1987), the important influence of a sense of belonging and self-perceived group categories on individual attitudes and behaviors is now understood. As Hong Kong now grapples with social, political, and economic integration with China, identifying the relevant identities affected by integration and interpreting those impacts is crucial to understanding the intergroup attitudes of both parties. Indeed, the results of this project

observed considerable impacts on both local residents and Mainland Chinese immigrants in Hong Kong, indicating that both sides were inevitably involved in the process. Beyond the fundamental negative reaction of disgust towards culture mixing, our project also revealed additional variance explained by cultural identity management styles, which offered an additional explanation for the conflicts and most importantly, provided constructive directions for improving identity-related policies and even cultural education curricula.

Being one of the most prosperous multicultural cities worldwide, Hong Kong bears the weight of absorbing diverse cultures and handling intergroup relations. Nevertheless, the contrasts between Mainland China and Hong Kong were made salient during this chaotic time, and rejecting Chinese culture became a central feature of the resulting identity crisis. Our findings among Hong Kong locals demonstrated that disgust towards Hong Kong-Mainland culture mixing was predicted not by Western cultural identification but by Chinese cultural identification, which in turn predicted the willingness to integrate with the superordinate Chinese national identity.

The experimental studies in our project shed light on how the negative reaction of disgust can be reduced, namely through promoting diversity in a multicultural Greater China but refraining from assimilating Hong Kong identity into Chinese identity, as the latter provoked stronger negative reactions than preserving the status quo. Indeed, recent research has suggested that ethnic Chinese biculturals who have grown up in a mixed cultural environment tend to have hybrid, blended cultural identities; however, the exposure to the mixed cultural environment was not related to their Chinese identification (Martin & Shao, 2016; Martin, Shao, & Thomas, 2019). Those studies suggest that Chinese identity perhaps becomes more salient in cultural conflicts rather than in a thriving diverse cultural environment. Furthermore, although we observed the beneficial effects of emphasizing multiculturalism, past research did not offer consistent supporting evidence. For example,

some studies reported that only a certain type of multicultural ideology improved attitudes toward immigrants (Mahfud et al., 2018), while others found no associations between multiculturalism and preference for culture mixing whatsoever (Cho et al., 2017). We considered our findings not to be contradictory towards previous research, but rather a piece of joint evidence that supports the cultural specificity of context-based culture mixing studies.



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Appendix A: Additional Measurements in Study 1 and Brief Report

Additional Measures

The Cultural Intelligence Scale (CQS). Ang et al. (2007)'s CQS was adapted to assess participants' self-perceived overall cultural knowledge. This measurement contains four sub-scales: Metacognitive CQ (MetaCQ, 4 items), Cognitive CQ (CogCQ, 6 items), Motivational CQ (MotCQ, 5 items) and Behavioral CQ (BehCQ, 5 items). Sample items like "I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds", and "I know the legal and economic systems of other cultures". All items in CQS were rated on a 7-point Likert scale ($1=strongly\ disagree$, $4=neutral$, $7=strongly\ agree$). In the present study, for MetaCQ, McDonald's $\omega = .89$ (Hong Kong) and .91 (Mainland China), Cronbach's $\alpha = .88$ (Hong Kong) and .91 (Mainland China); for CogCQ, McDonald's $\omega = .89$ (Hong Kong) and .89 (Mainland China), Cronbach's $\alpha = .89$ (Hong Kong) and .89 (Mainland China); for MotCQ, McDonald's $\omega = .87$ (Hong Kong) and .90 (Mainland China), Cronbach's $\alpha = .86$ (Hong Kong) and .89 (Mainland China); and for BehCQ, McDonald's $\omega = .88$ (Hong Kong) and .88 (Mainland China), Cronbach's $\alpha = .87$ (Hong Kong) and .86 (Mainland China). Overall, CQS yielded high reliability in the current study.

Modified Motivation CQS (Modified MotCQS). To assess the attitude towards a particular out-group, the MotCQ sub-scale was modified by replacing the general term "other culture(s)" with "Hong Kong people" (for Mainland participants) and "Mainland people" (for Hong Kong participants). Sample items like "I enjoy interacting with people from Mainland China", "I am confident that I can socialize with Hong Kong locals". Same as CQS, all items in modified MotCQS were rated on a 7-point Likert scale ($1=strongly\ disagree$, $4=neutral$, $7=strongly\ agree$).

The modified MotCQS yielded high reliability, McDonald's $\omega = .87$ (Hong Kong) and $.88$ (Mainland China), Cronbach's $\alpha = .87$ (Hong Kong) and $.88$ (Mainland China).

Acculturation Attitude Scale (AAS). This 16-item scale was developed by Berry et al. (2006) and in the current study, the Chinese translation was adopted from previous research on both local and Mainland Chinese students in Hong Kong (Hui et al., 2015). AAS is a classic acculturation measure that scales immigrants' attitudes toward ethnic cultural and host culture in two dimensions, results in a four quadrants of acculturation strategies (tendency): integration (accept host culture while maintain ethnic culture), assimilation (accept host culture but abandon ethnic culture), separation (reject host culture and maintain ethnic culture), marginalization (reject host culture and abandon ethnic culture). This scale is widely used in acculturation studies, and past research found immigrants who pursued integration strategy would have better psychological adaptation outcomes (Berry, 2005; Ward & Kennedy, 1994). Similar to Hui et al. (2015), all questions for Hong Kong participants were revised to assess their expectations on how Mainland Chinese immigrants should acculturate in Hong Kong, while in the Mainland Chinese version the questions remained the same to assess their own strategies. All items in AAS were rated on a 5-point Likert scale (*1-strongly disagree, 3-neutral, 5-strongly agree*).

In the current study, each sub-scale has four items, the separation sub-scale of AAS yielded relatively poor reliability, McDonald's $\omega = .57$ (Hong Kong) and $.66$ (Mainland China), Cronbach's $\alpha = .49$ (Hong Kong) and $.61$ (Mainland China); marginalization sub-scale, McDonald's $\omega = .74$ (Hong Kong) and $.79$ (Mainland China), Cronbach's $\alpha = .74$ (Hong Kong) and $.79$ (Mainland China); integration sub-scale, McDonald's $\omega = .66$ (Hong Kong) and $.81$ (Mainland China), Cronbach's $\alpha = .61$ (Hong Kong) and $.80$ (Mainland China); and for assimilation sub-scale, McDonald's $\omega = .77$ (Hong Kong) and $.80$ (Mainland China), Cronbach's $\alpha = .75$ (Hong Kong) and $.78$ (Mainland China).

Brief Results

CQS. In the Hong Kong sample, we found that the mean scores of all four CQ dimensions were not correlated to the mean score of disgust on mixed symbols. For MetaCQ, $r = .13, p = .22$, 95% CI = $[-.08, .32]$, $BF_{10} = .27$, 95% Credible Interval = $[-.08, .31]$; CogCQ, $r = .09, p = .39$, 95% CI = $[-.11, .28]$, $BF_{10} = .18$, 95% Credible Interval = $[-.11, .28]$; MotCQ, $r = -.02, p = .83$, 95% CI = $[-.22, .18]$, $BF_{10} = .13$, 95% Credible Interval = $[-.21, .18]$; BehCQ, $r = -.13, p = .20$, 95% CI = $[-.32, .07]$, $BF_{10} = .28$, 95% Credible Interval = $[-.32, .07]$. In the Mainland Chinese sample, similarly we found all CQ dimensions were not correlated to the mean score of disgust on mixed symbols. For MetaCQ, $r = -.05, p = .61$, 95% CI = $[-.23, .14]$, $BF_{10} = .14$, 95% Credible Interval = $[-.23, .14]$; CogCQ, $r = -.06, p = .52$, 95% CI = $[-.25, .13]$, $BF_{10} = .15$, 95% Credible Interval = $[-.24, .13]$; MotCQ, $r = -.08, p = .38$, 95% CI = $[-.27, .10]$, $BF_{10} = .17$, 95% Credible Interval = $[-.26, .10]$; BehCQ, $r = .04, p = .69$, 95% CI = $[-.15, .22]$, $BF_{10} = .13$, 95% Credible Interval = $[-.15, .22]$. Thus, we concluded that no relation was found between disgust towards culture mixing and CQ dimensions.

Modified MotCQS. In the Hong Kong sample, we found a significant correlation between the mean score of Modified MotCQS and the mean score of disgust on mixed symbols, $r = -.51, p < .001$, 95% CI = $[-.64, -.35]$, $BF_{10} = 154565.84$, 95% Credible Interval = $[-.64, -.34]$; while in the Mainland Chinese sample, such relationship was marginal, $r = -.17, p = .08$, 95% CI = $[-.34, .02]$, Bayesian Factor actually suggested that there's anecdotal evidence that favored the null hypothesis, $BF_{10} = .53$, 95% Credible Interval = $[-.34, .02]$. The results indicated that for Hong Kong participants, higher disgust level indicates lower motivation to making contact with Mainland Chinese, while for Mainland Chinese participants such relationship was not supported by our data. Equivalence Test result showed that for Hong Kong sample, r is significantly different from the TOST upper bound, $p < .001$, but not the lower bound, $p = 1.0$, and the 90% CI upper bound of r is lower than TOST lower bound, suggested

that this correlation is not equivalent and significantly different than $r = .21$. Thus, the motivation of making contact with outgroup members was a significant predictor of disgust towards culture mixing.

AAS. In the Hong Kong sample, we found that the mean score of disgust towards disgust on mixed symbols was not correlated with Separation, $r = -.09$, $p = .38$, 95% CI = $[-.29, .11]$, $BF_{10} = .19$, 95% Credible Interval = $[-.28, .11]$; Marginalization, $r = .07$, $p = .51$, 95% CI = $[-.13, .26]$, $BF_{10} = .16$, 95% Credible Interval = $[-.13, .26]$; and Integration, $r = -.06$, $p = .53$, 95% CI = $[-.26, .14]$, $BF_{10} = .15$, 95% Credible Interval = $[-.26, .14]$; but positively associated with assimilation, $r = .42$, $p < .001$, 95% CI = $[.24, .57]$, $BF_{10} = 828.23$, 95% Credible Interval = $[.23, .56]$. In the Mainland Chinese sample, the mean score of disgust towards on mixed symbols was not correlated with Separation, $r = -.04$, $p = .65$, 95% CI = $[-.15, .23]$, $BF_{10} = .13$, 95% Credible Interval = $[-.14, .23]$; but it was positively correlated to Marginalization, $r = .23$, $p < .05$, 95% CI = $[.04, .40]$, with Bayesian Factor only suggested anecdotal evidence, $BF_{10} = 1.95$, 95% Credible Interval = $[.04, .39]$; negatively associated with Integration, $r = -.32$, $p < .001$, 95% CI = $[-.48, -.15]$, with very strong evidence of $BF_{10} = 41.69$, 95% Credible Interval = $[-.48, -.14]$; also positively associated with assimilation, $r = .28$, $p < .01$, 95% CI = $[.10, .45]$, with moderate evidence of $BF_{10} = 9.82$, 95% Credible Interval = $[.10, .44]$. To conclude, we found that in Hong Kong higher level of disgust correlated to higher expectation for Mainland immigrants to assimilate, which contradicted our hypothesis; in the Mainland Chinese sample, higher level of disgust correlated to higher intention to marginalize and lower intention to integrate, which supported our hypothesis, except the intention of assimilation was similar to Hong Kong sample. The Equivalence Tests were conducted, for Hong Kong sample, the correlation between disgust and assimilation was not different from TOST upper bound, $p = .99$, but significantly different from the TOST lower bound, $p < .001$, and the 90% CI lower bound of r was higher than the upper TOST bound, indicated that the

correlation was not equivalent but significantly different from SESOI. For Mainland Chinese sample, the correlation between disgust and Marginalization was not significantly different from TOST upper bound, $p = .57$, but significantly different from TOST lower bound, $p < .001$, and the 90% CI overlapped with TOST upper bound, indicated that the correlation was not equivalent and not significantly different from SESOI; the correlation between disgust and Integration was significantly different from TOST upper bound, $p < .001$, but not lower bound, $p = .90$, and the 90% CI overlapped with TOST lower bound, indicated that the correlation was not equivalent and also not significantly different from SESOI; for the correlation between disgust and Assimilation, it was not different from TOST upper bound, $p = .79$, but significantly different from lower bound, $p < .001$, and the 90% CI overlapped with the TOST upper bound, suggested that this correlation was not equivalent and also not significantly different from SESOI. Thus, AAS did not establish meaningful relations with disgust towards culture mixing.

Appendix B: Rasch Analysis on Disgust Measure, Modified MotCQS and MISS

Concerns regarding the properties of self-report measures were taken into account when data was analyzed. To be specific, whether the 5-item disgust measure newly developed for these studies is valid, is an issue of the currently used instruments. Measuring a concept with multiple similar or identical items may lead to practice effect that commonly observed in repeated-measure designs. Perhaps a common sense of “getting used to the questions”, yet no systematic methodology could be applied for adjustment, is troublesome especially when composite scores of variables work out of our expectations. Although not directly accessing disgust, a recent study (Johar & Sackett, 2018) assessing emotions has found that repeated measurement influenced participants’ response intensity. Participants in the repeated measure group scored significantly lower in latter trials compare to the first trial, as well as compare to the single-trial group. The decline was sharp with moderate to strong effect sizes of Cohen’s *ds* ranged from .4 to .98. The decline of both positive affect and negative affect were observed. Possible solutions, as the article suggested, could be using prior item(s) to avoid being “too late”. In the current study, even uniform differences were assumed between subjects, there is still possibility of lacking variance or losing information by averaging these five items due to the possible floor effect of the items after the first trial, as stated above. But using only one item will definitely compromise the reliability of the current measure, and the item randomization generated five possible outcomes of “first item”, it is impossible to use only the first item as the indicator of disgust. As a result, to test whether the recently developed and self-modified measures in the current project can be compared across cultures, these scales will be tested using “item-based approach” (i.e. latent variable analysis) with regarding of the impact of each indicator. The goal is to minimize “The Flaw of Averages” (Savage, 2002) as much as possible.

To examine the validity of the modified measurement, we will apply multigroup CFA and compare measurement invariance between cultural groups. In addition, Item Response Theory (IRT), in particular Rasch analysis (Wright et al., 1994; Boone et al., 2013) will be conducted using WINSTEPS (Linacre, 2018) and as a supplementary index for measurement validity.

As discussed in the results section in Study 1, we found that for MISS, the two-factor structure was poorly fitted in the Hong Kong and the Mainland Chinese sample. In the hope of establishing valid associations among variables, as well as meaningful comparison between cultural groups, the recent developed, rarely cross-culturally studied, and modified measurement tools were examined using IRT, with regard of the potential problematic factor loadings discovered in CFAs. The Rasch analysis was applied to the Disgust Measure, modified MotCQS and MISS to test if items in such scales could be trimmed, as a means to develop short versions.

Prior to conducting Rasch analysis, all invalid respondents were removed from the data sets, considering that WINSTEPS does not have filter-alike functions. Data sets were also separately prepared by the two MISS sub-scales in accordance with the requirement of unidimensionality for Rasch analysis. Then Rasch analyses were carried out separately for each group on the Disgust measure, Modified MotCQS, MISS-HIS, and MISS-AIS. The item fit statistics were obtained from WINSTEPS and summarized in Table B below. We mainly evaluated the convenient quantitative measure of fit, namely INFIT and OUTFIT, of each item based on the conventional cutoff of MNSQ ranged from 0.7 to 1.3 and ZSTD ranged from -3 to 3 as indication of good fit (Wright et al., 1994).

Items were evaluated based on the above indices and cross compared between Hong Kong and Mainland Chinese group. The decision of item removal was made in respect of the rule of thumbs, but additional considerations were also taking into account. For example, if

an item only has one out of four indices exceeds the conventional boundary, and only slightly overfit or underfit, it will not be considered as severely misfit. After inspection of all items, no item was removed from the Disgust Measure, as well as Modified MotCQS. For MISS-HIS, in the Hong Kong sample item1 and item7 were removed, in the Mainland sample item 1, item 11 and item 13 were removed; for MISS-AIS, in the Hong Kong sample item 2, item 6 and item 14 were removed, in the Mainland sample item 6 and item 14 were removed. To test the measurement invariance across two groups, only the overlapped items from the remaining item pool were selected in the revised MISS: MISS-HIS contains item 3, item 5 and item 9; MISS-AIS contains item 4, item 8, item 10 and item 12. After item exclusion, the short version of MISS-HIS and MISS-AIS were re-analyzed using Rasch method. In the Hong Kong sample, the MISS-AIS still presented a misfitted item, specifically item 12 (INFIT =1.48, OUTFIT=1.36), thus we decided to further exclude this item from the scale. The final revised MISS included item 3, 5, 9 in HIS sub-scale, and item 4, 8, 10 in AIS sub-scale.

With the 6-item version MISS, we tested its measurement invariance across Hong Kong group and Mainland Chinese group. The configural model demonstrated a good fit, in both groups all factor loadings were significant at $p < .001$, ranged from .58 to .89 in Hong Kong group, and from .51 to .71 in the Mainland Chinese group, $\chi^2 = 35.45$, $df = 16$, $p = .003$, CFI = .951, TLI = .908, RMSEA = .109 [.060, .158], $p_{close-fit} = .027$, SRMR = .047, AIC = 4302.71, BIC = 4388.98. After constraining the factor loading across groups, the metric invariance model slightly improved, $\chi^2 = 45.48$, $df = 22$, $\Delta\chi^2 = 10.03$, $p = .123$, CFI = .941, TLI = .919, RMSEA = .102 [.059, .144], $p_{close-fit} = .026$, SRMR = .118, AIC = 4300.75, BIC = 4367.11. Further constraining intercept to test scalar invariance led to much worse model fit, which indicated the revised 6-item MISS was non-invariant after all, thus cannot be directly compared between groups.

Given the results of measurement model tests, we still adopted the original version of MISS in our studies and all analyses in this project were conducted separately by groups. Future study should analyze and modify MISS to fit Hong Kong and Mainland China context, if possible, develop potential short versions of MISS.



Table B. *Item measures, SE, INFIT and OUTFIT statistics of additional measures in Study 1*

Item	Hong Kong					Mainland				
	Measure	INFIT	INFIT	OUTFIT	OUTFIT	Measure	INFIT	INFIT	OUTFIT	OUTFIT
		MNSQ	ZSTD	MNSQ	ZSTD		MNSQ	ZSTD	MNSQ	ZSTD
Disgust Measure										
1	0.49	0.87	-0.7	0.74	-1.6	1.51	0.84	-0.7	0.69	-1.1
2	0.09	0.93	-0.4	0.85	-0.8	-0.48	1.02	0.1	0.81	-1.2
3	0.34	1.36	2.0	1.27	1.5	-1.04	0.93	-0.4	0.85	-0.8
4	-0.25	1.19	1.2	1.21	1.2	0.75	1.31	1.4	1.01	0.1
5	-0.68	0.80	-1.3	0.74	-1.5	-0.75	1.24	1.4	1.36	2.0
Modified MotCQS										
1	-0.17	0.96	-0.22	0.89	-0.72	0.36	0.94	-0.4	0.88	-0.87
2	-1.02	0.97	-0.15	0.96	-0.23	-0.37	1.04	0.31	1.03	0.25
3	-0.15	0.82	-1.27	0.79	-1.49	0.06	0.85	-1.08	0.86	-0.96
4	1	1.05	0.4	1.05	0.36	0.6	0.81	-1.37	0.82	1.35
5	0.34	1.20	1.34	1.12	0.88	-0.65	1.43	2.61	1.33	2.09
MISS-HIS										
1	0.49	1.25	1.67	1.52	2.85	-0.17	1.92	5.36	1.97	5.38
3	-0.43	1.04	0.34	0.98	-0.10	0.1	0.72	-2.21	0.71	-2.17
5	0.27	0.94	-0.37	0.92	-0.48	0.74	1.07	0.60	1.09	0.67
7	-0.24	0.67	-2.39	0.65	-2.47	-0.7	0.96	-0.23	0.90	-0.69
9	0.26	1.14	0.95	1.10	0.70	-0.05	1.18	1.28	1.16	1.10
11	0.06	0.73	-2.00	0.73	-1.84	0.07	0.64	-2.96	0.63	-2.99
13	-0.41	1.21	1.32	1.10	0.67	0	0.57	-3.65	0.56	-3.66
MISS-AIS										
2	-0.01	1.56	3.49	1.55	3.35	0.98	1.08	0.67	1.02	0.17
4	-0.04	0.73	-2.06	0.71	-2.24	-0.15	0.90	-0.77	0.87	-0.94
6	-0.47	1.33	2.13	1.24	1.57	-0.76	1.78	4.73	1.82	4.84
8	0.82	0.74	-2.07	0.73	-1.86	0.28	0.92	-0.58	0.97	-0.21
10	-0.02	0.92	-0.56	0.93	-0.49	-0.2	1.11	0.86	1.10	0.75
12	-0.32	1.28	1.83	1.20	1.32	-0.14	0.91	-0.66	0.91	-0.62
14	0.05	0.51	-4.27	0.52	-4.07	-0.01	0.55	-4.06	0.56	-3.92

Note. Rasch analysis was conducted separately for each scale/subscale, and separately for each cultural group. All test statistics are only comparable within each scale/subscale.

Appendix C: Descriptive Statistics of Additional Measures used in Study 2

Apart from the measurement tools discussed in Chapter 4, we also measured some typical inventories commonly used in acculturation studies. Due to their less relevance with the current thesis, we briefly reported the descriptive statistics below.

Measures in Study 2a

AAS. The same 16-item scale used in Study 1, described in Appendix A, was used in Study 2a to assess the strategies in acculturation process among Mainland Chinese students. All items in AAS were rated on a 5-point Likert scale (*1-strongly disagree, 3-neutral, 5-strongly agree*). Overall it yielded poor reliability. At T1, McDonald's $\omega = .53$, Cronbach's $\alpha = .49$; at T2, McDonald's $\omega = .40$, Cronbach's $\alpha = .32$.

Psychological Symptoms and School Adjustment. Adopted from an international survey among teenagers (Berry et al., 2006), this scale contains 15 items measuring negative psychological symptoms in daily life as well as 8 items measuring students' perceived school life quality, aiming to assess immigrants' acculturation process in school settings. Sample items are "I feel tired" and "So far I love my school". All items were rated on a 7-point Likert scale (*1=strongly disagree, 4=neutral, 7=strongly agree*), and overall yielded good reliability. For psychological symptoms, at T1, McDonald's $\omega = .89$, Cronbach's $\alpha = .89$; at T2, McDonald's $\omega = .88$, Cronbach's $\alpha = .87$. For school adjustment, at T1, McDonald's $\omega = .65$, Cronbach's $\alpha = .78$; at T2, McDonald's $\omega = .69$, Cronbach's $\alpha = .81$.

Behavioural CQS. A 5-item measure of behavioural cultural intelligence was used to measure participants' behavioural adaptation ability in acculturation process. This scale was one of the CQS subscales used in Study 1 and described in Appendix A. All items were rated on a 7-point Likert scale (*1=strongly disagree, 4=neutral, 7=strongly agree*), and overall yielded acceptable reliability. At T1, McDonald's $\omega = .67$, Cronbach's $\alpha = .64$; at T2, McDonald's $\omega = .89$, Cronbach's $\alpha = .89$.

Revised Multi-group Ethnic Identity Measure (MEIM). Developed by Phinney (1992), MEIM has been tested in a variety of research across-cultures. In the current project, we adopted a revised version (Roberts et al., 1999), which contains one open-end question and six scale items to assess participants' ethnic identity strength. A sample item would be "I have spent time trying to find out more about my own ethnic group, such as history, traditions, and customs". All items were rated on a 7-point Likert scale (*1=strongly disagree, 4=neutral, 7=strongly agree*), and overall yielded excellent reliability. At T1, McDonald's $\omega = .87$, Cronbach's $\alpha = .86$; at T2, McDonald's $\omega = .91$, Cronbach's $\alpha = .90$.

Measures in Study 2b

The exact same measures were used in Study 2b.

AAS. Overall it yielded poor reliability. At T1, McDonald's $\omega = .47$, Cronbach's $\alpha = .50$; at T2, McDonald's $\omega = .70$, Cronbach's $\alpha = .65$.

Psychological Symptoms and School Adjustment. This scale yielded excellent reliability in both time points. For psychological symptoms, at T1, McDonald's $\omega = .91$, Cronbach's $\alpha = .91$; at T2, McDonald's $\omega = .93$, Cronbach's $\alpha = .92$. For school adjustment, the reliability is acceptable. At T1, McDonald's $\omega = .68$, Cronbach's $\alpha = .66$; at T2, McDonald's $\omega = .70$, Cronbach's $\alpha = .69$.

Behavioural CQS. Overall it yielded good reliability. At T1, McDonald's $\omega = .82$, Cronbach's $\alpha = .81$; at T2, McDonald's $\omega = .89$, Cronbach's $\alpha = .89$.

Revised Multi-group Ethnic Identity Measure. At T1, McDonald's $\omega = .81$, Cronbach's $\alpha = .78$; at T2, McDonald's $\omega = .86$, Cronbach's $\alpha = .85$.

Appendix D: Descriptive Statistics of Additional Measures used in Study 3

In Study 3a and Study 3b, participants' cultural identification was measured by Dual cultural selves. Prior to reading the priming materials, participants were instructed to complete the dual cultural selves as baseline measure of culture preference for Western culture or Chinese culture. Developed by Ng et al. (S. H. Ng, Yam, & Lai, 2007), this 4-item measure was used to assess the bicultural self. The Chinese self was measured by two items on a 7-point Likert scale (*1=very weak, 4=neutral, 7=very strong*), one item reflects cultural identification "I feel the Chinese identity in me is..." and one item reflects cultural influence "I feel the influence of Chinese culture on me is..."; same items were used on Western self except "Chinese" was replaced by "Western". The Chinese version was adopted from a previous study on Hong Kong permanent residents (T. K. Ng et al., 2016). Overall the scale yielded acceptable internal consistency, McDonald's $\omega = .70$ and Cronbach's $\alpha = .67$.

The prejudice against Mainland Chinese was measured by a 5-item modified version of the Bogardus Social Distance Scale (Miller & Salkind, 2002) rated on a 7-point Likert scale (1= extremely disagree, 7 = extremely agree). The scale accessed perceived social distance towards Mainland Chinese, starting from "kinship by marriage" to "citizen of my country". The scale yielded an excellent reliability, in Study 3a, McDonald's $\omega = .90$ and Cronbach's $\alpha = .90$; in Study 3b, McDonald's $\omega = .92$ and Cronbach's $\alpha = .92$.

Appendix E: Materials and Data for All Studies

This project contains three separate studies with multiple independent sub-studies. To avoid unnecessary redundancy and, as mentioned in Chapter 2, to show the appreciation for open-science community, the survey materials together with data sets and replicable output files were available via Open Science Platform website:

https://osf.io/8uvzg/?view_only=64de393e51d1446587f0e8b7fd51abe3

Sample Image Stimuli used in Disgust towards Culture Mixing

Group	Ingroup	Outgroup	Mixed
Hong Kong			
Mainland			