MULTICULTURAL EXPERIENCE: A MULTIDIMENSIONAL PERSPECTIVE, SCALE DEVELOPMENT, AND VALIDATION

by

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Abstract

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This research offers a refined conceptualization of multicultural experience. This multidimensional conceptualization distinguishes between relatively superficial and more substantial multicultural experiences, labeled *multicultural exposures* and *multicultural interactions*, which can be measured based on frequency, duration, and breadth. This construct and the corresponding instrument, Multicultural Experience Assessment (MExA), were validated in five studies. In Studies 1a and 1b, content validity was established. In Studies 2 and 3, exploratory and confirmatory factor analyses confirmed the two-factor structure of multicultural experience. Study 4 provided some evidence for the convergent, discriminant, and criterion-related validities. The reliability of the 13-item MExA ranged between .76 and .83; and the use of both student and non-student national samples established some generalizability of the instrument. Overall results improve our understanding of the construct and offer a psychometrically tested measure.

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Chapter 1

Overview of the Dissertation

Research Question

Multicultural experience (MCE) refers to individuals' experiences of encountering or interacting with the elements and/or members of foreign cultures (Leung, Maddux, Galinsky, & Chiu, 2008). In this age of globalization and immigration, MCE has become an important construct of interest. Research on MCE has grown since 2003; however, a clear and consistent conceptualization of the construct has not evolved. In addition, competing effects have emerged. While the experience of living abroad is related to increased creativity in both individual problem solving situations and dyadic negotiations, the experience of traveling abroad is not (Maddux & Galinsky, 2009). One way to explain the different findings about the relationship between MCE and creativity is to examine MCE as a multidimensional construct that includes different types of experiences. Although there have been calls for a multi-component investigation of the construct (Endicott, Bock, & Narvaez, 2003; Maddux, Leung, Chiu, & Galinsky, 2009; Rich, 2009), the current MCE research categorizes all MCEs and relationships under one MCE category. Thus, this research aims to answer the question of whether the MCE construct is comprised of more than one type of experience. In this research, I propose a multidimensional construct of MCE, which is developed and validated in five studies.

Importance of the Topic

Globalization, migration, and new social media have increased the cultural diversity around us. Immigration numbers are increasing worldwide (United Nations, Department of Economics and Social Affairs, Population Division, 2012), and organizations and educational institutions have become more culturally diverse due to globalization (Lau & Murnighan, 1998; van Knippenberg & Schippers, 2007). In addition, our social circles are increasingly multicultural as highly populated social media, such as Facebook, Twitter, and Youtube, link people from around the world. The new social media populated by people from around the globe and the sharply increasing use of the Internet raise people's exposure to different cultures' values and norms. Also with the technological and business improvements in air transportation, traveling globally has gotten easier and cheaper compared to a few decades ago, contributing to the growth of MCEs. Almost everyone in developed countries is exposed to cultures different than their own (Dong, Day, & Collaco, 2008).

With the rapid increase in global interconnectedness, MCE has become an important construct of interest. Until about a decade ago, MCE was underinvestigated in the psychological sciences (Segall, Lonner, & Berry, 1998), but since then the research on MCE has grown (c.f. Endicott et al., 2003; Leung & Chiu, 2008, 2010; Narvaez & Hill, 2010). The associations between MCEs and moral reasoning and intercultural sensitivity (Endicott et al., 2003), moral judgment and mindsets (Narvaez & Hill, 2010), and creativity (Leung et al., 2008; Leung & Chiu, 2010) have each been explored. Amidst this development, however, a clear and consistent conceptualization of MCE has not evolved, and unsurprisingly, competing effects have emerged. The

current research develops a multi-faceted conceptualization and definition of MCE using the extant literature.

Purposes of the Current Research

Although MCE has been described as having multiple dimensions (e.g. Endicott et al., 2003; Narvaez & Hill, 2010), and there have been calls for a multi-component investigation of the construct (Maddux et al., 2009; Rich, 2009), none of the existing MCE measures distinguish different MCE dimensions. Rather the research (c.f. Leung & Chiu, 2008, 2010) tends to categorize all multicultural exposures and relationships under one MCE category. Therefore, one purpose of this research is to distinguish different types of MCEs. In addition, the literature currently lacks consensus on the definition of MCE, and instead utilizes different definitions of culture, and incorporates different components such as intercultural growth or openness attitude. Therefore, this research aims to present a multidimensional conceptual definition of MCE and corresponding measure.

Contributions of the Current Research

From a theoretical perspective, there is a current need for the development of a multidimensional conceptualization and measurement of MCE. This research contributes to the MCE literature by developing and validating such a multidimensional MCE construct. The instrument validated in this research distinguishes between two different MCE types, i.e. *multicultural exposure* and *multicultural interaction*, each of which is measured in terms of frequency, breadth, and duration. This instrument can be utilized in research to investigate whether MCE types have distinct relationships with organizational variables such as creativity, managerial effectiveness, and cross-cultural

adaptation. In this type of research, it is critical to have an instrument that differentiates different MCE types. Thus a new multidimensional MCE instrument will contribute to the research investigating the differential effects of MCE types on organizational variables.

From an applied perspective, such a multidimensional measure of MCE may be utilized in organizations to assess different MCE types that are related to particular outcomes of interest that the management aims to improve, such as innovation, conflict, and team performance. As management identifies individuals who lack preferred types of MCE, it will provide developmental opportunities to boost those MCEs to harvest particular benefits identified by research. Similarly, such a multidimensional instrument will be useful in many fields and for multiple purposes, such as selection of consultants, teachers, or advisors to be assigned to particular tasks or teams, in which desired performance outcomes may be predicted by different MCE types.

Organization of the Dissertation

Chapter 2 presents the current conceptualizations and measurements of MCE. Based on conceptual and empirical support from multiple literatures, I propose a new multidimensional conceptualization of MCE. Chapter 3 describes the development of the item pool for the corresponding MCE scale. Chapters 4-7 describe five construct validation studies for the new Multicultural Experience Assessment (MExA). Specifically, Chapter 4 presents two studies (Studies 1a and 1b) that aim to ensure that this new MCE scale has high content validity. In Chapters 5 and 6, I present exploratory (Study 2) and confirmatory (Study 3) factor analyses. In Chapter 7, I report a validation study (Study 4) to test convergent, discriminant, and criterion-related

validities of the scale. Finally in Chapter 8, I discuss possible contributions and limitations of the studies, as well as future research directions.

Chapter 2

Conceptual Definition of Multicultural Experience

Research on the construct of multicultural experience (MCE) has grown since 2003 (Endicott et al., 2003; Leung & Chiu, 2008, 2010; Leung et al., 2008; Narvaez & Hill, 2010). In this nascent literature, several operationalizations have been used to target MCE, and few concrete definitions have been offered. In this research, I draw upon the present MCE literature and related literatures on work experience and international experience to offer a refined conceptualization and definition of MCE. For this purpose, in this chapter, I report existing definitions and measures of MCE. I emphasize the differences among present MCE conceptualizations and measures. Then, based on conceptual and empirical support from multiple literatures, I present a multidimensional conceptualization of MCE. I elaborate on the components of *multicultural exposure* and *multicultural interaction*, and how they can be measured based on different aspects (such as breadth and frequency). In addition, I reflect on four special cases of MCE, which are traveling abroad, living abroad, having a bicultural identity, and being a first- or second-generation immigrant. Finally, I present the conceptual differences between MCE and multiple similar constructs.

Current Conceptualizations and Measures of MCE

Research examining the implications of MCE has been blooming. (See Table 1 for a list of the research that examines MCE.) Five papers have examined MCE, with varying specificity in terms of providing a definition or clear conceptualization of MCE.

In their review of the research that investigated the relationship between MCE and creativity, Leung et al. (2008) provided the single existing definition of MCE, which states that MCE is "all direct and indirect experiences of encountering or interacting with the elements and/or members of foreign cultures" (p. 169).

Endicott et al. (2003), in their study of the relationships among MCE, moral reasoning, and intercultural sensitivity, did not specifically define MCE; however, their measure of MCE provided some information about their conceptualization of the construct. Namely, the authors measured MCE with the 105-item Multicultural Experiences Questionnaire (MEXQ[1]). They wrote that "MEXQ is a measure of multicultural experiences with and attitudinal openness toward diverse groups including ethnic minorities, immigrants, resident aliens, women, men, and homosexuals, as well as a range of political and religious orientations" (p. 410). Thus, their visualization of MCE includes experiences with cultures that exist within the same country (e.g. minorities, women), as well as attitudes (i.e. openness) towards these groups/cultures. However, attitudes should not be a part of the MCE construct. An individual's experience consists of things that the person encounters, undergoes, or lives through (Merriam-Webster, 2012) and changes over time. Although increases in experience may be positively (or negatively) related to some attitudes, such as openness (or closed-mindedness), the construct of experience is distinct from attitudes, which are relatively stable and partially individual difference based. Thus, the construct of MCE should not include an attitude component either.

The MEXQ instrument includes 53 questions on international travel experiences, diversity of friends, and personal multicultural activities, and 52 questions about

multicultural attitudes. MEXQ yields subscores for multicultural attitudes, multicultural activities, breadth of multicultural activities, and depth of multicultural activities. The breadth of multicultural activities is measured with items such as number of countries visited and number of languages spoken,[2] while the depth of multicultural activities is measured by items about multicultural reading, speaking, working, friendships, and courses, in addition to those about time spent in another culture, and degree of commitment to intercultural growth. These subscores suggest that the authors conceptualized MCE as consisting of different dimensions, such as breadth and depth of experience, although they did not explicate why MCE should be conceptualized as including attitudes. In addition, they reported no information about the factor structure, internal consistency, and inter-correlations among the subscores of the scale. Narvaez and Hill (2010) later reported that MEXQ was too expansive a measure (with 105 items) and that it produced inconsistent results.

Narvaez and Hill (2010), in their study of the relationships between MCE and moral judgment and mindsets, did not provide a definition for MCE; however, in their literature review they used "intercultural encounters" as a synonym for MCE. Intercultural encounters were defined "broadly [as] … those in which a person is exposed to a different or unfamiliar cultural practice or perspective" (p. 44). The authors developed and used the 15-item Multicultural Experiences Questionnaire (MEQ; α = .80; in Appendix A) to measure MCE. Similar to MEXQ, MEQ assesses MCEs with people from cultures of different countries *and* of different races and ethnicities within the same country. Narvaez and Hill (2010) posit that a measure of MCE should capture the "multiplicity of the construct" and assess both multicultural

experiences (i.e. behaviors) and openness to such experiences (i.e. attitudes). This way, they conceptualize MCE as consisting of two different factors, and MEQ includes questions about both experiences and attitudes. The authors did not provide further support for their argument that an attitude of openness should be a dimension of MCE. In addition, their results showed that the MEQ scale had a single-factor structure (as opposed to a two-factor structure that would reflect experience and openness dimensions).

In their study about the relationship between MCE and creativity, Leung and Chiu (2010) did not present a specific definition for MCE; however, they drew upon literatures on bilingual individuals, first and second-generation immigrants, diverse groups, and civilizations that open themselves to outside influences implying that they are individuals, groups, and societies with MCE. Thus, they imply that MCE is gained at different levels (e.g. individual, group, society) and by learning to speak another language competently, having first-hand involvement with cultures as first- or second-generation immigrants, or being open to ideas and perspectives of individuals from different countries and cultures. In Study 1, they primed MCE via a 45-minute presentation that consisted of American and Chinese cultural elements. The presentation materials depicted both cultures' characteristic aspects such as architecture, scenery, landscape, home decorations, furniture, apparel, cuisine, life, entertainment, recreation, music, movies, arts, and literature. Thus, with this priming, they created multicultural *exposure* but did not capture any interaction or involvement with those cultures. In Studies 2-5, an 11-item single factor Multicultural Experiences Survey (MES; in Appendix B) was developed and used (α = .71, .65, .68, .71 in four studies).

The scale collected information about whether participants could speak a foreign language, the percentage of their lifetime they had lived outside of their home U.S. state, whether their father and mother were born outside of the U.S., and the extent of their exposure to a culture other than mainstream American culture, as well as the types of cuisines served at their five most favorite restaurants, countries of their five most favorite musicians, and ethnicities of their five closest friends.

In addition to the research reviewed here that focused specifically on the MCE construct, Maddux and Galinsky (2009), Maddux, Adam, and Galinsky (2010), and Tadmor, Galinsky, and Maddux (2012) studied implications of living abroad and multicultural learning or identification. In this research, the authors relied upon the same MCE literature that Leung and Chiu (2010) and Leung et al. (2008) did. Maddux et al. (2010) complemented their description of MCE with literature about living abroad, expatriate experiences, and other cross-cultural experiences that are obtained via colleagues, family, friends, books, movies, music, research, or travel. In these studies, the authors either (i) recruited only participants who previously lived abroad, (ii) asked participants about the total time they had spent living abroad and the countries they lived in to capture MCEs, or (iii) asked participants whether they previously lived or traveled abroad. Thus, they focused on and operationalized two cases of MCE, namely, living and traveling abroad. In this research, the authors presented the implications for people who have MCE; however, living and traveling abroad assess more than MCE elements, such as multicultural knowledge and learning, which are distinct from MCE.

The current measures of MCE capture a variety of different facets, and illustrate the lack of consensus in the field. While MEXQ takes a more general approach to what

constitutes *multicultural* experience and includes experiences with minorities, women, and homosexuals, MEQ assesses experiences with people from different cultural-racial-ethnic backgrounds, and MES focuses on experiences with foreign cultures. MEQ includes items measuring an attitude of openness while MEXQ and MES do not. On the one hand, MES emphasizes questions about one's exposure, such as those about favorite restaurants and musicians, while MEXQ and MEQ do not. On the other hand, MES does not question any experiences of living or traveling abroad, while MEQ does. In addition, psychometric properties of these measures are not elaborated on in the literature. Information about the factor structure and internal consistency of MEXQ are unavailable (L. Endicott, personal communication, March 4, 2012); MES's internal consistency figures in some studies are missing (Leung & Chiu, 2008); and MEQ does not provide psychometric support for its proposed two-factor structure (Narvaez & Hill, 2010).

In summary, the previous research conducted on MCE does not agree on a definition of MCE. Current conceptualizations differ with regards to (a) contents (e.g. video exposure, experience, attitudinal openness), (b) the nature of the experiences MCE includes (such as immigrant or expatriate experiences, or experience of having friends from foreign cultures), and (c) the scope of the word "culture" used to define MCEs (i.e. foreign cultures or cultures that exist within one country). In this research, I draw upon related literatures on work experience and international experience to offer a refined conceptualization and definition of MCE.

Theoretical Background for a New Conceptualization

Main definitions. In order to define MCE, I first describe how I conceptualize "experience," "culture," and "multicultural" in this research. "*Experience"* refers to an individual's direct observations of and participation in events, and it consists of things that the individual encounters, undergoes, or lives through (Merriam-Webster, 2012). "*Culture"* is a learned system of meanings that promotes a sense of shared identity among its members (Ting-Toomey, 2004). It consists of institutions, traditions, beliefs, values, norms, symbols, and meanings (Lytle, Brett, Barness, Tinsley, & Janssens, 1995; Ting-Toomey, 2004). Cultures are identified and distinguished by differences in these cultural elements.

The terms culture and multicultural can be defined at different levels. For example, "Asian" or "African" culture depicts common cultural characteristics of wide geographical regions, while "French" or "Russian" culture depicts the cultural characteristics of societies that exist within country borders. Culture can also be defined at the level of sub-groups that exist within the same country, or at the organizational, departmental, or team level. Because culture has been defined at the national level by the majority of the research on MCE (c.f. Leung et al., 2008; Maddux & Galinsky, 2009) and in the field of cross-cultural management (c.f. K. Leung, Bhagat, Buchan, Erez, & Gibson, 2005; Tsui, Nifadkar, & Ou, 2007), I conceptualize the term "*multicultural"* as relating to or reflecting elements and/or members of *one or more foreign* cultures. "*Foreign or different cultures"* refer to all national cultures other than the dominant national culture of an individual, while *"foreign people"* refer to members of foreign cultures. Thus any situation or experience is multicultural when it

includes elements and/or members of cultures other than one's dominant national culture.

Conceptualizations of experience. Experience consists of a continuous stream of events in specific areas of our lives. Therefore, any systematic development of the experience construct must start with and focus on a *specific area of interest* (Quiñones, Ford, & Teachout, 1995). Thus, a conceptualization of MCE should include components that are specific to the multicultural context. Still, conceptualizations of the experience construct in two related fields, i.e. work experience and international experience, exhibit some differentiation of various experience types, and thus will be helpful in identifying different experiences for the multidimensional conceptualization of MCE.

Work experience. Ford, Sego, Quiñones, and Speer-Sorra's (1991) review of the work experience literature showed that most studies used tenure to measure work experience (Quiñones et al., 1995). Only a few studies measured experience by either the number of times an individual performed a given task (c.f. Lance, Hedge, & Alley, 1989), number of lateral moves an individual made within a specified period of time (c.f. Campion, Cheraskin, & Stevens, 1994), or actual content of the experiences (c.f. Mumford & Stokes, 1992). There was a lack of consistency in the definition and measurement of work experience and then a call for further research to examine the nature of the work experience construct (e.g., Ford et al., 1991; Hoffmann, Jacobs, & Gerras, 1992; Lance et al., 1989; Rowe, 1988). The multiple conceptualizations and measurements of work experience suggested that the construct of work experience is complex, and that there was a need for better definition and measurement (Quiñones et

al., 1995; Tesluk & Jacobs, 1998). Consequently, a multifaceted theorizing of work experience developed (c.f. Quiñones et al., 1995; Tesluk & Jacobs, 1998).

In this multidimensional view of work experience, qualitative, quantitative, and interactive components and different measurement modes of work experience were added to the conceptualization (Ford, Quiñones, Sego, & Speer-Sorra, 1992; Hoffmann et al., 1992; Quiñones et al., 1995; Tesluk & Jacobs, 1998). Quiñones et al. (1995) found in their meta-analytic review that measurement mode and specificity component moderated the relationship between experience and job performance, proving this multifaceted conceptual framework helpful. In sum, the term *experience* has already been conceptualized as a multidimensional construct in the work experience literature, distinguishing different aspects of work-related experience.

International experience. Researchers who study international experience have also attempted a multidimensional investigation. In his study on Western expatriates assigned to Hong Kong, Selmer (2002) categorized prior international experience as same-place (in Hong Kong), culturally-related (in Asia outside of Hong Kong), and culturally-unrelated (outside of Asia) experiences. Also, in a study of international experience and expatriate adjustment, Takeuchi, Tesluk, Yun, and Lepak (2005) differentiated current and past international experience. They categorized past international experience based on two dimensions: domain (i.e. work- vs. travel-related experience) and cultural specificity (i.e. past experience in the current assignment country vs. others). The authors found these differentiations useful, because their results showed that past international experience moderated the relationship between current assignment tenure and expatriate adjustment. Therefore, the international

experience literature provides some support for a multidimensional investigation of the experience construct as well.

In the current research, I draw on these multidimensional frameworks of work and international experience and argue that the MCE construct should also include components that reflect different context-specific aspects. That is, relatively milder and more substantial MCE types (such as relatively superficial exposures and more substantial personal interactions) should be distinguished.

A New MCE Conceptualization

Definition. According to the current multidimensional view, MCE is an individual-level construct that refers to the sum of all past and current exposures to *and* interactions with foreign cultures and people. This conceptualization of the MCE construct distinguishes relatively superficial and more substantial MCEs, resulting in two basic types of MCEs I call *multicultural exposure* and *multicultural interaction*. Each MCE type is measured based on its frequency, duration, and breadth. Thus, MCE is an accumulation of a lifetime of experiences that consist of multicultural exposures and interactions.

Two basic MCE types.

Multicultural exposure. The term *exposure* has been used previously in the MCE (c.f. Leung et al.'s review, 2008) and cross-cultural interaction literatures (c.f. Gurin, Dey, Hurtado, & Gurin, 2002) to refer to superficial effects of different cultures on individuals. Multicultural exposure describes any and all instances in which the person becomes subject to elements or members of foreign cultures without interacting with them. These instances involve concrete events, episodes, and observations that do

not include any interaction. The cultural elements one is exposed to include foreign architecture, arts, crafts, media, language, alphabet, food, stories, proverbs, clothing, and social, behavioral, religious, spiritual, and non-verbal practices.

Individuals are exposed to different cultures in a variety of ways, such as observing people from foreign cultures, trying foreign cuisines, watching foreign movies or videos, hearing people speak a foreign language, or looking at foreign architecture. Such exposure does not involve any communication or interaction with people from different cultures, but it has the potential to influence the individual and lead to learning or understanding about different cultures.

Multicultural exposure is similar to the concept of intercultural encounter that Narvaez and Hill (2010) used to refer to those instances in which a person is exposed to a different or unfamiliar cultural practice or perspective. Also, Leung and Chiu's (2010) MCE priming manipulated multicultural exposures because it consisted of visual and audio cues but not interactions with people. In addition, some multicultural exposure elements are measured by items on the MES (Leung & Chiu, 2010) that ask about the frequency of exposure to a culture other than the mainstream American culture, and about an individual's five most favorite restaurants and musicians (if they happen to be foreign).

Multicultural interaction. Negt and Kluge (1972) theorized experience as consisting of not only sensory cognitions, but also processes of *interaction* with the surrounding world. Thus *interactions* should be a component of one's *experience*.

Multicultural interaction describes any and all experiences that consist of verbal or non-verbal communication and reciprocal action or influence between the person and

members of foreign cultures. Multicultural interactions take a variety of forms as well. Some examples of multicultural interaction may include corresponding with foreign people online, working, socializing, dating, or dining with foreigners, and sharing personal problems and feelings with people from foreign cultures.

The MEQ (Narvaez & Hill, 2010) has a few items that measure multicultural interaction; however, this instrument is designed to measure experiences with not only nationally foreign but also different racial and ethnic cultures. Still, its questions assessing correspondence, work and friendship relationships, and attendance at intercultural communication courses capture some aspects of multicultural interaction. Also, there is one item on the MES (Leung & Chiu, 2010) that captures an element of interaction – it measures the number of foreign friends.

Therefore, I hypothesize that the factor structure of MCE will provide support for the existence of two main MCE types that are labeled multicultural exposure and multicultural interaction.

Hypothesis 1: Exploratory factor analysis of this MCE construct will reveal two factors, multicultural exposure and multicultural interaction, of MCE.

Measurement modes.

Both of these MCE types can be measured in terms of their frequency, duration, and breadth. *Frequency* refers to the number of times that an individual experiences a particular MCE (e.g. ranging between *never* and *multiple times a day*). *Duration* refers to the time length that the individual (has) experienced a particular MCE (e.g. interacting with people from foreign cultures for the last 5 years). Both frequency and duration measures are informative. For example, one person may experience

multicultural interactions *very frequently* for the duration of two years, while another person experiences multicultural interactions *less frequently* for the duration of twenty years. Finally, *breadth* measures the total number of cultures with which the individual has different MCEs. For example, an individual may have experience with regards to only one foreign culture (low breadth) or with a variety of foreign cultures (high breadth). Having experience with a variety of cultures becomes important in tasks where multiplicity of views and ideas are needed, such as creativity (c.f. Endicott et al., 2003; Ip, Chen, & Chiu, 2006) and team performance (c.f. Behfar, Kern, & Brett, 2006; Jehn, Northcraft, & Neale, 1999; Kirkman & Shapiro, 2005). The breadth of the multicultural exposure and multicultural interaction dimensions can also be differentially related with some outcomes of interest. For example, the breadth of interactions may be more important than the breadth of exposure with regards to expatriates' cross-cultural adjustment, because such adjustment necessitates a deeper understanding of foreign cultures and values than merely being subject to cultural artifacts.

Relationship Between Multicultural Exposures and Interactions

The multicultural exposure and interaction dimensions may or may not be correlated with each other. On the one hand, one can reasonably expect an individual who is exposed to different cultures to develop some interactions with members of those cultures. Similarly, an individual who has intensive interactions with people from different cultures may also be exposed to elements of those foreign cultures. On the other hand, an individual may be heavily exposed to multiple cultures without interacting with people from foreign cultures. For example, a person who lives in a

culturally diverse environment such as New York City (which is home to one of the most diverse populations in the world; New York City–Department of City Planning, 2012) may be working and socializing with Americans only, causing high multicultural exposure but not high multicultural interaction. Also, an individual who lives at a culturally homogeneous location and who has very limited multicultural exposure can develop high multicultural interaction by working in a multicultural team.

Special Cases: Traveling Abroad, Living Abroad, Biculturalism, and Immigration

Some particular life experiences increase both the multicultural exposure and interaction of an individual. Experiences of traveling abroad, living abroad, having a bicultural identity and/or being a first- or second-generation immigrant contribute simultaneously to both MCE types to some extent. Those individuals who belong to one or more of these groups will enjoy some level of increase in multicultural exposures and interactions. Therefore, these life experiences are considered special cases that provide individuals with a combination of multicultural exposure and interaction.

The current MCE literature and measures use one or more of these special cases to assess individuals' MCE. The MEQ (Narvaez & Hill, 2010) and the MES (Leung & Chiu, 2010) include questions about individual's history of traveling abroad (MEQ item #1), living in a contrasting community (MEQ item #13) or outside of one's home U.S. state (MES item #1).[3] Also, in their study of MCE and creativity, Maddux and Galinsky (2009) compared the creative benefits of previously traveling and living abroad. Moreover, the MCE literature draws on the literatures about bilinguals, biculturals, first- or second-generation immigrants, and living abroad to present

possible effects of having MCE (Leung & Chiu, 2010; Leung et al., 2008; Maddux et al., 2010; Maddux & Galinsky, 2009). Therefore, these four special multicultural experiences (i.e. traveling abroad, living abroad, having bicultural identity, and being a first- or second-generation immigrant) are acknowledged to contribute to and reflect some extent of MCE.

It is reasonable to expect that living or traveling abroad leads to MCE. An individual traveling to a foreign country will be exposed to and interact with the elements and members of that culture. For example, traveling to China exposes an individual to Chinese language, food, and media. This individual can observe Chinese individuals, interact with them (e.g. while trying to find a place or purchase something from a store), try to learn a Chinese language (e.g. Mandarin), attend cultural seminars, and join cultural events. In a similar vein, living abroad increases both one's exposure to and interactions with foreign cultures. In sum, traveling or living abroad contribute to both types of MCEs at different levels. Moreover, their total contribution to MCE can differ from individual to individual based on multiple personal and contextual factors, such as an individual's preferences or attitudes (e.g. desire and motivation to socialize and get involved with foreigners), or traveling purpose (e.g. education, work, family, or vacation).

Likewise, being bicultural or multicultural contributes to one's MCE. Bicultural individuals are those who have "internalized two cultures to the extent that both cultures are alive inside of them" (Hong, Morris, Chiu, & Benet-Martinez, 2000; p. 710). That is, two cultures take turns to guide bicultural individuals' thoughts and feelings. Parallel to this, multicultural individuals are those who have internalized

more than two cultures. Bicultural and multicultural individuals have access to more than one set of cultural schemas, scripts, and knowledge. That is, they are knowledgeable about more than one culture's alphabet, language, cuisine, art, values, and norms. If they have family or friendship ties with different cultures (e.g. having parents, relatives, or friends from different cultures), they maintain regular interaction with people from different cultures leading to increases in multicultural interaction. They watch movies about, read books about, listen to the music of, and enjoy the art of their second (or multiple) culture(s) leading to increases in multicultural exposure. In sum, being bicultural or multicultural contributes to both types of MCEs at different levels. In addition, its total contribution to MCE differs from individual to individual based on some personal and contextual factors, such as individual's preferences, attitudes, or environment.

Similarly, being a first- or second-generation immigrant contributes to MCE. First-generation immigrants who open themselves to their host culture enjoy high levels of cultural exposure in their new cultural environment. The host culture's language, cuisine, music, art, and media surround them, leading to increases in multicultural exposure. They develop friendships, work, or social relationships with the members of the host culture, leading to increases in multicultural interaction. These immigrants can even become bicultural individuals in time. Similarly, second-generation immigrants can be raised in two cultures, possibly leading to biculturalism. Thus, immigrants experience increases in multicultural exposures and interactions in their host culture. Again, increases in multicultural exposure, multicultural interaction, and in overall MCE as a result of being a first- or second-generation immigrant differ based on many

factors (e.g. attitudes, stage of acculturation), which are beyond the scope of this research.

It is important to point out that, although these four special cases signal having MCE and they have been used as proxies of MCE in the literature, they are not precise measures of MCEs. A precise measure of MCE should be able to assess different MCE levels of individuals who have one or some of these special experiences. Collecting data about whether an individual has any or some of these four special experiences does not help singling out their possible effects on each MCE dimension. Rather these special cases will contribute to multiple types of experiences. For example, an individual who lived abroad for 5 years can have high MCE but this particular information about living abroad does not enable us to isolate and measure the level of each MCE type. In addition, an individual can develop MCE without being in any of these four cases. Moreover, these four cases can reflect some level of cultural learning, knowledge, or cultural intelligence in addition to MCE. Therefore, effects attributed to these experiences may be driven by other underlying factors than MCE. For these reasons, in this research, MCE is not measured by these particular cases.

Conceptual Distinctiveness of MCE

To further clarify the nature of MCE, I discuss differences and similarities between MCE and some similar constructs: multicultural learning, cultural intelligence, global mindset, multicultural ideology, and interaction mindset.

MCE and multicultural learning. Experiential learning (Kolb, 1984) is an adult learning theory that highlights the critical role experience plays in learning and change; and it has been widely used in multicultural learning practice, such as study

abroad programs (see Lutterman-Aguilar & Gingerich, 2002). Kolb's experiential learning model (Kolb & Kolb, 2005) describes a learning process, with two fundamental processes of (1) grasping an experience, and (2) transforming the experience. Thus experience is a component of learning. In learning, an individual undergoes four stages – experiencing, reflecting, thinking, and acting. Simply put, in the learning process, the person experiences a tangible episode (experiencing), thinks about and reflects critically on those concrete experiences (reflecting), distills those reflections into conceptual interpretations (abstract conceptualization), and acts upon them (active experimentation) (Kolb & Kolb, 2005). Thus, multicultural learning describes the learning process a person goes through to gain knowledge and skills in a multicultural context. Maddux et al. (2010) primed multicultural learning (of people who have lived abroad previously) by asking them to recall and write about *a time in which they learned something new about a different culture.*

As can be seen, multicultural learning involves not only MCE, but also transformation of that MCE into multicultural knowledge, understanding, and skills via reflection, abstract conceptualization, and active experimentation. In sum, MCE is only the first stage of multicultural learning.

MCE and cultural intelligence. Cultural intelligence is defined as an individual's capability to adapt effectively to situations characterized by cultural diversity (Earley & Ang, 2003). Earley and Ang (2003) conceptualized cultural intelligence as a multidimensional concept that includes meta-cognitive, cognitive, motivational, and behavioral dimensions. Ang et al. (2007) also developed the Cultural Intelligence Scale (in Appendix C) that measured these four components (α for

metacognitive cultural intelligence = .71, cognitive cultural intelligence = .85, motivational cultural intelligence = .71, behavioral cultural intelligence = .83). Meta-cognitive cultural intelligence refers to one's mindfulness and awareness about one's own cognition during intercultural situations (Ang & Van Dyne, 2008). Cognitive cultural intelligence refers to an individual's acquired multicultural knowledge (Ang & Van Dyne, 2008). Motivational cultural intelligence is an individual's ability to direct his/her attention towards adapting to foreign cultures (Ang & Van Dyne, 2008). Finally, behavioral cultural intelligence refers to the extent to which individuals possess a wide repertoire of behavioral (verbal and non-verbal) skills (Ang & Van Dyne, 2008). In sum, cultural intelligence does not capture whether an individual has multicultural exposures or interactions. Rather it assesses whether the individual has multicultural knowledge and meta-cognitive, motivational, and behavioral capabilities to function and adapt effectively in cross-cultural situations. Thus, although MCE and cultural intelligence can be associated, they are distinct constructs.

MCE and global mindset. Global mindset has been mainly studied and discussed in the field of international business. In this arena, there are multiple definitions and perspectives to global mindset, generally agreeing that it reflects a highly complex cognitive structure. Govindarajan and Gupta (2001) define global mindset as a knowledge structure characterized by high differentiation and integration, combining openness to and awareness of diversity across cultures and markets with an inclination and ability to synthesize across this diversity. Thus, a critical element of global mindset is the *utilization of cognitive complexity in a cross-cultural context* (Clapp-Smith, Luthans, & Avolio, 2007; Levy, Taylor, Boyacigiller, & Beechler, 2007;

Srinivas, 1995). An executive with global mindset focuses on commonalities across markets rather than emphasizing differences among countries (Jeannet, 2000). Similarly, Rhinesmith (1992) argued that global mindset involves high levels of cognitive capabilities, particularly regarding information scanning and processing and integration of competing realities and demands. Therefore, global mindset reflects mainly the cognitive structure of an individual as utilized in cross-cultural contexts. Thus, it is different from the notion of MCE, which captures merely the level of one's exposure and interactions with different cultures and does not involve cognitive capabilities.

In addition to cognitive complexity, global mindset might involve factors such as openness toward and acceptance of multiple realms of action and meaning, curiosity, and acceptance of uncertainty (Levy et al., 2007; Srinivas, 1995). However, MCE does not involve any of these individual difference factors. MCE focuses on one's exposure to and interactions with different cultures and does not attempt to capture any individual differences.

Thus, MCE and global mindset are distinct constructs; however, they may be related. Arora, Jaju, Kefalas, and Perenich's (2004) found that among other demographic factors, a manager's foreign country living experience, having a family member from a foreign country, and job experience in a foreign country had statistically significant effects on a manager's global mindset. Thus, as individuals have more MCE, they may also develop a global mindset.

MCE and multicultural ideology. People with *multicultural ideology* or *diversity mindset* (Chen & Eastman, 1997; Ely & Thomas, 2001; van Knippenberg &

Haslam, 2003) hold the view that cultural diversity is good for society and for its individual members, and that such diversity should be shared and accommodated in an equitable way. Berry and Kalin (1995) developed a Multicultural Ideology Scale (α = .79; in Appendix D) with items that assess one's support for having a culturally diverse society. Although the construct of multicultural ideology may be positively related with MCE, it reflects an *attitude* towards multiculturalism and is conceptually distinct from individual's particular experiences of being exposed to or interacting with different cultures.

MCE and interaction diversity. *Interaction diversity* (Denson & Chang, 2009) or interracial interaction (Antonio, 2001) is defined as the frequency of cross-racial interactions one experiences. Defined particularly in an educational context, it is used to describe cross-racial or ethnic interactions in undergraduate life. Interaction diversity has been measured in a college context as a composite of 4 to 5 questions (α = .74 - .79; Antonio, 2001) asking about individual's experiences of dining, studying, dating, socializing, and being roommates with someone of a different racial/ethnic group (Antonio, 2001; Denson & Chang, 2009; see in Appendix E). If defined in the cross-cultural context (as opposed to cross-racial or ethnicity context), interaction diversity becomes similar to multicultural interaction. That is, if "cross-cultural interactions" are defined as interactions between people from different national cultures, they capture multicultural interactions.

Conceptual Validation

In this research, I attempt to validate the new MCE construct in five studies. Cultural intelligence, multicultural ideology, and openness to experience are

conceptually related constructs to MCE; therefore, I include them in the construct validation process.

Cultural intelligence, an individual's capability to adapt effectively to situations characterized by cultural diversity (Earley & Ang, 2003), is a conceptually proximal construct to MCE. It is reasonable to expect that high levels of exposure to and interactions with different cultures lead to increments in one's repertoire of cultural knowledge (cognitive cultural intelligence), behavioral skills (behavioral cultural intelligence), awareness of cross-cultural situations (meta-cognitive cultural intelligence), and adaptive skills (motivational cultural intelligence). In the opposite direction, high levels of cultural intelligence can lead to openness towards different cultures' elements and members, leading to increases in multicultural exposure and interaction. Parallel to these conceptual arguments, Cultural Intelligence Scale (Ang et al., 2007) items such as "I enjoy interacting with people from different cultures," "I am confident that I can socialize with locals in a culture that is unfamiliar to me," or "I know the cultural values and religious beliefs of other cultures" are conceptually proximal to the concepts of being exposed to or interacting with different cultures. For these reasons, I expect cultural intelligence to have the greatest positive correlation with MCE among the three related constructs.

Multicultural ideology is also a construct related to MCE. Having *multicultural ideology* or *diversity mindset* (Chen & Eastman, 1997; Ely & Thomas, 2001; van Knippenberg & Haslam, 2003) refers to an individual's belief that cultural diversity is good for society and for its individual members, and thus should be accommodated. As individuals become exposed to different cultures and interact with people from different cultures, they may develop an understanding of and a positive attitude toward different

cultures, resulting in adopting a multicultural ideology that welcomes multiculturalism. Alternatively, individuals who have multicultural ideology may open themselves to the exposures from and interactions with different cultures, resulting in increased MCE. Thus I argue that multicultural ideology will also have a positive correlation with MCE.

I also expect openness to experience and MCE to be positively related (c.f. Leung & Chiu, 2010). Although some MCEs, such as working with individuals from different cultures, may not be based on individual's choice, individuals obtain some MCEs, such as engaging in multicultural social interactions during leisure time, by their own free will. Individuals who have high levels of openness to experience may open themselves to exposures of different cultures and interactions with people from foreign cultures. Hence some of their MCEs may occur by individual choice. These individuals seek such exposures and interactions, leading to increases in multicultural exposure and interaction. Thus, I argue that MCE and openness to experience will also be positively correlated, although this correlation will be smaller than MCE's correlation with cultural intelligence and multicultural ideology.

Hypothesis 2a: MCE will be positively correlated with cultural intelligence, multicultural ideology, and openness to experience.

Hypothesis 2b: MCE will have the strongest positive correlation with cultural intelligence and the weakest positive correlation with openness to experience, with the correlation between MCE and multicultural ideology being in between.

Finally, I will include an unrelated construct, namely, self-esteem, in the validation procedure. Self-esteem refers to one's appraisal of their own overall self-image (Rubin & Hewstone, 1998). It has been acknowledged that global self-esteem is

not a good predictor of individual behavior or performance in a specific area, particularly because it is an overall evaluation and it does not provide information about one's esteem in a specific area (c.f. Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995; Rubin & Hewstone, 1998). Thus, I expect MCE to have no relationship with global self-esteem.

Hypothesis 2c: MCE will not be correlated with global self-esteem.

In order to provide some evidence of criterion-related validity, I included three additional constructs that previous research found to be related with MCE to the construct validation procedure. In their study of 164 undergraduate students, Narvaez and Hill (2010) examined the relationships of MCE with closed-mindedness, and growth- and fixed-mindsets. The authors found that MCE scores were correlated with decreased closed-mindedness. In addition, higher MCE scores positively predicted growth-mindset, that is, one's belief that individuals can grow and change in skills and abilities (Dweck, 2006). Finally, higher MCE scores negatively predicted fixed-mindset, that is, one's belief that individuals cannot change their intellectual abilities or who they are (Dweck, 2006). Therefore, in order to provide evidence of criterion-related validity for the new MCE construct, I included the growth mindset, fixed mindset, and closed-mindedness constructs in the construct validation. I expect the new MCE construct to exhibit the same relationships with these constructs as found by previous research. Namely, I expect MCE to be positively associated with growth mindset and negatively associated with fixed-mindset and closed-mindedness.

Hypothesis 3a: MCE will be positively related to growth mindset.

Hypothesis 3b: MCE will be negatively related to fixed mindset.

Hypothesis 3c: MCE will be negatively related to closed-mindedness.

Chapter 3

Item Selection

Chapter 2 presented a multifaceted conceptualization of MCE. In this section, I present the process by which I develop the MExA instrument, which corresponds with the multidimensional conceptualization of MCE presented in Chapter 2. I provide detailed information on the initial item pool.

Item Development

I drew from the existing MCE literature and scales to inform construct definition, item writing, and ultimately the scale development that results in content, convergent and discriminant validities. Two current MCE scales, the MES (Leung & Chiu, 2010) and the MEQ (Narvaez & Hill, 2010), provide a foundation for this new MCE instrument. Both the MES and the MEQ offer items about the languages one can speak, the number of different cultures one has experience with, and having friends from different cultures. The MES also offers items with regards to activities such as listening to the music of musicians from different cultures and eating at ethnic restaurants. In addition, the MEQ offers items about corresponding and working with people from different cultures, paying attention to the news about the world beyond the U.S.A., and enjoying media and art from different cultures. As a result, 10 of the main MExA items are revised versions of some MES and MEQ questions. In addition, I reviewed the MCE literature (c.f. Endicott et al., 2003; Leung & Chiu, 2008, 2010; Leung et al., 2008; Narvaez & Hill, 2010) and conducted searches on multicultural exposure and involvement (c.f. Maddux et al., 2010; Maddux & Galinsky, 2009; Park, 1928; Simonton, 1997; Williams & Johnson, 2011), cultural and/or multicultural

competence, cultural knowledge (c.f. Haas, 2006; Savicki, 2008; Tung, 1998), interracial interaction, diversity experience, cross-racial interaction (c.f. Antonio, 2001; Astin, 1993; Crisp & Turner, 2011; Denson & Chang, 2009; Gurin et al., 2002), cultural adaptation and/or adjustment (c.f. Black, Mendenhall, & Oddou, 1991; Kim, 1988), international experience, expatriate adaptation (c.f. Hechanova, Beehr, & Christiansen, 2003; Selmer, 2002; Shaffer, Harrison, & Gilley, 1999; Takeuchi et al., 2005), biculturalism, multiculturalism (c.f. Benet-Martinez, Lee, & Leu, 2006; Hong et al., 2000; Ip et al., 2006; Vivero & Jenkins, 1999), multicultural or diversity ideology (c.f. Berry & Kalin, 1995; Ely & Thomas, 2001; van Knippenberg & Haslam, 2003), multicultural sensitivity (c.f. Dong et al., 2008; Sirin, Brabeck, Satiani, & Rogers-Serin, 2003), global mindset (c.f. Arora et al., 2004; Levy et al., 2007), multicultural education, training, and/or learning (c.f. Brislin & Yoshida, 1994; Landis, Bennett, & Bennett, 2004; Lutterman-Aguilar & Gingerich, 2002; Paige, 1993; Pedersen, 2009), multicultural personality (c.f. Van der Zee & Van Oudenhoven, 2000, 2001), work experience (c.f. Gochenour, 1993; Schmidt, Hunter, Outerbridge, & Goff, 1988; Tesluk & Jacobs, 1998) and cultural intelligence (c.f. Ang et al., 2007; Janssens & Brett, 2006; Ng, Van Dyne, & Ang, 2009) for any definitions, conceptualizations, and measures of MCE, multicultural exposure and interaction. As a result, I developed 24 main MExA items independently using the reviewed literatures (7 of the independently developed items are revised versions of the interaction diversity items; Antonio, 2001; Denson & Chang, 2009; Gurin et al., 2002). This process resulted in the creation of 34 main MExA items. (See Appendix F for the 34 main MExA items and their sources.)

Then, I increased the number of items by separating main items into multiple items. For example, one of the main items "communicating (via Skype, messenger, e-mail, phone, SMS, Facebook, etc.) with people from different cultures" resulted in 4 different items as follows: "Communicating via writing (e.g. emails, text messages, instant messaging) with people from different cultures," "communicating via video with people from different cultures," "talking on the phone with people from different cultures," and "becoming friends on social networking websites with people from different cultures." This resulted in increasing the number of items from 34 to 57. (See Appendix G for the 57-item MExA.) All of the items are concise and written in simple language.

The initial instrument had 28 multicultural exposure items and 24 multicultural interaction items in the item pool to assess the *frequency* of MCEs. All frequency items in MExA use a 6-point Likert scale as follows: 1 = never; 2 = once a year or less frequently; 3 = 2-11 times a year; 4 = 1-3 times a month; 5 = 1-6 days a week; and 6 = every day or multiple times a day. In addition, MExA has 2 questions to assess *breadth* of exposure and interaction by asking the respondents to choose from a drop-down menu the cultures to which they are exposed to (interact with) via presented activities. Participants are also asked how many languages they can speak (in addition to their mother tongue) as an alternative measure of the breadth of multicultural interaction. Moreover, in order to assess the *duration* (i.e. *time length*) of exposure and interaction, MExA has 2 questions as follows: "All of the above activities are examples of exposure to [interactions with] different cultures. Please try to think back and remember: When was the first time you were exposed to [interacted with] different

cultures via these types of activities?" These questions use the following 6-point likert scale: 1 = 0-1 year ago; 2 = 1-2 years ago; 3 = 2-5 years ago; 4 = 5-10 years ago; 5 = 10 years ago or more, and 6 = never; I have NOT been exposed to [interacted with] different cultures via these types of activities.

Item Scaling

Two of the problematic issues related to frequency measurement that have been acknowledged in the literature are the use of vague scale anchors such as *frequently* and *sometimes* which may lead to varying interpretations of the anchors among participants (c.f. Bradburn & Miles, 1979) and the possibility that the response options may affect the responses (c.f. Schwarz, 1991). In order to prevent the problem of varying interpretations of the anchors, I utilize concrete and quantified anchors in this study (e.g. *0-1 year ago* and *5-10 years ago*). To prevent response options from affecting the responses, I employ a scale that covers a wide time period (ranging from *never* to *multiple times a day*).

Chapter 4

Content Validity

Chapter 3 described the development of the MExA and provided detailed information on the items and their scaling. Grounding items on previous MCE instruments, conceptual arguments, and research ensures some degree of content validity (Hinkin, 1998). In addition, in this section, I present two studies (Studies 1a and 1b) conducted to ensure high content validity.

Study 1a: Critical Incident Task

In the first study, I utilized the critical incident technique to determine if the MExA represented all facets of the MCE construct. The critical incident technique is a procedure for gathering certain important facts concerning some defined situations (Flanagan, 1954). A critical incident study was conducted to examine what constituted individuals' MCEs, what activities were considered as contributing to MCE, how people conceptualized MCE, and what they thought could be added to the current MExA. The information and the questions provided by the participants in the critical incident task were used to modify the current instrument by adding or eliminating items.

Methods

Participants and Procedure

Twenty-one students from Baruch College completed an hour-long survey about MCEs to fulfill a research requirement for a Psychology or Management class. Participants signed a consent form before they started the study.

There were five parts to the survey, which is presented in Appendix H. In the first part, participants had 10 minutes to read the instructions, report their dominant

culture, and write down what they think MCE is and what constitutes their MCE. In the second part, participants were given 15 minutes to report what happened in their last three MCEs, and when and where they happened. Then the participants were given 25 minutes to fill out the initial MExA (i.e. the multicultural exposure subscale in the third part, and multicultural interaction subscale in the fourth part). Finally, in the fifth part, the participants had 5 minutes to write down 5 more questions that ask about other MCEs that they could think of, and report any types of MCEs that they believe were missing in this questionnaire. The last page thanked the participants.

Analysis

Critical incident task. There were six groups of responses: (1) responses to the question "what do you think multicultural experience is?", (2) responses to the question "what makes up and what is included in your multicultural experiences?", (3) MCE examples provided by the participants, (4) additional questions written by the participants, (5) MCEs that participants thought were missing from the questionnaire, and (6) participants' MExA responses. I examined each of the answers in the first five groups, compared them with the existing MExA items, and checked whether they included any MCE that was missing in the MExA.

Scoring of MExA. After the participants' responses to the critical incident task questions were examined, exploratory analyses were conducted on the MExA responses. The following scores were computed: (1) frequency of exposures, (2) breadth of exposures, (3) duration of exposures, (4) frequency of interactions, (5) breadth of interactions, (6) duration of interactions, (7) frequency of MCE, (8) breadth of MCE, (9) duration of MCE, (10) overall multicultural exposure, (11) overall multicultural

interaction, and (12) overall MCE. The frequency of exposures (score #1) and interactions (score #4) were computed by taking the average of the frequency items. Breadth [duration] of exposures and interactions (score #2, #3, #5, #6) were determined based on the responses to the single breadth [duration] questions. The frequency [breadth / duration] of MCE (score #7, #8, #9) was the average of the frequency [breadth / duration] scores for exposures and interactions. Then all of these scores (#1-#9) were standardized in order to compute the overall multicultural exposure, multicultural interaction, and MCE scores. A participant's multicultural exposure [interaction] level was the average of the standardized frequency, breadth, and duration scores for exposures [interactions]. (That is, score #10 = average of scores #1-3; and score #11 = average of scores #4-6). Lastly, the overall level of MCE was the average of the standardized scores of frequency, breadth, and duration of MCE (i.e. score #12 = average of scores #7-9). Once these scores were computed, the correlations among them were examined.

Results

Participants listed the following as their primary cultures: Chinese (n = 5), American (n = 3), Korean (n = 3), Russian (n = 2), Haitian (n = 1), Pakistani (n = 1), Persian (n = 1), Polish (n = 1), Ukrainian (n = 1), and Vietnamese (n = 1). Two people did not list their culture on the basis of country, and reported their primary cultures as *Asian* and *Jewish*. However, their responses were not eliminated, because the purpose of this particular study was not to measure their MCE via MExA (which uses a definition of culture at the national level); rather the purpose was to get participants' feedback about the MCE construct and the MExA items.

MCE Definitions

Table 2 presents the responses provided by the participants when they were asked to define MCE. Some participants provided general descriptions of MCE (e.g. "multicultural experience is when you experience many different cultures," "experiencing many cultures and being in a diverse area or situation where you … witness cultures other than your own" and "being in contact with people from cultures other than your own"); thus, they did not specify any activities or relationships that could be added to MExA. Some responses consisted of either some special case of MCE (e.g. traveling to a different country or being a bicultural individual) or definitions of constructs that are similar to but distinct from MCE (e.g. multicultural learning and acculturation). Lastly, some responses included MCE activities and/or examples, all of which substantially overlapped with one or more existing MExA items. For example, the response "multicultural experience is when people from different nationalities get together in a formal gathering" overlapped with the MExA item "attending international social events."

MCE Components

Table 3 presents the responses participants gave when they were asked what constituted their MCEs. Some responses included general phrases or statements about MCE (e.g. "I experience three distinct cultures"); thus, they did not present any specific activity or relationship that could be added to the MExA. Some responses included definitions for either special cases of MCE (e.g. "I immigrated to another country when I was 17") or similar bur distinct constructs (e.g. "learning about [different cultures]"). Some participants specified MCEs, all of which overlapped with existing MExA items.

For example, the response "I have a lot of friends who are from other cultures" was covered by the MExA item "becoming friends with people from different cultures," and the response "the food you eat" was covered by the MExA item "eating at restaurants that serve foreign cuisines."

MCE Examples

Participants were also asked to report their most recent three MCEs, yielding 59 examples presented in Table 4. Some of the responses included examples of different constructs. For example, the response "each country has their own culture so the way people react or respond to a particular issue or behavior is different" was about cultural differences rather than MCE. All MCE examples provided by the participants overlapped with existing MExA items. For example, the example "[I] met a new friend in Baruch who is Indian" matched with the MExA item "becoming friends with people from different cultures," the response "[I] listened to a Russian demonstrating how to make a Russian [dish]" was matched with the item "watching cooking shows about foreign cuisines," and the response "[I] have to speak English while I [am] talking to others" matched with the MExA item "speaking a foreign language with people from that foreign culture."

Additional Questions Written by the Participants

When they were asked to write additional survey questions, the participants provided a total of 81 questions/items that were examined for possible inclusion in the MExA. Table 5 lists these questions.

Some questions written by the participants could not be used to measure this construct. For example: "Do you think you can avoid MCE in your life?", "Do you

feel uncomfortable talking to people from different cultures?", "How does diversity affect your life?" and "How would [you assess] the convenience of having [MCE] nowadays vs. the old days?"

Some questions substantially overlapped with current items of MExA. For example, the question "How often do you relate to people of different culture from your own?" overlapped with several multicultural interaction items (e.g. going out with, dining with, working with, and becoming friends with people from different cultures). "Have you had feelings for anyone from a different culture?" was similar to the MExA item about "dating people from different cultures" and the question "Have you ever attended an event of another culture?" was covered by several MExA items about attending or participating in festivals, parades, and celebrations of different cultures.

Some questions written by the participants attempted to measure special cases of MCE. For example, "In which countries did you live other than the U.S.?" assessed the experience of *living abroad* and "Were you born in a country other than the one you live in now?" assessed *immigration* experience.

Finally, seven questions were about five activities that were considered for inclusion in MExA. The first question was "How frequently do you play sports from another culture?" This item was not included in the instrument, because it did not define culture at the country level. Although some countries have different sports than others, many countries share sportive games. The second question "How often do you visit the house of someone from a different culture?" was eliminated, because this item could not distinguish multicultural exposures and interactions. In addition, the house of an individual from another culture may not include cultural cues (ethnic decoration,

etc.) to enable multicultural exposure. Lastly, the exposure and socialization covered by this item were already captured by multiple MExA items such as seeing foreign people around you and talking to people from different cultures.

Another question written by a participant was "How often do you use products from another culture?" Also three questions written by the participants were about "wearing clothing of different cultures." These questions were not included in the instrument, because in today's global world, it is difficult to identify the cultural origin or owner of some products or clothing items. For example, a popular home game console product, Wii, is a product by a Japanese multinational consumer electronics company that also has their headquarters in the U.S. While some U.S. individuals identify Wii as a product of another culture, some other U.S. individuals may not. Similarly a U.S. individual who uses a hand cream by the French brand L'Occitane en Provence, or wears a dress by the Italian brand Dolce & Gabbana, or uses a pashmina may or may not perceive it as a *product of another culture*. Moreover, using some of these products by different countries does not necessarily provide individuals with experience about their cultures. Consequently, these questions were eliminated due to the difficulty of answering them.

Finally, one question written by a participant was about "traveling with individuals from different cultures." However, the exposures and the interactions captured by this item were already covered by several existing MExA items such as seeing foreign people around you, talking to, becoming friends, socializing, and sharing feelings with individuals from different cultures.

Experiences Missing in the Current MExA

When asked to report MCEs that they think are missing in the current questionnaire, 8 participants provided the responses presented in Table 6. Some of the responses did not include any specific activity or relationship that could be used to measure the MCE construct. For example, one participant wrote "I think globalization has something to do with multiculture. If you mention or ask some questions about globalization, I think you could find some connections and correlation" and another individual wrote "how [do] people use their multicultural experience?". Some responses included experiences that were captured by the existing MExA items. For example, a participant wrote "marriage," which overlapped with the item "dating with people from different cultures" along with some other interaction items, and another person responded "different food from multicultural experience or habits," which overlapped with the item "eating at restaurants that serve foreign cuisines." Finally, one individual mentioned that "wearing clothes from a different culture" could be a MCE. This item was considered for inclusion in the MExA, but later was not used for the reasons previously discussed.

Elimination of Items

A decision rule about which items to eliminate in the critical incident task was determined prior to running this study. When more than 10% of the participants (i.e. more than 2 people) verbally reported during the study that they *did not understand what this item meant* the item would be dropped. However, none of the participants reported not understanding an item; thus no item was eliminated from the MExA in this study.

Exploratory Analyses

Frequency of multicultural exposure. On average, the participants were exposed to different cultures multiple times a year (M = 3.5, SD = 1.0 for frequency of multicultural exposures). The most frequent exposure items were "hearing people around you talking in foreign languages (other than your primary language)" (*M* = 5.8, *SD* = .5), and "seeing foreign people around you (without talking to them or interacting with them)" (*M* = 5.7, *SD* = 1.2), which people experienced almost every day a week, and "listening to music of foreign cultures" (*M* = 4.7, *SD* = 1.4), which people experienced almost once every week. The least frequent exposure item was "watching plays/opera about foreign cultures" (*M* = 2.1, *SD* = 1.2), which was experienced once a year or less frequently.

Duration of multicultural exposure. Over half (52.4%) of the participants reported being first exposed to different cultures 10 years ago or more. Nineteen percent reported this exposure being 5-10 years ago, 14.3% reported 2-5 years ago, 9.5% reported 1-2 years ago, and 4.8% reported less than 1 year ago. None of the participants responded that they have never been exposed to different cultures.

Breadth of multicultural exposure. Participants reported being exposed to an average of 4.9 (*SD* = 2.5) different cultures. The participants reported being exposed to 31 different cultures, such as American, Belgian, Chinese, French, German, Japanese, Indian, Israeli, Mexican, Russian, Spanish, Swiss, and Taiwanese.

Frequency of multicultural interaction. On average, the participants interacted with different cultures multiple times a year (M = 3.5, SD = .8 for frequency of multicultural interaction). The most frequent interaction items were "talking to

people from different cultures" (M = 5.8, SD = .5), which people experienced almost every day, and "socializing with people from different cultures" (M = 4.9, SD = 1.0) and "talking to foreigners" (M = 4.7, SD = 1.2), which were experienced almost every week. The least frequent interaction item was "being roommates with people from different cultures" (M = 1.8, SD = 1.5), which occurred less than once a year.

Duration of multicultural interaction. When participants were asked about the first time they interacted with different cultures, one third of them (33.3%) responded 10 years ago or more, 19% responded 5-10 years ago, 23.8% responded 2-5 years ago, 19.0% reported 1-2 years ago, and 4.8% reported 0-1 year ago. None of the participants reported that they never interacted with different cultures.

Breadth of multicultural interaction. Participants, on average, interacted with people from 4.2 (SD = 2.7) different cultures. In total, they reported interacting with people from 31 different cultures, such as American, Bosnian, Brazilian, Filipino, Indian, Iraqi, Jamaican, Norwegian, Korean, Polish, Spanish, and Turkish cultures. On average, participants could speak 2 (SD = .7) languages in addition to their mother tongue.

Correlations among frequency, duration, breadth, and overall scores. Table 7 presents the correlations among the frequency, duration, breadth, and overall scores of multicultural exposures and interactions. Due to the small sample size in this study, these correlations should be examined with care. However, there were significant correlations between the frequency of exposures and interactions (r = .63, p < .01), and between the duration of exposures and interactions (r = .67, p < .01). Breadth of exposures and interactions were not significantly correlated (r = .44, p

= .069). There were no significant correlations between the (i) frequency and breadth of MCE (r = .12, p = .640), (ii) breadth and duration of MCE (r = -.03, p = .895), and (iii) frequency and duration of MCE (r = .21, p = .355). One's level of multicultural exposure was significantly correlated with the level of multicultural interaction (r = .52, p < .05). The number of foreign languages spoken was not correlated with any exposure, interaction, or MCE scores.

Summary

The participants reported a variety of MCE activities and examples with which MExA items could be compared. The existing MExA items already captured all except five types of experiences reported by the participants. For the reasons discussed in the results section, those five experiences were not found suitable to be included in the MExA. None of the existing MExA items were eliminated. In sum, the results of the critical incident study showed that the MExA questions reasonably represented different facets of the MCE construct.

It was found that the frequency of an individual's exposures to and interactions with different cultures were positively associated, as with the duration of such exposures and interactions. However, overall frequency, duration, and breadth of MCE were not significantly correlated with each other. Although the small sample size in this study limits the interpretation of this finding, the nonsignificant correlations among these scores may be supporting the fact that each of these separate scores are independently useful. In addition, the significant correlations between the frequency and duration scores of exposures and interactions were not too high to signal

redundancy in these measurements. These two high correlations may hint at a positive relationship between exposure and interaction dimensions.

The item assessing '*the number of cultures interacted'* had a larger variance than the item asking about '*the number of foreign languages spoken*.' This finding fit with the plausible explanation that the former item covered the latter item. That is, if an individual could speak a foreign language (e.g. French), then that individual would count that (i.e. French) culture as one of the cultures that s/he interacted with. Thus, the item about one's foreign languages may be redundant and could potentially be eliminated from the multicultural interaction subscale. However, this item was kept in the instrument for further examination purposes in Study 2.

Study 1b: Content Categorization Task

The results of the critical incident technique provided additional evidence that the MExA scale sampled a fair representation of possible experiences the MCE construct encompasses. However, an additional categorization procedure was conducted to provide further evidence for content validity.

Methods

Participants and Procedure

Forty-four students from Baruch College participated in a 30-minute categorization task about MCEs to fulfill a research requirement for a Psychology or Management class. First, they signed consent forms and their questions were answered. Following MacKenzie, Podsakoff and Fetter (1991), they were provided with the 28 multicultural exposure and 24 multicultural interaction frequency items in a randomized order along with definitions of multicultural exposure and interaction. Then they were asked to classify each item into one of three categories: "multicultural exposure," "multicultural interaction," or "other."

Decision Rule

The acceptable agreement index (i.e. the expected percentage of respondents who correctly classified an item) was a minimum of 75%. Thus, any item categorized incorrectly by more than 25% of the participants would be dropped from the item pool. The retained items would represent a reasonable measure of the construct (Hinkin, 1998).

Results

One participant's responses were excluded from the analyses, because this participant did not classify the items into the provided categories. Table 8 presents the categorization frequencies and agreement rates achieved in this categorization task. The average agreement rate (i.e. average percentage of respondents who correctly classified an item) was 86% (*SD* = .10) with rates ranging between 49% and 100%. Two of the multicultural exposure items obtained agreement rates lower than the cut-off point of 75%: The item "eating at restaurants that serve foreign cuisines" had an agreement rate of 60% and the item "learning/studying a foreign language" had an agreement rate of 49%. Therefore they were eliminated from the MExA, decreasing the number of multicultural exposure frequency items from 28 to 26. Three of the multicultural interaction items achieved agreement rates lower than 75%: The item "participating in festivals/parades of different cultures" and the item "participating in celebrations of different cultures" had agreement rates of 70%, and the item "attending festivals/parades of different cultures" had a rate of 60%. Elimination of these items decreased the number of multicultural interaction frequency items from 24 to 21. The resulting MExA had 47 frequency items.

Summary

The results of Studies 1a and 1b showed that MExA had good content validity. Grounding all items on a conceptual definition and the MCE literature, and the content validity procedures (i.e. critical incident task in Study 1a and content categorization task in Study 1b) provided some conceptual and empirical support for content validity. The final form of MExA obtained after the content validity studies consisted of 47

frequency items, 2 duration and 2 breadth questions, and 1 question about foreign languages spoken. This version of MExA was used in the exploratory factor analysis procedure (Study 2) presented in Chapter 5.

Chapter 5

Exploratory Factor Analysis

Chapters 3 and 4 presented the scale development and two content validity studies (Studies 1a and 1b), in which I conducted item refinement and reduction and ensured high content validity. This section presents an exploratory factor analysis procedure (Study 2) in which I revised the item pool once more and sought support for the 2-factor structure of the construct along with acceptable internal consistency.

Two-Factor Structure

In Study 2, an exploratory factor analysis was conducted and Hypothesis 1 was tested to ensure that MExA has two distinct factors and that items load highly on their target factors and group in a way to support multicultural exposure - interaction groupings.

Sample Size

It has been argued that in most cases a sample size of 150 observations should be sufficient to obtain an accurate solution in exploratory factor analysis as long as item intercorrelations are reasonably strong (Guadagnoli & Velicer, 1988; Hinkin, 1998). However, it has also been acknowledged that factor analyses are susceptible to sample size effects; and using relatively large sample sizes assists in attaining smaller estimates of the standard errors to ensure that factor loadings are correct reflections of the true population values (Hinkin, 1998). Therefore, in an attempt to improve the accuracy of factor loadings, an item-to-response ratio of 1:6, which is the higher end of the 1:3 – 1:6 range recommended by Cattell (1978), was followed in this study. Having 47 items necessitated a minimum of 282 participants in the exploratory factor analysis study.

Use of Student Sample

Following previous MCE research (c.f. Leung & Chiu, 2008; Narvaez & Hill, 2010) that used undergraduate student samples, a student sample was used in this study. Discussions in the organizational research literature also provide support for the use of student samples (c.f. Gordon, Slade, & Schmitt, 1987; Greenberg, 1987).

Methods

Participants and Procedure

Three hundred eighteen students (55.3% female, 44.3% male, .3% other) from Baruch College completed an hour-long survey on personal experiences and preferences to fulfill a research requirement for a Psychology or Management class.[4] The survey was completed online using Qualtrics survey software.

The survey included MExA items (i.e. 47 frequency, 2 duration, 2 breadth items, and 1 question about the number of foreign languages spoken). The multicultural exposure subscale included 26 frequency, 1 duration, and 1 breadth questions about exposures, and the multicultural interaction subscale consisted of 21 frequency, 1 duration, 1 breadth items about interactions and 1 question about the foreign languages spoken. Multicultural exposure and interaction items were presented in two separate blocks within which the items were randomized. Exposure and interaction blocks were presented in a randomized order as well.

At the end of the survey, participants reported their age (via an open-ended question), gender (by choosing male, female, or other option) and citizenship (via a dropdown list of countries).

Analysis

Once the data were collected, exploratory factor analysis was conducted to further refine the 47-item frequency scale. The principal axis method was used, because the principal components method of analysis mixes common, specific, and random error variances, and a common factoring method is recommended (Ford, MacCallum, & Tait, 1986; Rummel, 1970). Because it was highly probable that multicultural exposure and interaction factors were correlated, an oblique solution was appropriate (Basto & Pereira, 2012; Costello & Osborne, 2005). Thus, direct oblimin rotation was applied.

Two breadth and two duration questions (1 item for each MCE type) and the question about the number of foreign languages spoken were not included in the factor analysis for two reasons. First, the breadth questions and the question about the foreign languages spoken were open-ended items; and the duration items used a different scale than the frequency questions. Therefore, including them in the factor analysis would necessitate standardization of the responses. However, utilization of standardized variables for factor analysis has undesirable properties and unstandardized (vs. standardized) analyses provide a more accurate portrayal of factor loadings (Woelfel, Woelfel, & Woelfel, 1980). In their study, Woelfel et al. (1980) factor analyzed a well-known data set (whose correct underlying factor structure is known) by using both standardized and unstandardized data matrices, and exhibited how standardization led to a distortion in the factor loadings and resulted in an incorrect factor structure. Second, each MCE dimension (i.e. multicultural exposure and interaction) had a single question to assess its breadth and duration. Therefore, these single items could not be

eliminated from the instrument. Consequently, only the frequency items were entered in the exploratory factor analysis. However, breadth and duration items were included in the internal consistency analyses.

Once a clear factor structure was obtained, internal consistency of (1) the whole MExA scale, and (2) the frequency, duration, and breadth subscales were investigated. To compute the reliability of the whole instrument, all of the items retained in the MExA were standardized, because frequency, breadth, and duration subscales used different scales. The standardized items were used to calulate the internal reliability of the MExA scale. The reliability figures for each of the subscales were computed by using the unstandardized items.

Next, some exploratory analyses were conducted using the participants' responses to the retained MExA items. The following scores were computed in the same way as in Study 1a: frequency, breadth, and duration scores for multicultural exposure and interaction factors; frequency, breadth, and duration of MCE; and overall MCE. The correlations among these scores, number of foreign languages spoken, and participant age were examined. Then, Pearson Chi-Square tests were conducted to see whether gender differences existed in the frequency and duration items. Finally, Multivariate Analysis of Variance (MANOVA) tests were conducted to check for any gender differences in the overall frequency and breadth scores, and in the number of foreign languages spoken.

Results

Participants' ages ranged between 18 and 49 with a mean of 21.3 years (*SD* = 3.7). They were citizens of 41 different countries, the most frequent of which were the

United States (60.1%), China (13.5%), Republic of Korea, Russian Federation (2.8% each), Hong Kong (2.5%), Bangladesh, Colombia, and Dominican Republic (1.6% each). The rest of the participants were from countries such as Albania, Ghana, Israel, Japan, Malaysia, Mexico, Poland, Saint Vincent and the Grenadines, Sweden, Uzbekistan, and Vietnam. On average, the participants had a MCE almost once a month (M = 3.9, SD = .9 for frequency of MCE); had MCE with 9 different cultures (M = 9.2, SD = 10.0 for breadth of MCE); and had their first MCE about 5 years ago (M = 4.8, SD = 1.2 for duration of MCE).[5]

Exploratory Factor Analysis

Table 9 presents the factor loadings of the 47 MExA items using direct oblimin rotation, along with item means and standard deviations. An examination of the factor loadings and the primary factor of each item gave the first impression that there were two main factors (out of the 8 factors extracted by the analysis; see Table 9). Fifteen of the 26 multicultural exposure items loaded on Factor 1, and 17 of the 21 multicultural interaction items loaded on Factor 2. None of the exposure items loaded on the interaction factor (Factor 2) and none of the interaction items loaded on the exposure factor (Factor 1).

First, following Ford et al.'s (1986) recommendation, all items with less than .400 loading were eliminated. The items with low loadings were exposure items "reading magazines of foreign cultures" (loadings ranging between -.313 and .348), "seeing architecture of foreign cultures" (loadings ranging between -.112 and .328), and interaction item "attending international social events" (loadings ranging between -.046 and .327).

Then the items that loaded on the wrong factor (i.e. Factors 3-8) were dropped. That is, the multicultural exposure [interaction] items that did not load on the corresponding multicultural exposure [interaction] factor along with the other items in its category were eliminated. As a result of this procedure, the following 10 exposure and 3 interaction items were eliminated: Exposure items "hearing people around you talking in foreign languages (other than your primary language)" and "seeing foreign people around you (without talking to them or interacting with them)" loaded on Factor 3 (with loadings of .666 and .732, respectively). Exposure items "reading books about foreign cultures," "seeing art of foreign cultures," "watching plays/opera about foreign cultures," "seeing sculpture of foreign cultures," "seeing paintings of foreign cultures," and "seeing paintings by foreign cultures" loaded on Factor 4 (with loadings of .433, .742, .486, .781, .882, and 1.077, respectively). Factor 4 seemed to capture exposures to foreign art, which was too narrow and specific a topic to be covered by a single factor; therefore, these items were eliminated. Exposure item "following news about foreign countries" loaded on Factor 6 (loading = .587), while exposure item "reading newspapers of foreign countries" and interaction item "speaking a foreign language with people from that foreign culture" loaded on Factor 5 (loadings = -.418 and -.444, respectively); and thus these three items were also eliminated. Finally, interaction items "dating people from different cultures" and "being roommates with people from different cultures" loaded on Factor 7 (loadings = .444 and .554, respectively), and thus were eliminated. Based on the examination of the contents of the items loading on each factor, it was concluded that none of the Factors 3-8 presented a consistent item grouping that captured an essential topic/activity to be

included in the MCE measurement. Thus, only the items loading on the Factors 1 and 2 were retained in the analysis, and the factors were labeled "multicultural exposure" and "multicultural interaction" respectively.

In the current MExA, some items were written very similarly to each other so that the version that has the highest primary factor loading (with low cross-loadings) could be retained during the exploratory factor analysis. When multiple similar items had a loading of .400, the one with the highest loading was kept and the rest of them were eliminated. This procedure resulted in the retention of 9 and elimination of 18 items presented in Table 10.

At this stage, the exploratory factor analysis was re-run with the remaining 7 multicultural exposure and 6 multicultural interaction items. This analysis identified the same two main factors, i.e. multicultural exposure and interaction factors, with all 7 exposure items loading on the exposure and all 6 interaction items loading on the interaction factor (See Table 11).

Then the scree test of percentage of variance explained was utilized. Both the scree plot, presented in Figure 1, and the eigenvalues provided support for the two-factor model. However, the total variance explained by the current items was 53.0%. Following Hinkin's (1998) recommendation, the minimum acceptable target of the total variance explained was 60% in this study. In order to achieve this total variance that is explained by the scale, one item with the lowest loading was eliminated from each dimension (one item at a time), and the analysis was re-run until a clear factor structure that explained a high percentage of total item variance was obtained (see Ford et al., 1986; Hinkin, 1998). This procedure resulted in elimination of 2 exposure items (i.e.

"shopping at stores that sell foreign ethnic products" and "doing research about foreign cultures or countries") and 2 interaction items (i.e. "working with people from different cultures" and "dining with people from different cultures"). As these items were eliminated, the total variance that is explained increased from 53.0% to 54.8%, 56.2%, 58.7% and finally 60.2%. Table 12 shows the total variance explained by the final MExA, while Table 13 lists the factor loadings of the retained items. Figure 2 presents the scree plot from the final exploratory factor analysis. Also, the final MExA scale, which included the retained items and was used in the confirmatory factor analysis, is presented in Table 14.

Internal Consistency

The final frequency scale had a clear factor structure with 2 factors, with all items loading highly on the correct factor, and an acceptable percentage of total variance explained. Once this factor structure was achieved, the internal consistency of the scale was checked. Cronbach's alpha was .80 for the overall frequency scale, .78 for the multicultural exposure dimension, and .84 for the multicultural interaction dimension, all above .70 as they were expected to be (Nunnally, 1976).

Table 15 shows the item-total statistics for the frequency items in the final MExA. As expected, the item-to-total correlations were high (i.e. all above .40). In addition, item-to-total statistics revealed that the internal consistency of the scale would decrease if any of the retained items were deleted.

Although they were not included in the factor analysis, the internal consistencies of the breadth and duration subscales were also examined. The overall duration subscale had a Cronbach's alpha of .81, and the overall breadth subscale had

an alpha of .68. Finally, all the items retained in the instrument were standardized, and reliability for the whole MExA instrument was computed as .76. Table 16 presents the item-to-total statistics for the full measure. All item-to-total correlations were above .30, except for three breadth and duration items. In addition, statistics showed that Cronbach's alpha would increase if the multicultural exposure breadth and duration questions (two in total) were deleted. Because there were only single items for measuring the breadth and duration of exposures, such deletion was not possible. However, the highest increase in the alpha as a result of eliminating an item was .004 points. Therefore, keeping those two items had a negligible cost to the scale alpha.

Exploratory Analyses

Exploratory analyses were conducted using the participants' responses to the final five multicultural exposure and four multicultural interaction items.

Frequency of multicultural exposure. On average, the participants were exposed to different cultures multiple times a year (M = 3.4, SD = 1.0 for frequency of multicultural exposure). The most frequent multicultural exposure activity was listening to music of foreign cultures (M = 4.1, SD = 1.5), which was experienced every month. Participants watched movies that took place in different cultures almost every month (M = 3.9, SD = 1.2), and watched foreign TV channels multiple times a year (M = 3.2, SD = 1.7). They watched different cultures' celebrations on TV and read books about foreign people about twice a year (respectively, M = 3.0, SD = 1.3; M = 3.0, SD = 1.4).

Duration of multicultural exposure. Forty-four percent of the participants reported being first exposed to different cultures 10 years ago or more. Twenty percent

reported this exposure being 5-10 years ago, 21.2% reported 2-5 years ago, 8.8% reported 0-1 year ago, and 4.1% reorted 1-2 years ago. One percent (4 people) reported that they had never been exposed to different cultures via the presented exposure activities.

Breadth of multicultural exposure. In total, participants reported being exposed to 212 different cultures, the most frequent of which were those of the United States (49.1%), China (45.6%), Japan (30.8%), Mexico (26.7%), France, Italy (26.4%), India (24.8%), Hong Kong (24.5%) United Kingdom (24.5%), Dominican Republic (23.2%), Puerto Rico (21.1%), Israel (20.8%), Germany (19.8%), Brazil (19.5%) and Democratic People's Republic of Korea (18.2%). Eight cases were coded as outliers, as they were greater than three standard devations from the mean (Cohen, Cohen, West, & Aiken, 2003; McNamara, Aime, & Vaaler, 2005; c.f. Messersmith, Guthrie, Ji, & Lee, 2011; Zhang, Si, & Zhu, 2013). Following previous research (c.f. Chatterjee & Wiseman, 1983; Dass & Shropshire, 2012; Kulich, Trojanowski, Ryan, Haslam, & Renneboog, 2011), these responses were excluded from this particular analysis. Excluding the outliers, participants were exposed to an average of 9.8 different cultures (SD = 13.3; range: 0 – 65).[6]

Frequency of multicultural interaction. On average, the participants interacted with different cultures 1 to 3 times a month (M = 4.3, SD = 1.2 for frequency of multicultural interactions). The most frequent multicultural interaction activities were talking to (M = 4.8, SD = 1.3), socializing with (M = 4.5, SD = 1.3), and communicating via writing with people from different cultures (M = 4.3, SD = 1.5),

which occurred 1 to 3 times a month. The participants shared feelings with people from different cultures multiple times a year (M = 3.7, SD = 1.5).

Duration of multicultural interaction. When participants were asked about the first time they interacted with different cultures, 40.3% responded 10 years ago or more, 23.0% responded 5-10 years ago, 21.7% responded 2-5 years ago, 6.9% reported 0-1 year ago, and 6.6% reported 1-2 years ago. Less than one percent reported that they had never interacted with people from different cultures via the presented interaction activities.

Breadth of multicultural interaction. In total, participants reported interacting with people from 187 different countries, the most frequent of which were China (52.2%), United States (47.2%), Mexico (31.7%), Dominican Republic (27.4%), Hong Kong, Italy, Puerto Rico (27.0% each), Colombia, Japan (21.1% each), Democratic People's Republic of Korea (20.1%), Brazil (19.8%), Philippines (19.5%), Israel (18.9%), France (18.6%), United Kingdom (18.2%), Germany, and Russian Federation (17.9% each). In addition to their mother tongue, participants spoke 1.6 foreign languages on average (SD = 1.0). Excluding 6 outlier cases, on average participants reported interacting with people from 9.4 different cultures (SD = 10.6; range: 0 – 51).[7]

Relationships among exposure and interaction scores and demographic variables.

Correlations between multicultural exposure and interaction. Table 17 presents the correlations among the multicultural exposure and interaction scores, and their correlations with age and the number of foreign languages spoken. The

correlations between the multicultural exposure and interaction scores were significant for all three MCE dimensions. The correlation between the frequency of exposures and interactions was .30 ($p < .01$); the correlation between the duration of exposures and interactions was .68 ($p < .01$); and the correlation between the breadth of exposures and interactions was .52 ($p < .01$). The correlation between overall levels of multicultural exposure and interaction was .59 ($p < .01$). Thus, there was a positive relationship between multicultural exposure and interaction scores.

Correlations among multicultural exposure scores. The only significant correlation among the three multicultural exposure scores (frequency, duration, and breadth dimensions) was the correlation between the duration and breadth of exposures ($r = .23$, $p < .01$). That is, the longer an individual was exposed to different cultures, the more cultures s/he was exposed to.

Correlations among multicultural interaction scores. All of the correlations among the frequency, duration, and breadth scores of multicultural interaction were significant: The correlation between the frequency and duration of interactions was .22 ($p < .01$); the correlation between the frequency and breadth of interactions was .35 ($p < .01$); and the correlation between the duration and breadth of interactions was .21 ($p < .01$). In other words, there were positive relationships among (i) the frequency that an individual interacted with different cultures, (ii) the time length that an individual had interacted with different cultures, and (iii) the number of cultures interacted with.

Correlations with the number of foreign languages spoken. Number of foreign languages spoken had a significant positive correlation with the frequency of exposures ($r = .19$, $p < .01$), and significant negative correlations with breadth of

exposures (r = -.15, p < .05), breadth of interactions (r = -.16, p < .05), and the overall level of multicultural interaction (r = -.15, p < .05). So, the more foreign languages one spoke, the more frequent one's exposures to different cultures. In addition, the more foreign languages one spoke, the less cultures the person interacted with.

Correlations with age. Age was negatively correlated with the frequency of multicultural interaction (r = -.12, p < .05), and positively correlated with the duration of multicultural interaction (r = .12, p < .05).

Gender differences. MANOVA tests were conducted to investigate any gender differences in the frequency scores, breadth scores, and number of foreign languages spoken. Table 18 presents the findings. Results showed that there were significant gender differences in the frequency of multicultural interactions (F = 6.90, p < .01) and overall MCE (F = 8.13, p < .01). Examination of the group means revealed that females interacted with different cultures more frequently than men (M = 4.5, SD = 1.1 for females; M = 4.1, SD = 1.2 for males), and that females had MCEs more frequently than men (M = 4.0, SD = .9 for females; M = 3.7, SD = .9 for males).

Results revealed no gender differences in the breadth of exposures (F = .81, p = .060) and interactions (F = .455, p = .501). That is, there were no significant differences in the numbers of cultures males and females were exposed to and interacted with. Also, there was no significant difference between the numbers of foreign languages spoken by males and females (F = .962, p = .383).

As a follow-up examination, gender differences were examined for each of the multicultural exposure and interaction items via chi-square tests presented in Table 19.

Results showed that females watched foreign TV channels more frequently than males did ($\chi^2 = 11.616$, $df = 5$, $p < .01$). In addition, females socialized ($\chi^2 = 16.458$, $df = 5$, $p < .01$) and communicated via writing ($\chi^2 = 12.282$, $df = 5$, $p < .05$) with people from different cultures significantly more frequently.

Finally, chi-square tests were conducted to check for gender differences in the duration scores of exposures and interactions. Results (presented in Table 20) showed that there were no gender differences in the duration of multicultural exposures ($\chi^2 = 11.001$, $df = 5$, $p = .051$) and interactions ($\chi^2 = 4.794$, $df = 5$, $p = .442$). In other words, there were no significant differences between how long the males and females experienced multicultural exposures or interactions.

Summary

Exploratory factor analyses conducted in Study 2 showed that MCE had two distinct factors, multicultural exposure and interaction. In addition, multicultural exposure and interaction items loaded highly on their target factors, and grouped in a way to support the distinct exposure and interaction dimensions. These results provided support for Hypothesis 1, which stated that this MCE construct consisted of two factors, multicultural exposure and multicultural interaction. In addition, both overall frequency scale and its exposure and interaction dimensions had good internal consistency.

Additional reliability analyses conducted on the breadth and duration subscales showed that although the breadth subscale had an alpha that was lower than desired, the duration subscale and the whole MExA instrument had good reliability figures.

Exploratory analyses suggested that a positive relationship existed between one's multicultural exposure and interaction, and that some age and gender differences existed in MCE. Older (vs. younger) individuals interacted with people from different cultures less frequently; and older (vs. younger) individuals have interacted with people from different cultures for a longer period of time. Moreover, compared to males, females had MCEs and interacted with different cultures significantly more *frequently*.

Parallel to the finding in Study 1a, the item assessing the number of cultures interacted with had a larger variance than the question assessing the number of foreign languages spoken. This consistent finding signaled that the cultures represented by the foreign languages spoken were already included in the number of cultures interacted with. Therefore, the item asking about the languages spoken was redundant. Consequently, this item was eliminated from the MExA scale; however, was kept in the next studies for exploratory testing purposes.

The final MExA had 13 items: 9 measuring the frequency, 2 measuring the duration, and 2 measuring the breadth of MCE.

Chapter 6

Confirmatory Factor Analysis

In Studies 1a, 1b, and 2, it was established that the MCE activities presented in MExA have good content validity, and that MExA has a two-factor structure, and acceptable reliability. However, items that load clearly in an exploratory factor analysis may demonstrate a lack of fit in a multiple-indicator measurement model due to the lack of external consistency (Gerbing & Anderson, 1988). Structural equation modeling is a technique that allows the researcher to assess the quality of the factor structure by statistically testing the significance of the overall model and examining the goodness of the fit of the model. Thus, in Study 3, a confirmatory factor analysis using structural equation modeling was conducted to replicate and verify the prior factor structure identified in Study 2. In addition, in Study 3, a non-student national United States sample was used to establish some generalizability of the measure.

Methods

Participants and Procedure

Three hundred twenty six people (46% female, 54% male) from a nationwide sample completed online a 15-minute personal experiences survey via Amazon.com Mechanical-Turk.[8] (Amazon Mechanical Turk participants were found representative of the United States population; Berinsky, Huber, & Lenz, forthcoming; Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, & Ipeirotis, 2010). For participation, each participant received $1.50 (which is the recommended compensation by Amazon Mechanical Turk for a 15-minute task).[9] The survey included 13 MExA items, 1 item assessing the foreign languages spoken, and an attention check question at the end of

the survey asking what the questions were about. Participants could select among the choices of *multicultural experiences*, *workplace behaviors*, and *political beliefs*. Multicultural exposure and interaction items were presented in two randomized blocks, which were presented in a randomized order. At the end of the survey, participants' age, gender and citizenship were asked via the same questions used in Study 2.

Analysis

One participant was excluded, as s/he did not complete the attention check. The remaining participants passed the attention check, resulting in a final sample size of 325.

First, a confirmatory factor analysis was conducted using structural equation modeling. When data is ordinal, structural equation modeling that uses polychoric correlations and their asymptotic covariance matrix is recommended (Jöreskog, 1994; McIntosh, 2007). Because MExA yielded ordinal response variables, a diagonally weighted least squares (DWLS; Jöreskog & Sörbom, 2012) method and Satorra-Bentler chi-square (Satorra & Bentler, 2001) were appropriate for model fitting (Bandalos, 2008; Flora & Curran, 2004; Mindrila, 2010; Wirth & Edwards, 2007), and thus were used in this study.

In the first step of the DWLS method, polychoric correlations and asymptotic covariance matrix were computed in PRELIS 2 (Jöreskog & Sörbom, 1999). In the second step, the resulting asymptotic covariance matrix was used to fit the two-factor model in LISREL 9.1 (Jöreskog & Sörbom, 2012). The 2 breadth and 2 duration items excluded from the exploratory factor analysis were also excluded from the confirmatory factor analysis.

Chi-square is an index of exact model fit, assessing the match between the covariances implied by the model's structure and those that are observed in the data. The bigger the chi-square gets, the worse the model fit. However, because the chi-square formula contains sample size, its value rises as sample size increases, easily yielding a result of significant statistic and a non-fit at increasing sample sizes (c.f. Goffin, 2007), especially if the observations are greater than 200 (c.f. Hoe, 2008). For this reason, an alternate examination of the chi-square statistic that is used is to examine the ratio of the chi-square to its degrees of freedom and expect a value of 3 or less as an indicator of good model fit (Kline, 1998). In addition, many goodness of fit indices have been developed to assess the degree of goodness of the model fit, as opposed to testing whether the model has a perfect fit or not. Specifically, comparative fit index (CFI), normed fit index (NFI), root mean squared error of approximation (RMSEA), and standardized root mean squared residual (SRMR) are the most informative indices for evaluating whether the model has a good fit or not (c.f. Carmines & McIver, 1981; Garver & Mentzer, 1999). A model with a significant chi-square may still be a good fit if the fit indices are supportive (Jöreskog & Sörbom, 1996). While CFI and NFI over .95 indicate a good fit, SRMR that is smaller than .08 is expected for a good fit (Hu & Bentler, 1999). RMSEA value of less than .06 indicates a good fit (Hu & Bentler, 1999), while values up to .08 indicate a reasonable fit (McDonald & Ho, 2002), and values between .08 and .10 indicate a mediocre fit (Hoe, 2008). In sum, chi-square test and goodness of fit indices complement each other (Mulaik, 2007), and thus, in this research they were utilized in combination.

After the confirmatory factor analysis, the internal consistency of the MExA and its subscales were examined. Then exploratory analyses were conducted to closely examine the multicultural exposure and interaction scores for frequency, duration, and breadth dimensions. The relationships among these scores and their association with age were investigated. Finally, each of the exposure and interaction items and the overall scores were inspected to see whether any gender differences existed.

Results

Participants' ages ranged between 18 and 75 with a mean of 35.1 years (*SD* = 12.6). They were citizens of the following 8 countries: United States (97.2%), India (.9%), Canada, Czech Republic, Turkey, Uganda, United Kingdom, and United States Minor Outlying Islands (.3% each). On average, the participants had a MCE about twice a year (*M* = 3.1, *SD* = 1.0 for frequency of MCE); had MCE with 7 different cultures (*M* = 6.6, *SD* = 7.9 for breadth of MCE); had their first MCE about 5 years ago (*M* = 5.2, *SD* = 1.1 for duration of MCE); and spoke .7 foreign languages (*SD* = .9) in addition to their mother tongue.

Confirmatory Factor Analysis

Figure 3 presents the resulting path diagram. Both factors' loadings (which were regression coefficients rather than correlations) were high, with loadings on multicultural exposure ranging between .65 and 1.18 (*p* ranging between .049 and .070), and loadings on multicultural interaction ranging between 1.19 and 1.39 (*p* ranging between .024 and .071).

The Satorra-Bentler scaled chi-square was 68.73 with 26 degrees of freedom ($p < .05$), indicating that the tested model does not have a perfect fit. (Chi-square for the independence model was 2,718; $df = 36$.) The chi-square to degrees of freedom ratio was 2.64, showing that the model has a good fit. NFI was .975, CFI was .984, and SRMR was .048, all supporting the conclusion that the model has a good fit. Also, RMSEA was .076, indicating that the model has a reasonable fit. Finally, fitted residuals were scattered close to zero, ranging between -.201 and .333, supporting the fit of the present model.

Next, the two-factor model was compared with the one-factor model as an assessment of the competing single-factor approach to the construct (Goffin, 2007; Millsap, 2007; Tomarken & Waller, 2003). In relation to the two-factor model presented in this research, the one-factor model represented a hypothetically true model, because traditionally MCE has been treated as a single-factor construct in the literature. Figure 4 presents the path diagram for the one-factor model. The Satorra-Bentler scaled chi-square for the one-factor model was 283.39 ($df = 27$; $p < .05$), indicating that this model does not have a perfect fit either, and the chi-square for this model was even larger than that of the two-factor model. The chi-square to degrees of freedom ratio was 10.5, indicating that the single-factor model had a poor fit. RMSEA was .111, NFI was .895, CFI was .904, and SRMR was .127, all revealing that the single-factor model had a poor fit.

In addition to the comparison of global fit indices, the chi-square difference between the two models was tested for significance as another tool for model comparison. The difference of the chi-square values for the two models was 214.66 (*df*

= 1; $p < .05$), showing that the fit of the two-factor model was significantly better than that of the one-factor model.

Finally, the 90% confidence intervals for RMSEA for the two-factor model (.0563; .0965) and the single-factor model (.0987; .136) did not overlap, showing that the former model was significantly superior to the latter one (c.f. Colquitt, 2001).

Internal consistency

The final frequency subscale of MExA had a Cronbach's alpha of .87. The reliability was .80 for multicultural exposure and .89 for the multicultural interaction dimension.

Table 21 shows the item-total statistics. As expected, the item-to-total correlations were high (i.e. all above .40). In addition, item-to-total statistics revealed that the internal consistency of the scale would decrease if any of the retained items were deleted.

Although they were not included in the factor analysis, the internal consistencies of the breadth and duration scores were also examined in this study. The duration subscale had a Cronbach's alpha of .72, and the overall breadth subscale had an alpha of .59. Finally, all the items retained in the instrument were standardized, and reliability for the whole MExA instrument was computed as .83. Table 22 presents the item-to-total statistics for the full measure. All item-to-total correlations were above .40, except for the breadth and duration items. In addition, statistics showed that Cronbach's alpha would increase if three of the breadth and duration questions were deleted. Those items were not previously deleted, because there were only single items for measuring the breadth and duration of exposures. However, the highest increase in

the alpha as a result of eliminating an item was .005 points. Therefore, retaining these items had a negligible effect on the scale alpha.

Exploratory Analyses

Frequency of multicultural exposure. On average the participants were exposed to different cultures about once a year (M = 2.7, SD = 1.0 for frequency of multicultural exposure). The participants watched movies that take place in different cultures (*M* = 3.3, *SD* = 1.1) and listened to music of foreign cultures (*M* = 3.1, *SD* = 1.5) multiple times a year. They read books about foreign people' (*M* = 2.6, *SD* = 1.2), watched foreign TV channels (*M* = 2.5, *SD* = 1.4), and watched different cultures' celebrations (e.g. festivals, parades) on TV (*M* = 2.3, *SD* = 1.1) about once a year.

Duration of multicultural exposure. More than half (68.3%) of the participants reported first being exposed to different cultures 10 years ago or more, while 13.5% reported this exposure being 5-10 years ago. Eight percent reported that this exposure happened 2-5 years ago; 5.2% reported that it happened less than 1 year ago; and 3.1% reported that it was 1-2 years ago. Less than two percent (1.8%) reported that they had never been exposed to different cultures via presented exposure activities.

Breadth of multicultural exposure. Participants reported being exposed to a total of 217 different cultures. The most frequently exposed cultures were those of Mexico (39.7%), United Kingdom (35.7%), France (31.1%), Germany, Japan (30.8% each), United States (27.7%), Australia (26.8%), India (24.6%), China (24.3%), Italy (23.4%), Canada (20.3%), Brazil, Ireland (20.0% each), Spain (16.6%), and Israel

(16.0%). Excluding 5 outlier cases, participants were exposed to an average of 8.3 different cultures (*SD* = 11.5; range: 0 - 56).[10]

Frequency of multicultural interaction. On average, participants interacted with people from different cultures multiple times a year (*M* = 3.5, *SD* = 1.3). They talked to (*M* = 3.8, *SD* = 1.4), socialized with (*M* = 3.5, *SD* = 1.5), communicated via writing with (*M* = 3.3, *SD* = 1.7), and shared feelings with (*M* = 3.2, *SD* = 1.5) people from different cultures multiple times a year.

Duration of multicultural interaction. When participants were asked when they first started interacting with different cultures, more than half (57.5%) of them responded 10 years ago or more, 18.2% responded 5-10 years ago, 12.0% responded 2-5 years ago, 4.6% reported 1-2 years ago, and 4.3% reported 0-1 year ago. About three percent (3.1%) reported that they had never interacted with people from different cultures.

Breadth of multicultural interaction. Participants reported interacting with people from a total of 233 different countries, most frequent of which were the cultures of Mexico (36.3%), United States (25.5%), United Kingdom (24.9%), Germany (20.6%), Australia, China (18.5% each), Canada, India (16.9% each), Japan (15.7%), France (14.2%), Italy (11.4%), Philippines, Puerto Rico (9.8% each), Spain (9.2%), and Brazil (8.6%). Excluding 1 outlier case, on average participants reported interacting with people from 5.1 different cultures (*SD* = 6.9; range: 0 – 47).[11]

Relationships among exposure and interaction scores and demographic variables.

Correlations between multicultural exposure and interaction. Table 23 presents the correlations among the multicultural exposure and interaction scores and age. The correlations between the multicultural exposure and interaction scores were significant for all three MCE dimensions. The correlation between the frequency of exposures and interactions was .49 ($p < .01$); the correlation between the duration of exposures and interctions was .56 ($p < .01$); and the correlation between the breadth of exposures and interactions was .47 ($p < .01$). In addition, overall levels of multicultural exposure and interaction were positively correlated ($r = .52$, $p < .01$). Thus, there was a positive relationship between multicultural exposure and interaction.

Correlations among multicultural exposure scores. As presented in Table 21, all correlations among the three multicultural exposure scores for frequency, duration, and breadth dimensions were significant. The correlation between the frequency and duration of exposures was .18 ($p < .01$); the correlation between the frequency and breadth of exposures was .20 ($p < .01$); and the correlation between the duration and breadth of exposures was .20 ($p < .01$). In other words, the more frequently an individual was exposed to different cultures, the more cultures s/he was exposed to. Also, the longer an individual was exposed to different cultures, the more cultures s/he was exposed to. In addition, the longer an individual was exposed to different cultures, the more frequently s/he was exposed to them.

Correlations among multicultural interaction scores. All of the correlations among the multicultural interaction scores for three dimensions were also significant:

The correlation between the frequency and duration of interactions was .18 ($p < .01$); the correlation between the frequency and breadth of interactions was .29 ($p < .01$); and the correlation between the duration and breadth of interactions was .24 ($p < .01$). That is, the more frequently an individual interacted with different cultures, the more cultures s/he was interacting with. Also, the longer an individual interacted with different cultures, the more cultures s/he interacted with. In addition, the longer an individual interacted with cultures, the more frequently s/he interacted with them.

Correlations with the number of foreign languages. The number of foreign languages spoken was correlated positively with both (i) the frequency of exposures ($r = .41$, $p < .01$) and interactions ($r = .37$, $p < .01$), and (ii) the breadth of exposures ($r = .12$, $p < .05$) and interactions ($r = .19$, $p < .01$). Hence, the individuals who had MCEs more (vs. less) frequently, and the individuals who had experience with more (vs. less) cultures also spoke more foreign languages. In addition, the individuals who could speak more (vs. fewer) foreign languages also had higher levels of multicultural exposure ($r = .25$, $p < .01$), multicultural interaction ($r = 27$, $p < .01$), and MCE ($r = .30$, $p < .01$).

Correlations with age. Age was negatively correlated with the frequency of multicultural interaction ($r = -.20$, $p < .01$) and overall MCEs ($r = -.19$, $p < .01$). Thus, younger (vs. older) people had more frequent MCEs and multicultural interactions. In addition, older (vs. younger) people had MCEs ($r = .11$, $p < .05$), and multicultural exposures ($r = .12$, $p < .05$) for a longer period of time.

Age was also negatively correlated with the number of foreign languages spoken ($r = -.15$, $p < .05$). That is, compared to older people, younger people spoke more foreign languages.

Gender differences. MANOVA tests were conducted to investigate any gender differences in the frequency scores, breadth scores, and number of foreign languages spoken. Table 24 presents the findings. Results showed that there were no gender differences in the frequency or breadth of multicultural exposures and interactions, and in the number of foreign languages spoken. Hence, there were no significant differences in (i) the numbers of cultures males and females were exposed to and interacted with, and (ii) the frequency of which males and females were exposed to or interacted with foreign cultures.

For a deeper investigation, gender differences were checked in each of the multicultural exposure and interaction items via chi-square tests. Results (presented in Table 25) showed that there were no difference between males and females in terms of frequency of engaging any of the exposure or interaction activities.

Finally, additional chi-square tests (presented in Table 26) showed that there were no gender differences in the duration of multicultural exposures and interactions. In other words, there were no significant differences between how long the males and females experienced multicultural exposures or interactions.

Summary

The final MExA (presented in Table 14) had 9 frequency items (5 for exposures and 4 for interactions), 2 duration items (1 for exposures and 1 for interactions), and 2 breadth items (1 for exposures and 1 for interactions). In this study, the new and

independent data confirmed the two-factor structure of the MCE activities. In addition, model comparisons conducted in this study revealed that the two-factor model is significantly superior to the competing one-factor model, indicating that the new, two-factor model is an improvement over the practice of treating MCE as a single-factor construct

Moreover, empirical evidence showed that the scale has some generalizability because both a student and a national sample provided support for its factor structure. Once again the breadth subscale did not have a desired alpha level; however, the overall MExA, the duration subscale, and the frequency subscale had high internal consistency. In addition, the frequency measurement at both multicultural exposure and interaction dimensions had high reliability.

As in the previous study, exploratory analyses showed a positive relationship between the multicultural exposure and interaction dimensions. In addition, the frequency, duration, and breadth measures within each dimension (i.e. exposure and interaction) were positively associated with each other. In addition, having experience with more cultures (via exposures and interactions) was related with speaking more foreign languages. Moreover, younger (vs. older) people interacted with different cultures more frequently and spoke more foreign languages. No gender differences were found in any of the exposure and interaction scores.

Chapter 7

Convergent, Discriminant, and Criterion-Related Validities

Studies 1a, 1b, 2 and 3 provided evidence for the high content validity, 2-factor structure, generalizability and good internal consistency of the MExA and its frequency and duration scales. Further evidence of validity involves testing whether the scale correlates with other measures designed to assess similar constructs (convergent validity) and with dissimilar measures (discriminant validity). In addition, criterion-related validity is a necessary part of the construct validation process (Nunnally, 1976). It does not only exhibit the scale's practical utility, but also places the construct in a larger nomological network, providing additional support for the construct validity (Cronbach & Meehl, 1955). Study 4 was conducted to test the convergent, discriminant, and criterion-related validities of the frequency scale.

Methods

Participants and Procedure

Two hundred sixty eight students (44.8% female, 55.2% male) from Baruch College completed an hour-long online survey on personal experiences and preferences to fulfill a research requirement for a Psychology or Management class.[12] The survey included 14 MCE items (13-item MExA and 1 question about the foreign languages spoken), along with 20 cultural intelligence, 8 multicultural ideology, 10 openness to experience, 10 global self-esteem, 8 closed-mindedness, 4 growth-mindset and 4 fixed-mindset items. The multicultural exposure and interaction items were presented in two randomized blocks prior to the administration of other measures. The order of the exposure and interaction sub-scales, and all other measures, and items within each

inventory were also randomized for each participant. At the end of the survey, participants' age, gender, and citizenship were asked as in Studies 2 and 3.

Measures

The following questionnaires were included in the survey: 13-item MExA, Cultural Intelligence Scale (Ang et al., 2007; 20 items; α for metacognitive cultural intelligence = .71, cognitive cultural intelligence = .85, motivational cultural intelligence = .71, behavioral cultural intelligence = .83; in Appendix C), Multicultural Ideology Scale (Berry & Kalin, 1995; 8 items; α = .79; in Appendix D), Openness to Experience Subscale (from Big Five Inventory; 10-item subscale; α = .83; John, Donahue, & Kentle, 1991; in Appendix I), Rosenberg Self Esteem Scale (10 items; Rosenberg, 1989; α = .91, Sinclair, Blais, Gansler, Sandberg, Bistis, & LoCicero, 2010; in Appendix J), Closed-Mindedness Subscale (from Need for closure scale; 8 items; α = .62; Webster & Kruglanski, 1994; in Appendix K), Growth Mindset (4 items, Dweck, 2006; in Appendix L) and Fixed Mindset (4 items, Dweck, 2006; in Appendix L).

Analysis

MExA scores were computed in the same way as in Studies 1a, 2, and 3. All other scale and subscale scores were computed by averaging the items after the reverse items were reverse coded.

Next, relationships of MCE with multiple other constructs were examined, and Hypotheses 2a-c were tested to establish convergent and discriminant validities. Namely, the correlations of the MCE (i.e. MExA) score with cultural intelligence, multicultural ideology, openness to experience, and global self-esteem were examined.

Next, criterion-related validity was tested. Based on the previous studies that established relationships between MCE and growth and fixed mindsets and closed-mindedness (Narvaez & Hill, 2010), Hypotheses 3a-c were tested to establish criterion-related validity.

After this internal consistency of the MExA scale and its subscales were investigated. Then, exploratory analyses were conducted to examine the relationships among the multicultural exposure and interaction scores, and between MCE and 7 other constructs included in this study. Finally, relationships of these constructs with age, gender, and number of foreign languages spoken were investigated.

Results

Participants' ages ranged between 18 and 49 with a mean of 21.8 years (*SD* = 4.0). They were citizens of 27 countries, most frequent of which are the United States (61.9%), China (12.7%), Hong Kong, and Republic of Korea (2.2% each). On average, the participants had a MCE about once a month (*M* = 4.2, *SD* = .8 for frequency of MCE); had MCE with 7 different cultures (*M* = 6.5, *SD* = 6.5 for breadth of MCE); had their first MCE about 5 years ago (*M* = 4.9, *SD* = 1.1 for duration of MCE); and spoke 1.6 foreign languages (*SD* = 1.0) in addition to their mother tongue.

Construct Validity

Table 27 presents means, standard deviations, scale reliabilities, and inter-correlations among all measures included in the study. Because all variables in this study were measured via scales of different reliabilities, observed correlations were corrected for the attenuation due to unrealibility to provide accurate estimates of the 'true' relationships between underlying constructs (Schmidt & Hunter, 1996; Schmitt,

1996). This correction was done by dividing observed intercorrelations by the product of the square root of the two scales' reliabilities (Lord & Novick, 1968). The corrected correlations were examined while testing Hypotheses 2a-c and 3a-c. Following Cohen (1988), correlations smaller than .1 were accepted as trivial, correlations between .1 and .3 were accepted as small, correlations between .3 and .5 were accepted as moderate, and correlations that are equal to or bigger than .5 were accepted as large.

Convergent and discriminant validities.

Hypothesis 2a proposed that MCE is positively correlated with cultural intelligence, multicultural ideology, and openness to experience; and Hypothesis 2b stated that MCE would have the strongest positive correlation with cultural intelligence and the weakest positive correlation with openness to experience, with the correlation between MCE and multicultural ideology being in between. MCE had a moderate positive correlation with openness to experience (r_c = .37), cultural intelligence (r_c = .35), and multicultural ideology (r_c = .30). Hence, Hypothesis 2a was supported. While MCE was positively correlated with all three constructs, it had the strongest correlation with openness to experience and the smallest correlation with multicultural ideology. Therefore, Hypothesis 2b was not supported. However, these three correlations were close to each other in terms of magnitude. Overall, these results provided some support for convergent validity.

Hypothesis 2c stated that MCE would not be correlated with global self-esteem and was not supported. MCE had a positive correlation of .18 with global self-esteem. However, this correlation was considered to be small. In addition, global self-esteem was also correlated with cultural intelligence (r_c = .19), multicultural ideology (r_c = .30),

growth mindset (r_c = . 26), and openness to experience (r_c = .54). Among the constructs of MCE, cultural intelligence, multicultural ideology, and openness to experience, MCE had the lowest correlation with self-esteem. In addition, MCE's correlation with self-esteem (r_c = .18) was much smaller than its correlations with the converging constructs (i.e. cultural intelligence, openness to experience, and multicultural ideology), which were respectively .35, .37, and .30. These findings provided partial evidence for MExA's discriminant validity.

Criterion-related validity.

Hypotheses 3a-c proposed that MCE would be positively correlated with growth mindset (Hypothesis 3a) and negatively correlated with fixed mindset (Hypothesis 3b) and closed-mindedness (Hypothesis 3c). Results showed that MCE had a small positive correlation with growth mindset (r_c = .16), while it had moderate negative correlations with fixed mindset (r_c = - .30) and closed-mindedness (r_c = - . 38). Hence, Hypotheses 3a-c were supported. These results provided support for criterion-related validity.

Internal Consistency

The Cronbach's alpha for the validated frequency subscale was .80. The reliability was .80 for multicultural exposure and .85 for the multicultural interaction dimension.

In addition, the item-total statistics (presented in Table 28) were examined. All of the item-to-total correlations were above .40. In addition, item-to-total statistics revealed that the internal consistency of the scale would decrease if any of the items were deleted.

The duration subscale had a Cronbach's alpha of .69, and the breadth subscale had an alpha of .57. Finally, all the items retained in the instrument were standardized, and reliability for the whole MExA instrument was .76. Table 29 presents the item-to-total statistics for the full measure. All item-to-total correlations were above .30, except for three breadth and duration items. Moreover, statistics showed that Cronbach's alpha would increase if three breadth and duration questions were deleted. However, the highest increase in the alpha as a result of eliminating an item was .01 points, which was negligible.

Exploratory Analyses

Frequency of multicultural exposure. The average multicultural exposure frequency was 3.6 (*SD* = 1.0), corresponding to multiple times a year. Participants listened to music of foreign cultures 1 to 3 times a month (*M* = 4.2, *SD* = 1.4). They watched movies that take place in different countries (*M* = 3.8, *SD* = 1.1), watched foreign TV channels (*M* = 3.5, *SD* = 1.4), watched different cultures' celebrations on TV (*M* = 3.2, *SD* = 1.3), and read books about foreign people (*M* = 3.1, *SD* = 1.3) multiple times a year.

Duration of multicultural exposure. When participants were asked about the first time they got exposed to different cultures, 48.9% responded 10 years or more, 20.1% responded 5-10 years ago, 17.2% reported 2-5 years ago 7.5% reported 0-1 year ago, and 6% reported 1-2 years ago. One individual (.4%) responded that s/he had never been exposed to a different culture.

Breadth of multicultural exposure. Participants reported being exposed to a total of 173 different cultures. The most frequently cited cultures were those of the

United States (40.3%), China (34.7%), Japan (22.0%), France (18.7%), India (18.3%), Italy (17.9%), United Kingdom (17.9%), Brazil (14.6%), Hong Kong (14.2%), Dominican Republic (13.4%), Mexico (13.1%), Democratic People's Republic of Korea (12.7%), Germany (12.3%), Greece, and Russian Federation (11.9% each). Excluding 9 outliers, participants were exposed to an average of 5.0 cultures (*SD* = 6.04; range: 0 – 32).[13]

Frequency of multicultural interaction. The average frequency of multicultural interaction was 4.8 (*SD* = 1.1), corresponding to 1 to 3 times a month. The participants talked to (*M* = 5.2, *SD* = 1.0) and socialized with (*M* = 5.0, *SD* = 1.1) people from different cultures 1 to 6 days a week. They communicated via writing (*M* = 4.7, *SD* = 1.4) and shared feelings with (*M* = 4.4, *SD* = 1.4) people from different cultures 1 to 3 times a month.

Duration of multicultural interaction. When participants were asked about the first time they interacted with different cultures, almost half of them (46.6%) reported 10 years ago or more, 20.9% reported 2-5 years ago, 19.4% reported 5-10 years ago, 6.3% responded less than a year ago, and 6.0% responded 1-2 years ago. Less than one percent (.7%) reported that they never interacted with people from different cultures.

Breadth of multicultural interaction. In total, participants reported interacting with people from 210 different cultures, the most frequent of which were cultures of China (47.4%), the United States (42.5%), India (30.6%), Mexico (27.6%), Dominican Republic (24.6%), Italy (24.3%), Japan (22.7%), Puerto Rico (21.2%), Hong Kong (19.4%), France, Democratic People's Republic of Korea (17.9% each),

Colombia, Israel, and Russian Federation (17.2% each). Excluding 6 outliers, participants interacted with an average of 8.0 cultures (SD = 9.2; range: 0 – 43).[14]

Correlations among MExA sub-scores, other inventories, and demographic variables.

Correlations between multicultural exposure and interaction. The correlations between the multicultural exposure and interaction scores were significant for all three MCE dimensions. The correlation between the frequency of exposures and interactions was .24 ($p < .01$); the correlation between the duration of exposures and interactions was .56 ($p < .01$); and the correlation between the breadth of exposures and interactions was .43 ($p < .01$). Overall, an individual's multicultural exposure and interaction levels were largely correlated (r_c = .54). The more an individual was exposed to different cultures, the more the individual interacted with people from different cultures.

Correlations among multicultural exposure scores. The only significant correlation among the frequency, duration and breadth scores of multicultural exposure was the correlation between the duration and breadth of exposures (r = .28, $p < .01$). That is, the longer an individual was exposed to different cultures, the more cultures s/he was exposed to. The correlation between the frequency and duration of exposures was .06 (p = .31), and the correlation between frequency and breadth of exposures was -.04 (p = .50).

Correlations among multicultural interaction scores. All of the correlations among the frequency, duration, and breadth scores of multicultural interaction were significant. The correlation between the frequency and duration of interactions was .24

($p < .01$), the correlation between the frequency and breadth of interactions was .20 ($p < .01$), and the correlation between the duration and breadth of interactions was .20 ($p < .01$).

Correlations between MCE scores and other measures. The correlations among (i) MCE frequency, breadth, and duration scores, (ii) other inventories included in the study, (iii) the number of foreign languages spoken, and (iv) age were also presented in Table 27. The frequency and breadth of MCE had a trivial correlation ($r_c = .08$), and the frequency and duration scores had a small correlation ($r_c = .22$), while the correlation between the breadth and duration scores was large ($r_c = .51$). Thus, the longer an individual had MCEs, the more cultures s/he had experience with. Also, the longer an individual had MCEs, the more frequent those experiences were.

One's level of *multicultural interaction* had moderate correlations with one's openness to experience ($r_c = .33$), and multicultural ideology ($r_c = .32$), and small correlations with self-esteem ($r_c = .25$), cultural intelligence ($r_c = .21$), and growth mindset ($r_c = .14$). Hence, the individuals who interacted with more (vs. less) cultures, were more open to new experiences, had higher levels of multicultural ideology, self-esteem, cultural intelligence, and growth mindset. One's multicultural interaction was also negatively correlated with closed-mindedness ($r_c = .30$) and fixed mindset ($r_c = .28$).

An individual's level of *multicultural exposure* had a moderate positive correlation with one's cultural intelligence ($r_c = .39$) and openness to experience ($r_c = .31$), while it had a moderate negative correlation with closed-mindedness ($r_c = -.32$). Exposure also had a small negative correlation with fixed mindset ($r_c = -.20$). So, the

more cultures an individual was exposed to, the higher his/her levels of cultural intelligence and openness to experience, and the lower his/her levels of closed-mindedness and fixed mindset.

The *frequency of MCEs* had a large positive correlation with cultural intelligence (r_c = .52) and small positive correlation with openness to experience (r_c = .28) and the number of foreign languages spoken (r_c = .25). MCE frequency was also negatively correlated with closed-mindedness (r_c = -.31). Thus, the more frequently an individual was exposed to different cultures, the higher the individual's cultural intelligence and openness to experience, and the more foreign languages s/he could speak.

MCE breadth had a moderate negative correlation with closed-mindedness (r_c = -.034) and fixed mindset (r_c = -.34). The breadth of MCE was also correlated with multicultural ideology (r_c = .25) and openness to experience (r_c = .20). In other words, the higher the number of cultures an individual has experience with, the lower the individual's closed-mindedness and fixed mindset, and the higher the individual's multicultural ideology and openness.

Duration of MCE had a moderate correlation with openness to experience (r_c = .30) and a small correlation with multicultural ideology (r_c = .25) and self-esteem (r_c = .20). Hence, the longer an individual has MCEs, the higher his/her openness to experience, multicultural ideology, and self-esteem.

Correlations with age. An individual's age did not have any moderate or large correlations with the individual's other measures. However, age had small correlations with cultural intelligence (r_c = .13), multicultural ideology (r_c = .13), duration of MCE

(r_c = .11), and the level of multicultural interactions (r_c = .11). Thus, older (vs. younger) people had higher cultural intelligence, higher multicultural ideology, had MCEs for longer periods of time, and had more interactions with different cultures.

Gender differences. MANOVA tests were conducted to check for any gender differences in the frequency scores, breadth scores, number of foreign languages spoken, and other seven inventories included in Study 4. Table 30 presents the findings. Results showed that there were no gender differences in any of the MCE measurements.

The only gender differences existed in fixed mindset (F = 7.846, p < .01) and multicultural ideology (F = 7.852, p < .01). Females (vs. males) had higher multicultural ideology and lower fixed mindset scores. The average multicultural ideology score was 4.7 for males (SD = .8) and 5.0 for females (SD = .82); and the average fixed mindset score was 3.1 for males (SD = .9) and 2.8 for females (SD = .9).

As a follow-up examination, gender differences were examined for each of the multicultural exposure and interaction items via chi-square tests presented in Table 31. Results showed that females tended to watch foreign TV channels more frequently than males did ($\chi^2 = 14.495$, $df = 5$, p < .05).

Finally, chi-square tests were conducted to check for gender differences in the duration scores of exposures and interactions. Results (presented in Table 32) showed that there were no gender differences in the duration of multicultural exposures and interactions. In other words, there were no significant differences between how long the males and females experienced multicultural exposures or interactions.

Summary

The MCE scores were positively associated with the three converging constructs (cultural intelligence, openness to experience, and multicultural ideology). In addition, although the correlation between MExA and self-esteem scores was not trivial as expected, it was still small (r_c = .18). Also, MExA's correlation with self-esteem was much smaller than its correlations with the converging constructs (which ranged between .30 and .37). These findings provided some support for MExA's convergent and discriminant validities.

The MCE scores were also positively associated with growth mindset and negatively correlated with fixed mindset and closed-mindedness. Thus MCE's nomological relationships were replicated with MExA, providing evidence for its criterion-related validity.

Finally, replicating the internal consistency results in the previous studies, MExA had an acceptable reliability.

In Chapter 8, results of the studies 1a, 1b, 2, 3, and 4 are discussed in detail, along with their implications, limitations, and future research paths.

Chapter 8

General Discussion

In this chapter, I discuss the main findings in relation to the literature and present their contributions and implications. Then, I discuss the exploratory findings, followed by the limitations of this research and future research directions.

A Multidimensional Conceptualization of MCE

This research contributes to the MCE literature by providing support for a multidimensional conceptualization of the MCE construct. That is, MCEs can be categorized into two types of experiences. Specifically, it was found that diversity of an individual's cultural experiences can be categorized as multicultural exposures, which are instances in which the person becomes subject to elements or members of foreign cultures without interacting with them, and multicultural interactions, which are the experiences that consist of verbal or non-verbal communication and reciprocal action or influence between the person and members of foreign cultures. In addition, multicultural exposures and interactions can be measured in terms of frequency (i.e. how frequently they happen, e.g. every day), breadth (i.e. their scope, e.g. being exposed to 3 foreign cultures) and length (i.e. their duration, e.g. being exposed to a foreign culture for 2 to 5 years).

A Psychometrically Tested Measure

Another main contribution of this research is the development of the MExA as a parsimonious instrument. By grounding MExA items on previous MCE instruments, conceptual arguments, and research, and conducting two content validity studies ensured that MExA had high content validity. In addition, MExA had positive

correlations with the three proximal constructs, i.e. openness to experience, cultural intelligence, and multicultural ideology, providing some support for convergent validity. Also, the correlation between MCE and self-esteem was small and weaker than its relationships with the converging constructs of cultural intelligence, openness to experience, and multicultural ideology, providing some support for discriminant validity. Moreover, MCE's nomological relationships (i.e. positive relationship with growth mindset, and negative relationships with fixed mindset, and closed-mindedness) were replicated in this research, supporting criterion-related validity. Finally, the internal consistency of MExA ranged between .76 and .83 in three studies. Therefore, the results of this research demonstrate the MExA has acceptable content, convergent, discriminant, and criterion-related validities and internal consistency.

On the Nomological Network of MCE

It was found that among the converging constructs, MCE had the strongest association with openness to experience (r_c = .37) and the weakest association with multicultural ideology (r_c = .30), the relationship with cultural intelligence being in between (r_c = .35). Although these relationships are proximal to each other, Allport's (1954) contact theory may explain why MCE's correlation did not have a large correlation with multicultural ideology. Contact theory posits that for cross-cultural interactions to result in prejudice reduction and understanding, (a) individuals in cross-cultural contact should have equal status, (b) the encounter should require cooperation and pursuit of a common goal, and (c) such contact should be supported by those in positions of authority. These conditions do not always exist in situations or events through which the individual gains MCE. For instance, an individual who works with

people from different countries may experience problems and dislike these collaborations, resulting in high MCE but not high multicultural ideology. Future research may test the three conditions posited by Allport (1954) as moderating variables on the relationship between MCEs and multicultural ideology.

It was found that MCE had a positive association with growth mindset. However, this relationship was smaller than expected (r_c = .16). It should be kept in mind that the research on MCE's nomological relationships is currently quite limited, and so far only one study (i.e. Narvaez & Hill, 2010) found a positive relationship between MCE and growth mindset. Thus, there is a need for more research that investigates and provides empirical evidence for MCE's nomological relationships.

It was previously argued that because global self-esteem was an overall evaluation, it would not carry individual information in a specific context, and thus was not a good predictor of individual behavior or performance in a specific context (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995; Rubin & Hewstone, 1998). However, this research showed that MExA had a small correlation (r_c = .18) with self-esteem. This finding could cast shadow on the discriminant validity of the measure. However, the self-esteem construct was also correlated with openness to experience (r_c = .54), multicultural ideology (r_c = .30), growth mindset (r_c = .26), and cultural intelligence (r_c = .19). Among these constructs MCE had the lowest correlation with self-esteem. However, these findings raise the suspicion that self-esteem may not be an appropriate construct for testing discriminant validity.

Reliability of MExA

Although MExA achieved good internal consistency (ranging between .76 and .83) in all three studies (Studies 2, 3, and 4), the breadth subscale consistently failed to achieve reliability over the expected limit of .70 (Nunnally, 1976). Cronbach's alpha for the breadth scale was .57, .59, and .68 in three studies. Also, in Study 4, the duration scale obtained a reliability of .69. Thus, both of these subscales need to be improved. Particularly, the precision of the breadth questions needs to be increased. The number of cultures with which participants had MCE with was quite dispersed. In three studies (Studies 2, 3, and 4) the number of cultures exposed ranged between 0 and 65 with standard deviations ranging between 6 and 13. Similarly, the number of cultures interacted with ranged between 0 and 51 with standard deviations ranging between 7 and 11. One way to improve the breadth question may be to replace the dropdown list of countries, and ask participants to 'list' the cultures they got exposed to (or interacted with). Because a dropdown list presents individuals with the names of countries, it may remind some individuals of trivial experiences, which would not be remembered and reported without the list. For example, when a Canadian individual sees the country name "Egypt," s/he may remember having an Egyptian classmate in one of her/his classes, and choose this culture although s/he never interacted with this classmate. Without the cue provided by the dropdown list, the participant may not remember this classmate, with whom s/he had no interaction. However, if the individual had interactions with this friend, s/he would remember these interactions and report Egyptian culture even in the absence of a dropdown list. Supporting this idea, in Study 1a, where the breadth questions were open-ended (that is,

the participants wrote down their own lists of cultures), the reported number of cultures ranged between 1 and 10 with a standard deviation of about 2.5. Some may argue that a dropdown list can remind individuals of some forgotten MCEs and may improve reporting accuracy. However, MExA does not need to measure forgotten or negligible instances, and should capture only those experiences that were remembered as an experience.

The Fit of the Two-Factor Model

The results of the confirmatory factor analysis (in Study 3) showed that the two-factor model of MCE did not achieve a perfect fit established by a nonsignificant chi-square test. This may be a subject of criticism of the conclusion that confirmatory factor analysis provided support for the two-factor model. However, the null hypothesis upon which the chi-square test is predicated is almost unreasonable, because it suggests that the proposed model could be expected to fit perfectly in the population. Given the state of our collective knowledge in most areas of social sciences, and the complexity of investigated social and psychological processes, it would be unreasonable to expect that a structural equation model would fit perfectly in the population (Browne & Cudeck, 1993; Goffin, 2007; MacCallum, 2003). Therefore, a model with a close fit has much value for the theoretical development (Goffin, 2007). Also for this reason, the practice of making a dichotomous accept/reject decision based on the null hypothesis significance test has been severely criticized by researchers (Cohen, 1994; Gigerenzer, 2004; Rosnow & Rosenthal, 1989). Consequently, in this research goodness of fit indices were utilized; and it was established that the two-factor model of MCE with multicultural exposure and interaction factors had a 'good' fit.

Generalizability of MExA and Sample Differences

Studies provided evidence for the generalizability of the instrument in addition to its validity and reliability. The samples used in studies 2 and 4 (Samples A and B) and the sample used in study 3 (Sample C) differed in multiple ways. Samples A and B consisted of college students in a very culturally diverse environment (i.e. New York City), while Sample B consisted of non-student individuals across the U.S.A. While 97% of the Sample A were between the ages of 18 and 29, and 97% of the Sample B were between 18 and 32, 97% of the Sample C ranged between the ages of 18 and 64. Also, on average, the individuals in Samples A and B had MCEs multiple times a year, while individuals in Sample B had a MCE once a year. In addition, the individuals in Samples A and B were from a variety of cultures (i.e. 41 different countries such as U.S.A., China, Russia, Bangladesh, Japan, Sweden, Poland, Colombia, and Dominican Republic), while the individuals in Sample B represented 8 different countries. In sum, utilization of these different samples provided some support for the generalizability of the measure's structure and psychometric features. In addition, because this instrument has no specific culture's name or label on it, it may be used cross-culturally.

The fact that even the participants in the national sample have MCEs on a regular basis, and that the individuals in a culturally diverse setting have even more MCEs underline the importance of the MCE construct. These findings provide some support for the notion that in this age almost everyone in developed countries have MCEs. Thus findings in this research support the importance of the MCE construct and the research on its nature and relationships.

Utilization of MExA in Research and Practice

MExA can be a helpful tool for researchers to study MCE's and their different types' associations with different variables, such as creativity, managerial effectiveness, or cross-cultural adaptation. For example, Maddux and Galinsky (2009) found in their studies that while the experience of living abroad increased creativity in both individual problem solving situations and dyadic negotiations, the experience of traveling abroad did not. A unidimensional examination of the MCE construct is insufficient to clarify these findings. However, an investigation of the relationships between different MCE types and creativity outcomes may explain these different effects via revealing that certain types of experiences have greater effects on creativity than others. For instance, multicultural interactions may have a greater effect on individual's creativity or multicultural competence than multicultural exposures. Gochenour and Janeway (1993) argue that when socializing with people from different cultures, individuals inevitably become confronted with situations that offer opportunities for deeper perception and more informed understanding than being in the mere presence of cultural stimuli. Thus, multicultural interactions and communication may hold a bigger potential for multicultural teaching and development than exposures. Therefore, future research may investigate differential relationships of different MCE types with numerous outcomes of interest, such as creativity, multicultural learning, or multicultural competence. This research can then be used to inform organizational practices. That is, if a particular MCE type (e.g. multicultural interaction) were found to be associated with some outcome of interest (e.g. cross-cultural adaptation), then

managers could use MExA to measure that MCE type as a predictor of employee performance.

In addition, if research found that MCE, multicultural exposure, or multicultural interaction were related to organizational outcomes (such as innovation, conflict, or team performance), then management could utilize MExA to measure the predictor(s) of such outcomes of interest. For example, previous research shows that cross-racial or ethnic interactions in the educational environment are related to cognitive development (Gurin et al., 2002), higher levels of critical thinking skills, analytical skills, and general and specific knowledge (Astin; 1993), and development of information processing that improves learning and cognitive growth (Denson & Chang, 2009; Gurin et al., 2002). Based on the findings in the educational arena, future research may investigate whether multicultural interactions are also related to similar cognitive improvements, e.g. in critical thinking or analytical skills.

Townsend and Wan (2007) found in their longitudinal study of multicultural experience in educational context that students' cross-cultural interpersonal contact was positively related to their socio-cultural adaptation at the end of three years. Thus, students' level of multicultural interaction may also be positively related to socio-cultural adaptation as well. Consequently, MExA can be utilized in the educational field to measure students' multicultural interactions and identify room for improvement to harvest cross-cultural adaptation benefits.

In a similar way, MExA can be utilized in many applied fields (e.g. multicultural counseling) and tasks (e.g. selection of consultants, teachers, or advisors to be assigned to particular tasks or teams). For example, experience in different

cultures may be an important predictor of performance in the field of multicultural counseling. With the increases in societal diversity, multicultural competence of counselors has become a critical issue in the field of psychological counseling (c.f. Ahmed, Wilson, Henriksen Jr., & Jones, 2011). Multicultural competence is in part to approach the counseling process from the context of the personal culture of the client (c.f. Sue, Arrendondo & McDavis, 1994; Sue & Sue, 2007). Because understanding of different cultures becomes relatively likely when individuals get into relationships and communicate with members of those cultures (Gochenour & Janeway, 1993), multicultural interaction may have a greater effect on counselor's multicultural competence than multicultural exposure. To the degree that psychological counselors' multicultural interaction can contribute to their multicultural counseling competence, MExA can be utilized in the counseling field to identify possible room for improvement in counselors' MCE and to select consultants for patients with diverse backgrounds. Similarly, multicultural interactions may contribute to teachers' multicultural competence. Thus, school administrators may use MExA to assess teachers' multicultural interaction and identify any room for improvement in order to develop multicultural competence in dealing with diverse student populations.

Exploratory Findings

Relationship between multicultural exposure and interaction. Results showed that multicultural exposures and interactions have a positive relationship, established by positive correlations at all three dimensions of frequency, breadth, and duration. Also, overall exposure and interaction scores had high positive correlations ranging between .52 and .59. This finding supports the argument that an individual

who is exposed to different cultures would also develop some interactions with members of those cultures. In the opposite direction, an individual who has intensive interactions with people from different cultures may be exposed to elements of those cultures as well.

Although the correlations between exposures and interactions are large, they are not too large (e.g. in the range of .80s or .90s). Thus, these correlation figures support that although multicultural exposure and interaction dimensions are positively related, they are distinct.

Relationships among three measurement modes. Results showed that the three measurements (i.e. frequency, duration, and breadth scores) of multicultural interactions were positively associated. However, when it comes to multicultural exposures, the only consistently significant correlation among these measurements was the one between duration and breadth scores. That is, the findings consistently showed that the longer an individual was exposed to different cultures, with more cultures s/he was exposed to. Thus, once individuals start getting exposed to different cultures, the breadth of those different cultures increases as well. Future research may investigate this relationship, and examine whether a mediator exists. For example, it is reasonable to suggest that an individual who is exposed to different cultures may develop multicultural ideology or a positive attitude towards different cultures, leading this individual to seek exposures from a variety of different cultures.

The finding that the scores for three measurement modes were significantly correlated for interactions but not for exposures may also provide evidence for the distinction between multicultural exposures and interactions. One may argue that

multicultural interactions tend to be (relatively) under the control of an individual, while exposures are, generally, out of individual's control. For example, an individual may *choose* to befriend others from different cultures or work in a company with a diverse employee population. Because interactions are under an individual's control, the frequency, duration or breadth of such interactions would also be based on individuals' preferences. For this reason, an individual who chooses or prefers to have multicultural interactions may have high scores on all three measurement modes, while an individual who chooses not to interact with different cultures may have low interaction scores on all three levels. However, multicultural exposures may be relatively unrelated to individual preferences. Individuals may be exposed to different cultures without choosing to do so. For example, one may be exposed to a different culture by listening to a song on the radio by coincidence. Because such exposure is coincidental rather than not sought, the frequency, duration, and breadth of such exposures may not be strongly associated. Future research may be conducted to investigate the underlying reason why the measurement modes are correlated for the interactions but not exposures.

Gender differences. In Study 2, it was found that females had MCEs and interacted with different cultures more frequently than men. Specifically, females (vs. males) *socialized* and *communicated via writing* with people from different cultures significantly more frequently. Literature on gender stereotypes show that females (more than men) are thought to be communal, expressive, and friendly (c.f. Deaux & Major, 1987; Wood & Eagly, 2010). Thus, the finding that females socialized and communicated with people from different cultures more frequently than males is

parallel to the previously documented gender stereotypes. However, in Study 2, there were no gender differences in any of the other MExA scores (e.g. frequency of exposures, and breadth or duration of MCEs). In addition, in Studies 3 and 4, there were no gender differences in any MExA scores. Thus, overall findings suggest that females and males do not differ in terms of their MCEs. This conclusion is parallel to the previous findings in gender differences literature that showed no difference between males and females in social and personality variables and verbal and nonverbal communication (see Hyde, 2005; Hyde & Plant, 1995). Thus, exploratory findings in this research provide context specific support for the *gender similarities hypothesis* (Hyde, 2005) that, in general, posits that males and females are similar on most psychological variables. Then the gender differences found in Study 2 may be due to the characteristics of the specific sample in that study.

Future Research Directions

This research was the first attempt to validate a new MCE instrument; and although promising there is opportunity to further improve the scale and continue methodological development.

First of all, more validation research needs to be conducted, because scale development and validation are iterative processes. Although two different samples were used in the current validation process, it is possible that some aspects of our samples biased the results. In addition, the low reliability of the breadth subscale suggests that the MExA instrument needs to be improved. Thus, more research is needed to test, enrich, and refine this measure.

Also, only the frequency subscale of MExA was validated in this research. The duration and breadth subscales have single global questions to assess the duration and breadth of the exposure and interaction dimensions. Also, because they used different scales than the frequency scale, they were not included in the validation process. Thus, future research is needed to validate the breadth and duration subscales. One way to improve and validate the breadth and duration subscales may be to increase the number of items in each subscale. Future psychometric research on MExA may provide participants with the validated list of MCE activities (i.e. 5 exposure and 4 interaction activities) and ask them to assess these 9 activities using the frequency, breadth, and duration scales. In this version of MExA, frequency, breadth and duration subscales would have the same 9 items each, without increasing the total number of items in the instrument.

The conceptualization of MCE presented in this research necessitated measurement of behavioral frequency. However, some problematic issues related to frequency measurement such as different interpretations of vague anchors (e.g. *frequently* and *sometimes*; c.f. Bradburn & Miles, 1979), possible negative effect of poor memory on the responses (c.f. Sudman, Bradburn, & Schwarz, 1996) and possibility of response options driving responses (c.f. Schwarz, 1991; Schwarz, Hippler, Deutsch, & Strack, 1985) have been acknowledged in the literature. In order to prevent varying interpretations of the anchors among participants, I utilized concrete and quantifying anchors in scales (e.g. "1-6 days a week" and "2-10 times a year"). In order to prevent response options affecting the responses, I employed a scale that covers a wide time period (ranging from *once a year or less frequently* to *multiple times*

a day). Poor memory of the respondents may still cause some data loss in this measurement. MExA will not be able to measure experiences that participants cannot remember. However, if a participant cannot remember some multicultural experiences because they were never noticed or stored in the memory (Sudman et al., 1996), or have not been recalled in a long time (Sudman et al., 1996), then loss of this data about unnoticed, unstored, unused, and unactivated experiences are not problematic from the conceptual perspective. At the end, MExA should capture only those experiences that were noticed, stored, and activated enough to be remembered as an experience. Future research may investigate the overlap between individuals' level of MCE as measured by MExA and the actual counts of multicultural exposures and interactions. For instance, a journal study, in which participants log their MCEs for a period of time (e.g. a month), may examine whether the participants' MExA scores accurately reflect the actual frequency of their MCEs.

An additional direction to improve the scale is to consider the impact of the framing of the time period for the frequency items. I chose to ask individuals to assess the frequency of all their past and present MCEs without specifying a time period for their MCEs; however, another option is to limit the range to a set period of time, such as *last 10 years*. For example, individuals can be asked to assess the frequency of their multicultural exposures and interactions in the last 10 years. Assuming the sample consists of adults, the frequencies reported for the MCEs that took place within the last 10 years may be more accurate than those reported for MCEs that took place throughout their life. In addition, people may better remember multicultural experiences that took place within the last 10 years versus any time in their life.

Another future direction is to revise the duration items and ask individuals directly "for how long" they have had the listed MCEs rather than asking about the first time they experienced them. Asking about the first time that an individual engaged in an activity and using this information as a measure of duration for that activity introduces an implicit assumption that the activity level has been sustained. By directly assessing the *time length*, such an assumption will be eliminated.

In addition, in this study, MExA was validated only in the U.S. Future research should validate this instrument in different languages and countries to utilize it as a cross-cultural research tool. However, MExA has some generalizability, since samples in Studies 2, 3, and 4 consisted of individuals who came from 41 different countries.

Also following the majority of the research on MCE, culture and multicultural terms were conceptualized at the national level. Future research may define culture at different levels, such as including cultural differences among different ethnic or racial minorities, genders, and people with different sexual orientations.

Moreover, future research may collect information about the specific cultures the participants were exposed to or interacted with and examine the cultural distance among them. In this research, the breadth of MCE was operationalized as the number of different cultures an individual has experience with. Cultural distance can be an alternative measure of the breadth of MCE. *Cultural distance* measures the extent to which cultures are similar and different (Kogut & Singh, 1988; Shenkar, 2001; Sousa & Bradley, 2006). By quantifing the distance among cultures, MCE in cultures that are relatively proximal (such as U.S.A, Canada, and United Kingdom) may be distinguished quantitatively from those in cultures that are relatively distant (such as

U.S.A., China, and Egypt; c.f. Hofstede, Hofstede, & Minkov, 2010; Inglehart & Welzel, 2010). Future research may test whether MCE in distinct and distant (versus proximal) cultures may carry greater importance with regards to predicting outcomes such as cross-cultural adjustment.

Finally, future research needs to be conducted to investigate the causality between cultural intelligence and MCE. The hypothesis that cultural intelligence may develop as a result of having MCEs needs to be tested. In addition, openness to experience may be the driving force for seeking MCEs and thus obtaining higher levels of cultural intelligence. Such a causal link between openness to experience, MCE, and cultural intelligence may be the reason why the current research did not show that MCE had differential correlations with openness to experience and cultural intelligence. Thus, there is a need for a longitudinal investigation to test the causal link among these three constructs.

Conclusion

This research offers a new conceptualization of MCE, in which relatively superficial and more substantial multicultural experiences are distinguished. The findings provided support for this construct and the corresponding instrument, MExA. Because this is the first attempt to validate this multidimensional construct, there are research directions that can be taken for conceptual and methodological improvement. However, overall this research improves our understanding of the construct, provides the initial validation of a new MCE construct, and offers a psychometrically tested measure.

Footnotes

1 I contacted Professor Darcia Narvaez (on March 4, 2012) and asked for a copy of the MEXQ, so that I could present more detailed discussions about it and its subscores. However, she sent me only the newer scale she and Patrick L. Hill developed (i.e. MEQ) and not MEXQ, which previously led to some inconsistent psychometric results (as reported in Narvaez & Hill, 2010). Thus, information provided about MEXQ in this research is limited to those present in the published literature.

2 Authors did not provide the complete list of items for each subscore.

3 Because I do not have the 105 MEXQ questions, I cannot provide information about whether the instrument included items about one's experiences of living or traveling abroad, having bicultural identity, or being a first- or second-generation immigrant.

4 Some participants entered the survey multiple times. In the raw data, there were 40 empty and 29 duplicate entries. Empty entries were eliminated. When an individual filled out the survey more than one time, the first completed survey entry was retained and the later entry (or entries) by the same individual were deleted. After this procedure, the final sample size was 318.

5 The mean frequency, duration, and breadth of MCE were computed by using the participants' responses to the 9 MCE activities retained at the end of the exploratory factor analysis.

6 Eight outlier responses were 75, 81, 101, 102, 107, 124, 132, and 151. When the outliers were included in the analysis, the average number of cultures exposed was 12.3 (*SD* = 20.8).

7 Six outlier responses were 52, 54, 56, 60, 63, and 96. When the outliers were included in the analysis, the average number of cultures interacted was 10.6 (*SD* = 13.6).

8 The survey was completed multiple times from the same 36 IP addresses, resulting in 37 duplicate entries. In these cases, I kept the first completed survey entry and deleted the later entry (or entries) from the same IP address. The resulting sample size was 326.

9 In this study, 330 individuals were officially recruited and paid via Amazon Mechanical-Turk. At the end of the study, the survey was completed 324 times. However, the survey was entered 39 more times after the recruitment was over. These entries included six that were previously paid for, and the rest of the 33 entries were not paid for. Out of the 39 late entries, 26 were duplicate cases from the same IP addresses and 13 were full and new completions. The duplicate entries were eliminated, and 13 new cases were included in the dataset. However, it was not possible to identify which of these 13 individuals were paid (or not), because the Qualtrics dataset did not list the worker IDs used on Amazon Mechanical-Turk system.

10 Five outlier responses were 62, 65, 85, 92, and 161. When the outliers were included, the average number of cultures exposed increased to 9.6 (*SD* = 16.1).

11 One outlier response was 233. When this outlier was included, the average number of cultures interacted was 5.8 (*SD* = 14.4).

12 Some participants entered the survey multiple times. In the raw data, there were 26 empty and 6 duplicate entries. Empty entries were eliminated. When an individual filled out the survey more than one time, the first completed survey entry was retained and the later entry (or entries) by the same individual were deleted. After this procedure, the final sample size was 268.

13 Nine outlier responses were 33, 36, 36, 37, 40, 40, 44, 45, and 54. When outliers were included in the analysis, the average number of cultures exposed became 6.2 (*SD* = 8.8).

14 Six outlier responses were 47, 48, 48, 51, 56, and 92. When these responses were included in the analysis, the average number of cultures interacted became 9.1 (*SD* = 11.9).

Tables

Table 1: List of previous research that examined MCE construct

ID	Investigation summary	MCE definition	Related constructs / literature used to explain MCE construct	Operationalization / Measurement of MCE
Endicott, Bock, & Narvaez (2003)	Examination of the relationships among MCE, moral reasoning and intercultural sensitivity	Experiences with and attitudinal openness toward diverse groups including ethnic minorities, immigrants, resident aliens, women, men, homosexuals, and a range of political and religious orientations.	None	Multicultural Experiences Questionnaire (MEXQ; 105 items; α not reported)
Leung & Chiu (2008)	Examination of the interactive effects of MCE and openness to experience on creative potential	No specific definition	None	Multicultural Experience Scale (MES; particular α in this study is not reported)
Leung, Maddux, Galinsky, & Chiu (2008)	Review of the research investigating the relationship between MCE and creativity	"All direct and indirect experiences of encountering or interacting with the elements and/or members of foreign cultures" (p. 169)	Bilingualism, first- or second-generation immigrants, group diversity, civilizations that open themselves to outside influences	Not applicable
Leung & Chiu (2010)	Effect of MCE on creative performance; relationship between MCE and creativity-supporting processes; and moderating effects of need for closure and existential terror	No specific definition	Bilingualism, first- or second-generation immigrants, group diversity, civilizations that open themselves to outside influences	Study 1: Multicultural exposure manipulation with PowerPoint presentation Studies 2-5: Multicultural Experience Scale (MES; 8 items; α = .71 to .65)
Narvaez & Hill (2010)	Examination of the relationships between MCE and moral judgment and mindsets	Defined intercultural encounters as "encounters in which a person is exposed to different or unfamiliar cultural practice or perspective" (p. 44)	Intercultural experience; diverse experience; interaction diversity	Multicultural Experiences Questionnaire (MEQ; 15 items, α = 0.80)

Table 2: Responses to the question "What do you think MCE is?" (Study 1a)

Participant's response	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
It's a culture, which is mixed with more than two cultures. For example, I'm originally from Korea but I've lived in the U.S. for several years. I understand American culture now and at the same time I still have Korean inherity. Sometimes, I behave or think as Korean or American because I know both cultures	Biculturalism; MCE in general	N/A - different construct N/A - general definition
A multicultural experience includes an experience that involves people who are of different backgrounds, interacting with each other.	MCE in general	Multicultural interaction items in general.
I think multicultural experience is when you experience many different cultures. You get a sense of taste and feel for it and you learn from it.	MCE in general; multicultural learning	N/A - general definition N/A - different construct
Multicultural experience is when you practice activities from more than one culture. It is the influence from different cultural aspects that you experience. The experience does not need to be one that you enjoy.	MCE in general	N/A - general definition
Bassicaly it is experiencing other culture in a society. In case of our country we have only opportunity to experience one or two culture, but here it's a lot to experience.	MCE in general; diversity	N/A - general definition N/A - different construct
It is that when people have experience in more than 1 culture.	MCE in general	N/A - general definition
A multicultural experience is when you are placed in a setting where more than one culture interact.	MCE in general	N/A - general definition
Experiencing many cultures and being in a diverse area or situation where you learn and witness cultures other than your own.	MCE in general; diversity	Multicultural exposure items in general.
It is when you experiencing a culture shock and/or adapt to new culture as part of your own. Also, some people mary a person of a different culture, and the traditions in the household are multicultural, therefore the child that grows up in the family is considered to have multiple cultures.	MCE; acculturation	Dating people from different cultures.
A multicultural experience is when you are exposed to many different types of cultures other than your own.	MCE in general	Multicultural exposure items in general.
Being in contact with people from cultures other than your own.	MCE in general	Multicultural interaction items in general.

Note. MCE in general = A general MCE definition, thus covered by MExA items; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 2 (continued): Responses to the question "What do you think MCE is?" (Study 1a)

Participant's response	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
To experience and absorb information about various different cultures.	MCE in general; multicultural learning	N/A - general definition N/A - different construct
Rather than experience one culture, when people experience more than one culture. For example, when people immigrant to different country they experience multicultural lives.	MCE in general; immigration	N/A - general definition N/A - different construct
I think multicultural experience is experiencing different cultures and learning about these cultures in our lives.	MCE in general; multicultural learning	N/A - general definition N/A - different construct
Multicultural experience which I think is when I am in a different country and meeting people from different part of the world. That includes working, studying and living with them. You will find different culture has their own understanding on thing. Sometimes it's interesting but sometimes you might get into trouble.	MCE; traveling/living abroad	Working with people from different cultures. Studying with people from different cultures. Being roommates with people from different cultures.
Live in different countries or have a lot of friends come from different country.	MCE; living abroad	Becoming friends with people from different cultures.
Closely interacting with people who are of different culture than mine.	MCE in general	Multicultural interaction items in general.
Multicultural experience is when people from different nationality get together in a formal gathering.	MCE	Attending international social events.
I think that multicultural experience is when you have a chance to get to know and experience some other cultures besides your own. When you are open into other cultural views, but your own one. There are many cultures and languages around us.	MCE in general; multicultural learning; openness	N/A - general definition N/A - different construct
Multicultural experience is experience for different cultural. In New York City, there are many different county people and different cultural. When we make friends from different country, and we will know parts of their cultural. Later, the parts of cultural become your multicultural experience.	MCE in general; diversity; multicultural learning	Becoming friends with people from different cultures.
Multicultural experience is when people with certain values and beliefs go into another setting where life, customs, and beliefs are viewed differently. When these two cultures meet, they exchange their values and experience new ways of life.	MCE in general	N/A - general definition

Note. MCE in general = A general MCE definition, thus covered by MExA items; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 3: Responses to the question "What makes up and what is included in your MCEs?" in Study 1a

Participant's response	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
I lived in Korea for more than 20 years but since I'm pretty open-minded, I don't feel unfamiliar with American culture even though I've only lived here for 2 years. As I said earlier, I don't behave 100 percent either Korean or American. It's true that I can't understand every American culture and how I act or think is different from Korean who lived there for their entire life because I've been exposed to another culture.	Living abroad; biculturalism; open-mindedness; multicultural exposure in general	N/A - general definition N/A - different construct
People of different cultures discussing today's news and what's going on in different parts of the world right now.	MCE	Following news about foreign countries. Talking to people from different cultures. Socializing with people from different cultures.
College is a part of it since there are many people at Baruch from different cultures. We can learn a lot from speaking with them. Going to certain restaurants and stores give you a taste of different languages and food from other cultures.	MCE; multicultural learning	Talking to people from different cultures. Eating at restaurants that serve foreign cuisines. Shopping at stores that sell foreign ethnic products. Hearing people around you talking in foreign languages. Seeing foreign people around you.
Language reflects mostly on my multicultural experiences. When I choose to learn Spanish and Chinese, I am experiencing the aspects of the cultures that speaks those languages. Holidays and food also make up my multicultural experiences. When I celebrate certain holidays from another culture, I am taking part of it.	MCE	Learning/studying a foreign language. Speaking a foreign language with people from that foreign culture. Participating in celebrations of different cultures. Eating at restaurants that serve foreign cuisines.
Bassicaly it is combination of two or three totaly other culture so, truly some times it's enjoying & some times its disturbing.	Biculturalism; multiculturalism	N/A - different construct
Included the person whose nationality is the other but was born & raised in another country. Like: Chinese-American people… .	Biculturalism; immigration	N/A - different construct

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 3 (continued): Responses to the question "What makes up and what is included in your MCEs?" (Study 1a)

Participant's response	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
Living in Brooklyn makes it easy to experience different languages, food, customs, mannerisms, etc. I grew up in a Russian/Chinese/Italian/American neighborhood so all of their influence have given me a better understanding of people's perspectives.	MCE; diversity	Multicultural exposure and interaction items in general. Eating at restaurants that serve foreign cuisines. Seeing foreign people around you. Socializing with people from different cultures.
Language, accents, personalities, behaviors, customs & traditions, food. Speaking with other people w/different cultures or just observing them.	MCE; cultural knowledge	Hearing people around you talking in foreign languages. Talking to people from different cultures. Seeing foreign people around you. Eating at restaurants that serve foreign cuisines.
Traditions, rituals, humor, respect for elderly all make up culture and each one has a different approach to it. My high school friends were of different nationalities, and we would learn of each person's family problems/benefits, foods, etc. when we hang out together.	MCE	Becoming friends with people from different cultures. Sharing personal problems with people from different cultures. Sharing feelings with people from different cultures. Dining with people with different cultures. Going out with people from different cultures.
Being exposed to many different cultures and learning about them, such as celebrating different cultural holidays with friends or learning some of their languages.	MCE; multicultural learning	Multicultural exposure items in general. Participating in celebrations of different cultures. Becoming friends with people from different cultures. Socializing with people from different cultures. Learning/studying a foreign language.
Attending ceremonies and events that are significant, noticing different foods & symbols with different meanings in various cultures.	MCE; multicultural learning	Attending international social events. Participating in celebration of different cultures. Attending to festivals/parades of different cultures. Seeing foreign people around you.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 3 (continued): Responses to the question "What makes up and what is included in your MCEs?" (Study 1a)

Participant's response	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
Interacting with those of different cultural background and observing those who are of different cultures. Also, consuming food of different cultural origins is part of my multicultural experience.	MCE	Multicultural interaction items in general. Seeing foreign people around you. Eating at restaurants that serve foreign cuisines.
For example for me, I born in Korea and I went to Canada and now live in U.S. So I experience three distict cultures.	Living abroad; immigration; MCE in general	N/A - general definition
Communicating people of different cultures. Learning different cultures in all sorts of ways in our daily life. (I would say media is one of the cultural tools that impacted me the most, it is the most convenient and fastest way for us to learn about another culture that we do not know. e.g. Youtube.)	MCE; multicultural learning	Talking to people from different cultures. Communicating via writing/video with people from different cultures. Following media of foreign countries and cultures. Watching videos (on YouTube, etc.) about foreign countries/places.
I'm from China, so when I decided to come to America for college, I kind of ready for these multicultural experiences. For example, studying is very different. In my country, we spend most of the time doing exercise and exams. However, in U.S. professors think class participation is more important and I believe professors should notice not many chinese students willing to answer questions in class.	Traveling/living abroad; multicultural learning / knowledge	N/A - different construct
I imigrate to other country when I was 17.	Immigration	N/A - different construct
Studying with people from different cultures; having assignments to do with people from other countries; working closely with those people; having fun / have a dinner; go to movies with people from different cultures; learning about their cultures from people of diff. cultures.	MCE; multicultural learning	Studying with people from different cultures. Working with people from different cultures. Going out with people from different cultures. Dining with people from different cultures. Going to movies with people from different cultures. Talking to people from different cultures. Socializing with people from different cultures.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 3 (continued): Responses to the question "What makes up and what is included in your MCEs?" (Study 1a)

Participant's response	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
Friends, family relatives and classmates	MCE	Becoming friends with people from different cultures.
In the US we have a chance to experience other cultures, and there are many of them. I have a lot of friends that are from other cultures and thanks to it I have a chance to know more about it by visiting their families, their institutions, and differently spending a free time with them. Each culture is different, but I am glad we have a chance to get to know more about each other views and traditions.	MCE; diversity; multicultural learning	Multicultural interaction items in general. Becoming friends with people from different cultures. Socializing with people from different cultures.
My multicultural experience includes American culture, Spanish culture. Also some different cultural from different parts of China.	MCE in general	N/A - general definition
The food you eat, the traditions you have, the people you meet, the activities your involved in.	MCE; cultural knowledge	Eating at restaurants that serve foreign cuisines. Multicultural interaction and exposure items in general.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4: MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
My roommate celebrate Thanksgiving with her friends by eating turkey. Same year, she celebrated Chu-seok, Korean traditional holiday by making special food with friends as well.	MCE	Participating in celebrations of different cultures.
One of my friends was born here but his parents are from Korea. His first language is English and he used to join an American club and die his hair blonde or white. But when he meets elders he knows how to respect in Korean culture, such as using formal way to speak or bow when greeting.	MCE; Biculturalism	Becoming friends with people from different cultures.
Multicultural Festival - People of different cultures brought their homemade delicacies to share. Shows were performed to show how different people live growing up with different customs.	MCE; multicultural learning	Participating in festivals/parades of different cultures. Eating at restaurants that serve foreign cuisines.
Discussed how different our lives were from people living in Israel. Life is much different on the other side of the world. There are places in Israel that are being bombed several times a day and people live there and have to survive.	MCE	Following news about foreign countries. Talking to people from different cultures.
My friend invited some kids over to his house. Everyone was born in a different country. So, we all prepared food to see how much differently it is made and some of the special recipes used by a specific culture.	MCE	Socializing with people from different cultures. Dining with people from different cultures. Watching cooking shows about foreign cuisines.
In freshman, my Japanese went on a trip to a Japanese restaurant for dinner. We went through the greetings and what to say before and after a meal in Japanese. We ate a bento with chopsticks. It was really interesting Japanese food in a traditional Japanese restaurant.	MCE	Eating at restaurants that serve foreign cuisines. Dining with people from different cultures. Talking to people from different cultures. Socializing with people from different cultures.
The person in charge of my summer job program took us to a Mexican-Chinese restaurant for lunch. The menu had many different Mexican and Chinese foods and it has both Mexican and Chinese people working together.	MCE; fusion	Eating at restaurants that serve foreign cuisines. Seeing foreign people around you.
In my communications class, we had many group discussion where we talked about ourselves and our cultures. For one of our speeches, we had to basically introduce ourselves to the class and talk about something we think is interesting. We learned a lot about different people and cultures from that.	MCE; multicultural learning	Talking to people from different cultures. Socializing with people from different cultures. Attending international social events.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4 (continued): MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
My friends and classmates would often bring food or buy food of their own culture. We would share the food to experience another culture's food and its differences or similarities. It would lead to discussions about our own culture.	MCE; multicultural learning	Socializing with people from different cultures. Dining with people from different cultures. Eating at restaurants that serve foreign cuisines. Talking to people from different cultures.
During a festival in little Italy in Manhattan, the most prominent culture is the Italian culture. However there are other venders from another culture such as the Chinese and Native Americans. They sold their distinctive jewleries which I bought.	MCE	Participating in festivals/parades of different cultures. Shopping at stores that sell foreign ethnic products.
I talked to a tourist about the definition of a moon cake and its feature in its holiday, which is distinctive to the Chinese culture. I shared part of my multicultural experience with a person from another culture.	MCE; multicultural learning	Talking to people from different cultures. Socializing with people from different cultures.
It was my friend's home. They called it "Dunga Puja." It came from Indian culture. Previously I had that experience of this programm. But after comming in USA & see its totaly different. They arrange a big woman statu & they obey it for 10 days. Its happened on last week of September to October.	MCE; multicultural learning	Socializing with people from different cultures. Participating in festivals/parades of different cultures. Participating in celebrations of different cultures.
My another experience was one of my friends home. It was "Eid day" the big religious day for Muslims. in this day they are went for mosque early morning. after that they eat together some special food which is made by women in home.	MCE; multicultural learning	Socializing with people from different cultures. Participating in festivals/parades of different cultures. Participating in celebrations of different cultures.
My 3rd experience is my own cultural experience. It is called "Pohela Boishakh" the Bangla new year. Bassicaly in this day all of the Bangla culture people wear the cultural dress & they try to make a … *[illegible]* in the morning by holding some … *[illegible]* and some ... *[illegible]* of animal.	Own cultural knowledge	N/A - different construct
I have experienced with the American culture when that people tend to go back home on Thanksgiving day.	MCE	Watching different cultures' cultural events without interacting with people

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4 (continued): MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
I went to a school (college) that was mainly made up of mostly American-born people with backgrounds from many different cultures.	MCE; diversity	Becoming friends with people from different cultures. Studying with people from different cultures. Working with people from different cultures. Socializing with people from different cultures.
I went to a Turkish restaurant and ate Turkish food. It was delicious.	MCE	Eating at restaurants that serve foreign cuisines.
Went to my friend's house last week. She is Norwegian. Ate Norwegian food & heard the language.	MCE	Hearing people around you taking in foreign languages. Dining with people from different cultures.
Being/commuting on NYC subways, I notice so many different people, cultures & lifestyles. Sometimes I see people looking at others who are different from them rudely or speak to them different than they would if it were someone of their own culture.	MCE; diversity; out-group bias	Seeing foreign people around you.
Multicultural day is a day where people put up posters about their culture, bring foods related to their culture & share history, stories & learn about different cultures & countries.	MCE; multicultural learning	Attending international social events. Participating in festivals/parades of different cultures. Socializing with people from different cultures.
Attending classes w/ other students who have different cultures demonstrates how diverse Baruch is. People answer questions & think differently. Many students who aren't from the U.S don't know about some history or pop-culture as Americans do.	MCE; diversity; cultural knowledge	Seeing foreign people around you.
I was a part of a Jewish community. We sat down as a group of young adults and discussed heritage. Even though we were all Jewish, everyone was different: Bukharski, ashkinazi, goeski, hassiddic, and so on. Many traditions are done in a different manner, views on life are looked at from different perspective.	Sub-cultural differences / experience	N/A - different construct
I'm experiencing multicultural experiences here in Baruch all the time. In class we sometimes talk about things that happen outside of US, and there is usually a person in class who can prove it. Ex: in some countries a nod (Yes) is understood as No.	MCE; diversity; cultural knowledge	Talking to people from different cultures. Following news about foreign countries.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4 (continued): MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
A friend of mine, who is muslim invited me for a dinner at his house, I went, and saw how everything they do that I do at a table is somehow different. They are a modern family but they follow their traditions. Cups have no … [*illegible*], all plates are very old, knifes are large size and are silver.	MCE	Dining with people from different cultures. Seeing foreign people around you. Socializing with people from different cultures.
The … [*illegible*] at Baruch was celebrating their holiday, Sukkot, and offered free food from various countries affiliated with Judaism. They explained the purpose of the holiday as well.	MCE	Participating in festivals/parades of different cultures. Participating in celebrations of different cultures.
It was my friend's birthday and we went to a Korean BBQ to celebrate it. I was exposed to various types of Korean food.	MCE	Eating at restaurants that serve foreign cuisines.
My friend invited me over to her house and she made me authentic indian tea.	MCE	Dining with people from different cultures. Socializing with people from different cultures.
Everytime someone would enter or leave the room, they would tap & kiss a little white roll by the door. They call it a "Mezuza" and it is a small prayer rolled up.	MCE; cultural knowledge	Watching different cultures' celebrations.
It was a Birthday party and all the food was hispanic food.	MCE	Dining with people from different cultures. Socializing with people from different cultures.
It was a friday afternoon and the dollar store was closed because the owners had left to pray.	MCE; cultural knowledge	Seeing foreign people around you.
I went into a chinese supermarket and I was exposed to various interactions between chinese individuals, I observed them interact, pick out items, and etc.	MCE	Shopping at stores that sell foreign ethnic products. Seeing foreign people around you. Hearing people around you talking in foreign languages.
I went to my friend's house who is of Chinese origin. I interacted with his siblings and parents.	MCE	Talking to people from different cultures. Socializing with people from different cultures.
I was on the subway and I was observing people of different cultures and backgrounds interact with each other.	MCE; diversity	Seeing foreign people around you.
Each country has their own culture so the way people react or respond to a particular issue or behavior is different. In Korea, we don't really make a strong eye contact when young people talk with older people. But Western countries tend to, and prefer eye contact when talking with somebody else to show that they are listening.	Cultural differences / knowledge	N/A - different construct

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4 (continued): MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
In Korea, between or among girl friends, we like to hold each others hands when we walk. It is really common thing to do. But in Western countries, when girls hold their hands and walk, people tend to see girls as lovers, not friends. (this is just a extreme opinion, not all people think like this)	Cultural differences / knowledge	N/A - different construct
In Korea, when we write our name in red color, people don't like it because we use red to write passed away people's name. But Chinese people like red and I saw my teacher using red color to write students' name	Cultural differences / knowledge	N/A - different construct
Met a new friend in Baruch who's an Indian.	MCE	Becoming friends with people from different cultures.
Listened to a Russian demonstrating how to make a Russian Cuisine.	MCE	Watching cooking shows about foreign cuisines.
Listened to Korean music, watched Korea drama.	MCE	Listening to music of foreign cultures. Watching foreign TV channels.
When I was in my psychology class and professor David ask a question and his purpose was actually see the behavior among different culture. Most of students who raise their hands were American and I believe none of them were chinese.	MCE; cultural differences / knowledge	Seeing foreign people around you.
Some of my friends ask me to join them for a party at around 1 a.m. and my parents wouldn't let me go and my friends couldn't understand why I have to ask my parents for permission since I am already 22.	MCE; cultural differences / knowledge	Talking to people from different cultures. Sharing personal problems with people from different cultures.
In U.S.A., I have to eat lunch or dinner in school	Cultural differences	N/A - different construct
Have to speak English while I was talking to others.	MCE	Speaking a foreign language with people from that foreign culture.
People has different understandings of things due to different cultural background.	Cultural differences	N/A - different construct
We had assignment to do.	MCE	Studying with people from different cultures. Working with people from different cultures.
I had a dinner with my friends	MCE	Dining with people from different cultures.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4 (continued): MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
I and people I used to study with had a dinner together.	MCE	Dining with people from different cultures. Studying with people from different cultures.
I was going to college on the train and I saw an African-man playing the tuba. It was very entertaining. I never heard music played like that before, the beat was really nice and I felt like dancing.	MCE	Seeing foreign people around you. Listening to music of foreign cultures.
I went to join a club in college. They had brought food so I was asked to join in the eating. Majority of the people were Asian and they were eating sushi at that time. I don't like sushi, but I wanted to feel part of the group so I quietly ate with them.	MCE	Attending international social events. Participating in festivals/parades of different cultures. Dining with people from different cultures.
I was doing a stress workshop with my group. Our audiance was a mixed group so the way we gave them information about stress management in a way that everyone could relate to.	Individual / cultural differences	N/A - different construct
An example would be when I was in the subway, I have seen ladies who had their faces covered and also their hair. I saw some people looking at them, because people always look at something that is different than their are familiar with.	MCE; out-group bias; cultural differences	Seeing foreign people around you.
I was at my friend's wedding. She is from India. I have seen everyone dressed up in beautiful colorful clothes and gold jewelry. Everybody was so happy. Parents were blessing them in their own traditional way.	MCE	Participating in celebrations of different cultures. Becoming friends with people from different cultures. Seeing foreign people around you.
I went to a church with my friend–to her church. She is from Russia. I've noticed that the prist was dressed up, differently that a prist in my church. There was a wedding there, and what I liked the people were holding crowns above the "bride" and her "husband" head.	MCE	Participating in celebrations of different cultures. Becoming friends with people from different cultures. Seeing foreign people around you.
Studying in the class with many classmate from different country and speaking different language. And trying learning their language.	MCE	Studying with people from different cultures. Hearing people around you talking in foreign languages. Learning/studying a foreign language.
Living with an American family. Talking. Eating. Sleeping.	MCE	Being roommates with people from different cultures. Talking to people from different cultures. Dining with people from different cultures.

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 4 (continued): MCE Examples provided by the participants (Study 1a)

MCE Example	Captured construct(s)	Overlapping MExA item(s) (if any activity/relationship is specifed by the participant)
I go to the restaurants from country, trying to taste different favor.	MCE	Eating at restaurants that serve foreign cuisines.
I was in Greece with my friends. We were hanging out during the day going to different stores. Then in the afternoon, the stores closed due to the heat of the sun.	MCE; traveling abroad; cultural knowledge	Seeing foreign people around you. Watching different cultures' social occasions.
I watch the food channel a lot because I like to cook. I learned lots of new dishes of different cultures to make.	MCE	Watching cooking shows about foreign cuisines.
I was in my management class when I learned of lots of new cultures and how they live their lives –some simple and some very important. Such as I learned that in Iceland it is deemed disrespectful to leave tips. Also, in India cows are sacred and in fact there are more cows in India than cars in the USA.	Multicultural learning; cultural differences / knowledge	N/A - different construct

Note. MCE in general = A general MCE definition; N/A - different construct = Not applicable, because participant defined a different construct; N/A - general definition = Not applicable, because participant did not mention a specific activity or relationship.

Table 5: Additional questions suggested by the participants (Study 1a)

Additional questions	Assessment
Do you think you can avoid multicultural experience in your life?	Does not measure MCE.
Are you interested in participating different cultures' activities?	Does not measure MCE.
Which culture are you interested in and want to learn?	Does not measure MCE.
Which culture you were not able to understand so far and why?	Does not measure MCE.
Why do people sometimes only surround themselves with people of the same culture?	Does not measure MCE.
How are people all the same yet so different?	Does not measure MCE.
How are neighboring countries cultures so different?	Does not measure MCE.
How often do you want to interact with people from a different culture?	Does not measure MCE.
How often due to school do you interact with different cultures?	Overlaps with current multicultural interaction items; e.g. Talking to people from different cultures. Studying with people from different cultures. Socializing with people from different cultures
How often have you gone to the house of someone from a different culture?	Considered for inclusion in MExA
How often have you read a book in a different language?	Overlaps with current multicultural exposure items: Reading books about foreign cultures. Reading books about foreign cultures people.
How often have you watched a movie or show in a different language?	Overlaps with current multicultural exposure items: Watching foreign TV channels
How often have you written or spoken in a different language?	Overlaps with current multicultural interaction items: Speaking a foreign language with people from different cultures. Communicating via writing with people from different cultures.
How often have you worn clothes from a different culture?	Considered for inclusion in MExA
How frequently do you play sports from another culture?	Considered for inclusion in MExA

Table 5 (continued): Additional questions suggested by the participants (Study 1a)

Additional questions	Assessment
How often do you use products from another culture?	Considered for inclusion in MExA
How often do you write in a different language?	Overlaps with current multicultural interaction items: Speaking a foreign language with people from different cultures. Communicating via writing with people from different cultures.
How frequently do you have meetings with people from different cultures?	Overlaps with current multicultural interaction items: Working with people from different cultures.
How comfortable do you feel with being around people from different cultures?	Does not measure MCE.
Can we chang our food habit to exchange our multicultural experience?	Does not measure MCE.
Can we change our clothing by considering other multicultural peoples wearing?	Does not measure MCE.
Is it possible to invite all of the person from different culture to celebrate a specific New Year?	Does not measure MCE.
Is there a problem if we respect all of the cultures & their religion?	Does not measure MCE.
Can we exchange our … *[illegible]* with other cultural people about living?	Does not measure MCE.
Do you think you can do <u>everything</u> by right hand?	Does not measure MCE.
Do U live with your parents even though you are not married?	Does not measure MCE.
Do you really need a male child in order to keep your generation?	Does not measure MCE.
What do you do in the holiday such as your cultural New Year?	Does not measure MCE.
Can you think of anything that make you proud of your culture?	Does not measure MCE.
What are the types of food that you've tried from different cultures?	Overlaps with current multicultural interaction item: Eating at restaurants that serve foreign cuisines.
Which countries have you lived in other than the US?	Attempts to measure the special case of living abroad.
Do you wear clothing from other cultures?	Considered for inclusion in MExA

Table 5 (continued): Additional questions suggested by the participants (Study 1a)

Additional questions	Assessment
How accepting are you of other cultures?	Does not measure MCE.
Do you visit other countries?	Attempts to measure the special case of living abroad.
Why would you interact with other cultures? (Because of school/work/family?)	Does not measure MCE.
Were you born in a country other than the one you live in now?	Attempts to measure the special case of immigration.
What is your nationality/heritage?	Attempts to measure the special case of immigration.
Do you enjoy/welcome learning about different cultures?	Does not measure MCE.
How often do you try new things (food, clothes, accessories) of a different culture?	*Re: Food:* Overlaps with the item: Eating at restaurants that serve foreign cuisines. *Re: Clothing, accessories:* Considered for inclusion in MExA.
How does diversity affect our life?	Does not measure MCE.
Do you think multicultural environment is a healthy environment?	Does not measure MCE.
Should people from other cultures get engaged/married? Why/why not?	Does not measure MCE.
How would your parents feel if you married someone who is not of your culture?	Does not measure MCE.
How often do you relate to people of different culture from your own?	Overlaps with current multicultural interaction items; e.g. Talking to people from different cultures. Studying with people from different cultures. Socializing with people from different cultures
Which would you rather prefer: befriending someone who is of the same culture from you or different? Why/why not?	Does not measure MCE.
Which culture do you want to know more about?	Does not measure MCE.
Which culture do you enjoy?	Does not measure MCE.
What type of foods do you cook?	Overlaps with current multicultural interaction item: Eating at restaurants that serve foreign cuisines.

Table 5 (continued): Additional questions suggested by the participants (Study 1a)

Additional questions	Assessment
Have you ever attended an event of another culture?	Overlaps with current multicultural interaction items: Attending international social events. Attending to festivals/parades of different cultures. Participating in celebrations of different cultures.
Have you ever felt jealous of another culture?	Does not measure MCE.
Have you ever felt angry towards another culture?	Does not measure MCE.
Have you ever compared your culture to another culture?	Does not measure MCE.
Have you ever desired more information about another culture?	Overlaps with current multicultural exposure item: Doing research about foreign cultures or countries.
How would people think about the convenience of having multicultural experience nowadays compare to the old days	Does not measure MCE.
What's the impact or advantages of having many multicultural experiences (according to one's opinion)	Does not measure MCE.
If the specific multicultural experience doesn't not involve direct interaction with people/event from that specific culture does it count as an experience or not? (Since I believe reading a text book about another culture shouldn't be counted as experiencing a culture at all.)	Does not measure MCE.
Feeling uncomfortable talking to people from different culture or not?	Does not measure MCE.
Compare your own culture to others which one do you prefer?	Does not measure MCE.
Do your multicultural experiences get you in some kind of trouble?	Does not measure MCE.
Do you have family members which come from different countries	Attempts to measure the special case of immigration.
How often do you participate in different cultures events	Overlaps with current multicultural interaction items: Attending international social events. Attending to festivals/parades of different cultures. Participating in celebrations of different cultures.

Table 5 (continued): Additional questions suggested by the participants (Study 1a)

Additional questions	Assessment
What is your understanding of multiculture?	Does not measure MCE.
What is your favorite food beside the food of your homeland	Does not measure MCE.
Why you involve in the multicultural experiences.	Does not measure MCE.
Did you ever go on a trip with people of other nations?	Considered for inclusion in MExA.
Did you ever host any kind of event for people of other cultures?	Overlaps with current multicultural interaction items: Attending international social events. Attending to festivals/parades of different cultures. Participating in celebrations of different cultures.
How many friends of other nations do you have?	Overlaps with current multicultural exposure item: Becoming friends with people from different cultures.
How many people of other cultures do you personally know?	Overlaps with current multicultural exposure item: Becoming friends with people from different cultures.
Is it hard for you to interact effectively with people of other nations?	Does not measure MCE.
How do you pray?	Does not measure MCE.
How do you get married?	Does not measure MCE.
What types of foods do you eat?	Overlaps with current multicultural interaction item: Eating at restaurants that serve foreign cuisines.
How do you stay healthy?	Does not measure MCE.
What/Who is God?	Does not measure MCE.

Table 5 (continued): Additional questions suggested by the participants (Study 1a)

Additional questions	Assessment
School	Exposures and/or interactions at school are covered by current MExA items.
Church	Exposures and/or interactions at church are covered by current MExA items.
Have you had feelings for anyone of a different culture?	Covered by the item: Dating people from different cultures.
Did you grow up with families of a different culture?	Attempts to measure the special case of immigration. Partially overlaps with the item: Being roommates with people from different cultures.
Does your family allow you to marry someone of a different culture?	Does not measure MCE.
What was the experience that stuck with you from another culture?	Does not measure MCE.
Do you have lots of friends of different culture? Or are they mostly within your culture?	Does not measure MCE. Partially overlaps with current multicultural exposure item: Becoming friends with people from different cultures.

Table 6: Responses to the question asking about any types of MCEs that participants believe are missing in the current questionnaire (Study 1a)

Participant's response	Assessment
I think globalization has something to do with multiculture. If you mention or ask some questions about globalization, I think you could find some connections and correlation.	Does not measure MCE
Experiences like wearing clothes from a different culture, going to a different country or going to a wedding for someone in a different culture.	*Re: Clothing:* Considered for inclusion in the MExA. *Re: Traveling abroad:* Attempts to measure MCE via special case of traveling abroad. *Re: Weddings:* Overlaps with the current item: Participating in celebrations of different cultures.
How people use their multicultural experience	Does not measure MCE
Is it possible to consider all culture & their peoples in the same scale & position?	Does not measure MCE
Marriage	Overlaps with the item: Dating with people from different cultures.
I would say there is a lot of misunderstanding issues of multicultural experience, like, same words or gestures mean complete different thing and those issues cause a lot of problem in daily lifes.	Does not measure MCE
Different food from multicultural experience or habits.	Overlaps with the item: Eating at restaurants that serve foreign cuisine.
Food, religion, politics, love, marraige, nightlife such as meeting people at clubs or restaurants. - are you more friendly at night or during the day? Classroom learning of different cultures	*Re: Food:* Overlaps with the item: Eating at restaurants that serve foreign cuisines. *Re: Love/Marriage:* Overlaps with the item: Dating with people from different cultures. *Re: Nightlife:* Overlaps with the items: Going out with people from different cultures; going to movies with people from different cultures; dining with people from different cultures. *Re: Politics:* Participant did not specify an activity or relationship. *Re: Religion:* Does not measure MCE. *Re: Classroom learning:* Does not measure MCE.

Table 7: The correlations among the frequency, duration, and breadth scores and overall scores (Study 1a)

Scores	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ME-Frequency	1												
2. ME-Breadth	-.00	1											
3. ME-Duration	.12	-.09	1										
4. MI-Frequency	.63**	.04	.02	1									
5. MI-Breadth	.12	.44	.03	.41	1								
6. MI-Duration	.23	-.03	.67**	.32	.21	1							
7. MCE-Frequency	.92**	.02	.09	.88**	.28	.30	1						
8. MCE-Breadth	.01	.86**	-.10	.23	.84	.04	.12	1					
9. MCE-Duration	.20	-.07	.91**	.19	.13	.92**	.21	-.03	1				
10. Overall ME	.65**	.50*	.60**	.39	.21	.48*	.60**	.42	.60**	1			
11. Overall MI	.44	.19	.35	.79**	.72**	.71**	.66**	.48*	.59**	.52*	1		
12. Overall MCE	.60**	.42	.49*	.68**	.54*	.66**	.70**	.56*	.63**	.86**	.88**	1	
13. Foreign language	.32	-.08	-.11	.05	-.01	-.23	.22	-.08	-.19	.12	-.09	-.01	1

Note. Foreign language = Number of foreign languages spoken; MCE = Multicultural experience; ME = Multicultural exposure; MI = Multicultural interaction. ** $p < .01$; * $p < .01$

Table 8: Correct categorization frequencies and agreement rates for items (Study 1b)

	ITEM	Correct categorizations	Agreement rate (%)
ME1	Hearing people around you talking in foreign languages (other than your primary language)	34	0.80
ME2	Watching movies about foreign cultures	39	0.91
ME3	Watching movies that take place in different cultures	40	0.93
ME4	Watching videos (on YouTube, etc.) about foreign countries/places	40	0.93
ME5	Watching cooking shows about foreign cuisines	39	0.91
ME6	Watching documentaries about different cultures	41	0.95
ME7	Reading books about foreign cultures	37	0.86
ME8	Reading books about foreign people	36	0.84
ME9	Seeing foreign people around you (without talking to them or interacting with them)	37	0.86
ME10	Listening to music of foreign cultures	37	0.86
ME11	Eating at restaurants that serve foreign cuisines	26	0.60
ME12	Doing research about foreign cultures or countries	36	0.84
ME13	Learning/studying a foreign language	21	0.49
ME14	Shopping at stores that sell foreign ethnic products	32	0.74
ME15	Following media of foreign countries and cultures	36	0.84
ME16	Reading newspapers of foreign countries	34	0.80
ME17	Reading magazines of foreign countries	40	0.93
ME18	Following news about foreign countries	40	0.93
ME19	Seeing art of foreign cultures	36	0.84
ME20	Watching plays/opera about foreign cultures	39	0.91
ME21	Seeing architecture of foreign cultures	37	0.86
ME22	Seeing sculpture of foreign cultures	39	0.91
ME23	Seeing paintings of foreign cultures	40	0.93
ME24	Seeing paintings by foreign artists	39	0.91
ME25	Watching foreign TV channels	40	0.93

Note. Items with less than 0.75 agreement rate are highlighted.

Table 8 (continued): Correct categorization frequencies and agreement rates for items (Study 1b)

	ITEM	Correct categorizations	Agreement rate (%)
ME26	Watching different cultures' social occasions (e.g. family gatherings, funerals) on TV	35	0.81
ME27	Watching different cultures' celebrations (e.g. festivals, parades) on TV	40	0.93
ME28	Watching different cultures' cultural events (e.g. national holiday ceremonies) without interacting with people	40	0.93
MI1	Talking to people from different cultures	42	0.98
MI2	Talking to foreigners	40	0.93
MI3	Socializing with people from different cultures	43	1
MI4	Becoming friends with people from different cultures	40	0.93
MI5	Going to movies with people from different cultures	40	0.93
MI6	Going to parties with people from different cultures	39	0.91
MI7	Dining with people from different cultures	40	0.93
MI8	Going out with people from different cultures	41	0.95
MI9	Studying with people from different cultures	36	0.84
MI10	Working with people from different cultures	39	0.91
MI11	Dating people from different cultures	40	0.93
MI12	Being roommates with people from different cultures	36	0.84
MI13	Sharing personal problems with people from different cultures	36	0.84
MI14	Sharing feelings with people from different cultures	40	0.93
MI15	Working on resolving issues with people from different cultures	36	0.84
MI16	Attending international social events	33	0.77
MI17	Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	41	0.95

Note. Items with less than 0.75 agreement rate are highlighted.

Table 8 (continued): Correct categorization frequencies and agreement rates for items (Study 1b)

	ITEM	Correct categorizations	Agreement rate (%)
MI18	Communicating via video with people from different cultures	38	0.88
MI19	Talking on the phone with people from different cultures	39	0.91
MI20	Becoming friends on social networking websites with people from different cultures	40	0.93
MI21	Speaking a foreign language with people from that foreign culture	39	0.91
MI22	Participating in festivals/parades of different cultures	30	0.70
MI23	Participating in celebrations of different cultures	30	0.70
MI24	Attending festivals/parades of different cultures	26	0.60

Note. Items with less than 0.75 agreement rate are highlighted.

Table 9: Means, standard deviations and factor loadings of items (from principal axis factoring with direct oblimin rotation) in the initial exploratory factor analysis (Study 2)

Item	*M*	*SD*	F1	F2	F3	F4	F5	F6	F7	F8
Hearing people around you talking in foreign languages (other than your primary language)	5.17	1.187	-.032	.165	.666	.037	-.026	.061	-.053	.014
Watching movies about foreign cultures	3.48	1.277	.659	.002	.099	.076	-.026	-.061	.001	.001
Watching movies that take place in different cultures	3.87	1.190	.696	.008	.385	-.124	.094	-.064	.093	-.054
Watching videos (on YouTube, etc.) about foreign countries/places	3.55	1.365	.498	.102	.049	.039	-.123	.114	-.179	.123
Watching cooking shows about foreign cuisines	2.91	1.466	.472	-.020	-.073	-.003	.086	.120	.096	.112
Watching documentaries about different cultures	2.97	1.224	.482	-.117	-.003	.243	.103	.099	-.018	.084
Reading books about foreign cultures	2.85	1.313	.379	.025	-.121	.433	-.092	-.074	-.087	-.140
Reading books about foreign people	2.98	1.368	.460	-.002	-.015	.310	-.058	.028	-.023	-.155
Seeing foreign people around you (without talking to them or interacting with them)	5.18	1.315	.059	-.033	.732	.102	.051	-.044	.070	.001
Listening to music of foreign cultures	4.08	1.459	.537	-.068	.342	-.143	-.210	.084	.082	-.097
Doing research about foreign cultures or countries	2.94	1.239	.547	-.056	-.038	.156	.261	.033	-.051	.165
Shopping at stores that sell foreign ethnic products	3.73	1.407	.414	.005	.198	.087	.001	.032	.069	.104
Following media of foreign countries and cultures	3.34	1.487	.477	.074	-.002	.010	.029	.408	-.087	-.148
Reading newspapers of foreign countries	2.59	1.516	.312	-.006	-.122	.276	-.418	.100	-.014	-.190
Reading magazines of foreign countries	2.54	1.388	.348	-.054	-.149	.347	-.313	.064	.038	-.079
Following news about foreign countries	3.69	1.502	.286	.004	.027	.010	.006	.587	-.027	-.011
Seeing art of foreign cultures	3.00	1.250	.006	-.018	-.030	.742	.146	.075	-.107	.035
Watching plays/opera about foreign cultures	2.42	1.375	.266	-.125	-.076	.486	-.196	-.150	.137	-.036
Seeing architecture of foreign cultures	3.24	1.380	.237	-.112	.018	.328	.047	.284	.048	.106
Seeing sculpture of foreign cultures	2.85	1.275	.017	-.139	.017	.781	.042	-.011	.101	-.040

Note. *M* = Mean; *SD* = Standard deviation. Factor loadings: F1 = Factor 1; F2 = Factor 2; F3 = Factor 3; F4 = Factor 4; F5 = Factor 5; F6 = Factor 6; F7 = Factor 7; F8 = Factor 8

Table 9 (continued): Means, standard deviations and factor loadings (from principal axis factoring with direct oblimin rotation) of items in the initial exploratory factor analysis (Study 2)

Item	*M*	*SD*	F1	F2	F3	F4	F5	F6	F7	F8
Seeing paintings of foreign cultures	2.90	1.259	-.108	.016	.012	.882	-.038	-.092	-.050	.009
Seeing paintings by foreign artists	2.96	1.253	-.238	-.080	.082	1.077	.025	-.082	.017	-.098
Watching foreign TV channels	3.19	1.661	.598	-.073	.050	-.058	-.310	.107	-.006	.028
Watching different cultures' social occasions (e.g. family gatherings, funerals) on TV	2.76	1.380	.702	-.002	-.136	-.057	.065	.046	.040	-.106
Watching different cultures' celebrations (e.g. festivals, parades) on TV	2.99	1.327	.917	.073	-.090	-.117	.052	-.104	-.195	-.017
Watching different cultures' cultural events (e.g. national holiday ceremonies) without interacting with people	2.92	1.345	.757	-.054	-.091	.016	-.089	-.061	-.066	-.008
Talking to people from different cultures	4.78	1.267	-.160	.744	.166	.024	.003	.115	-.224	-.013
Talking to foreigners	4.29	1.427	.083	.536	.031	-.072	-.125	.055	-.155	.011
Socializing with people from different cultures	4.50	1.338	-.206	.924	.083	-.020	.095	-.017	-.183	-.097
Becoming friends with people from different cultures	4.19	1.328	.038	.750	-.044	-.107	-.004	.029	-.065	.088
Going to movies with people from different cultures	3.01	1.405	.151	.609	-.159	-.096	.050	-.065	.193	.206
Going to parties with people from different cultures	3.22	1.480	-.268	.622	-.069	.086	.005	.121	.302	.219
Dining with people from different cultures	3.55	1.351	.002	.676	.008	-.162	.061	.058	.236	.112
Going out with people from different cultures	3.75	1.433	.124	.672	.014	-.200	.169	-.049	.230	.102
Studying with people from different cultures	4.05	1.501	-.047	.606	.027	.007	-.256	.015	-.137	.119
Working with people from different cultures	4.32	1.469	-.090	.639	.097	.029	-.004	-.144	-.083	.109
Dating people from different cultures	2.59	1.619	-.020	.312	-.004	.069	.077	-.059	.444	.055
Being roommates with people from different cultures	2.17	1.610	-.067	.090	.003	.262	-.022	.009	.554	-.027

Note. *M* = Mean; *SD* = Standard deviation. Factor loadings: F1 = Factor 1; F2 = Factor 2; F3 = Factor 3; F4 = Factor 4; F5 = Factor 5; F6 = Factor 6; F7 = Factor 7; F8 = Factor 8

Table 9 (continued): Means, standard deviations and factor loadings (from principal axis factoring with direct oblimin rotation) of items in the initial exploratory factor analysis (Study 2)

Item	*M*	*SD*	F1	F2	F3	F4	F5	F6	F7	F8
Sharing personal problems with people from different cultures	3.42	1.582	.090	.806	-.123	-.118	.084	-.065	.093	-.216
Sharing feelings with people from different cultures	3.74	1.527	-.020	.842	-.071	-.045	.027	-.020	.119	-.221
Working on resolving issues with people from different cultures	3.55	1.520	.102	.583	-.049	.047	-.101	-.148	-.015	.040
Attending international social events	2.55	1.370	.131	.250	-.125	.144	-.046	-.056	.085	.327
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	4.31	1.512	-.116	.922	-.028	.041	.081	-.043	-.110	-.196
Communicating via video with people from different cultures	2.48	1.455	.083	.436	-.192	-.017	-.092	-.073	.238	.068
Talking on the phone with people from different cultures	3.69	1.479	-.157	.760	-.080	-.048	-.138	.091	.096	-.117
Becoming friends on social networking websites with people from different cultures	3.80	1.518	.194	.574	-.026	.001	.095	-.126	-.088	.059
Speaking a foreign language with people from that foreign culture	3.65	1.842	.104	.277	.018	.025	-.444	-.012	-.038	.136

Note. *M* = Mean; *SD* = Standard deviation. Factor loadings: F1 = Factor 1; F2 = Factor 2; F3 = Factor 3; F4 = Factor 4; F5 = Factor 5; F6 = Factor 6; F7 = Factor 7; F8 = Factor 8

Table 10: Elimination of similar items from MExA (Study 2)

	Item	Item Category	Primary Factor Loaded on	Factor Loading	Action
Item Group #1	Watching movies that take place in different cultures	Exposure	Factor 1	.696	Retained
	Watching movies about foreign cultures	Exposure	Factor 1	.659	Eliminated
	Watching videos (on YouTube, etc.) about foreign countries/places	Exposure	Factor 1	.498	Eliminated
	Watching documentaries about different cultures	Exposure	Factor 1	.482	Eliminated
	Watching cooking shows about foreign cuisines	Exposure	Factor 1	.472	Eliminated
Item Group #2	Watching foreign TV channels	Exposure	Factor 1	.598	Retained
	Following media of foreign countries and cultures	Exposure	Factor 1	.477	Eliminated
Item Group #3	Watching different cultures' celebrations (e.g. festivals, parades) on TV	Exposure	Factor 1	.917	Retained
	Watching different cultures' cultural events (e.g. national holiday ceremonies) without interacting with people	Exposure	Factor 1	.757	Eliminated
	Watching different cultures' social occasions (e.g. family gatherings, funerals) on TV	Exposure	Factor 1	.702	Eliminated
Item Group #4	Talking to people from different cultures	Interaction	Factor 2	.744	Retained
	Talking to foreigners	Interaction	Factor 2	.536	Eliminated
Item Group #5	Socializing with people from different cultures	Interaction	Factor 2	.924	Retained
	Becoming friends with people from different cultures	Interaction	Factor 2	.750	Eliminated

Table 10 (continued): Elimination of similar items from MExA (Study 2)

	Item	Item Category	Primary Factor Loaded on	Factor Loading	Action
Item Group #6	Dining with people from different cultures	Interaction	Factor 2	.676	Retained
	Going out with people from different cultures	Interaction	Factor 2	.672	Eliminated
	Going to parties with people from different cultures	Interaction	Factor 2	.622	Eliminated
	Going to movies with people from different cultures	Interaction	Factor 2	.609	Eliminated
Item Group #7	Working with people from different cultures	Interaction	Factor 2	.639	Retained
	Studying with people from different cultures	Interaction	Factor 2	.606	Eliminated
Item Group #8	Sharing feelings with people from different cultures	Interaction	Factor 2	.842	Retained
	Sharing personal problems with people from different cultures	Interaction	Factor 2	.806	Eliminated
	Working on resolving issues with people from different cultures	Interaction	Factor 2	.583	Eliminated
Item Group #9	Communicating via writing (e.g. emails, text messages, instant messaging) with people from different cultures	Interaction	Factor 2	.922	Retained
	Talking on the phone with people from different cultures	Interaction	Factor 2	.760	Eliminated
	Becoming friends on social networking websites with people from different cultures	Interaction	Factor 2	.574	Eliminated
	Communicating via video with people from different cultures	Interaction	Factor 2	.436	Eliminated

Table 11: Factor loadings in second exploratory factor analysis conducted with thirteen items (Study 2)

Item	Factor	
	MI	**ME**
Watching movies that take place in different cultures	.039	.620
Reading books about foreign people	-.120	.710
Listening to music of foreign cultures	-.070	.613
Doing research about foreign cultures or countries	-.101	.601
Shopping at stores that sell foreign ethnic products	.049	.517
Watching foreign TV channels	-.202	.771
Watching different cultures' celebrations (e.g. festivals, parades) on TV	-.109	.749
Talking to people from different cultures	.763	-.092
Socializing with people from different cultures	.943	-.256
Dining with people from different cultures	.681	-.047
Working with people from different cultures	.661	-.093
Sharing feelings with people from different cultures	.734	-.025
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	.843	-.102

Note. ME = Multicultural exposure; MI = Multicultural interaction.

Table 12: Total variance explained by final nine MCE activities in MExA (Study 2)

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	3.510	39.003	39.003	3.023	33.594	33.594	2.762
2	1.909	21.207	60.210	1.430	15.887	49.481	2.551
3	.712	7.916	68.126				
4	.629	6.994	75.120				
5	.606	6.737	81.857				
6	.520	5.775	87.632				
7	.435	4.829	92.461				
8	.364	4.049	96.509				

Table 13: Factor loadings in the final exploratory analysis with nine MCE activities (Study 2)

Item	Factor	
	MI	**ME**
Watching movies that take place in different cultures	.073	.596
Reading books about foreign people	-.061	.637
Listening to music of foreign cultures	-.065	.655
Watching foreign TV channels	-.214	.798
Watching different cultures' celebrations (e.g. festivals, parades) on TV	-.063	.712
Talking to people from different cultures	.737	-.066
Socializing with people from different cultures	.958	-.252
Sharing feelings with people from different cultures	.671	.014
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	.858	-.088

Note. ME = Multicultural exposure; MI = Multicultural interaction.

Table 14: Final items in the MExA

How frequently in your life do you engage (or have you engaged) in the following activities?

1	2	3	4	5	6
Never	Once a year or less frequently	2-11 times a year	1-3 times a month	1-6 days a week	Every day or multiple times a day

1	Watching movies that take place in different cultures
2	Reading books about foreign people
3	Listening to music of foreign cultures
4	Watching foreign TV channels
5	Watching different cultures' celebrations (e.g. festivals, parades) on TV

6. To which cultures are you exposed via the activities listed in questions 1-5**?**

7. All of the above activities are examples of potential exposure to individuals or elements of different cultures. Please try to think back and remember: When was the first time you were exposed to different cultures via these types of activities?

1	2	3	4	5	6
Never; I have NOT been exposed to different cultures via these types of activities	0-1 year ago	1-2 years ago	2-5 years ago	5-10 years ago	10 years ago or more

How frequently in your life do you engage (or have you engaged) in the following activities?

1	2	3	4	5	6
Never	Once a year or less frequently	2-11 times a year	1-3 times a month	1-6 days a week	Every day or multiple times a day

8	Talking to people from different cultures
9	Socializing with people from different cultures
10	Sharing feelings with people from different cultures
11	Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures

12. With which cultures you interact via the activities listed in questions 8-11**?**

13. All of the above activities are examples of potential interactions with different cultures and their members. Please try to think back and remember: When was the first time you started interacting with different cultures via these types of activities?

1	2	3	4	5	6
Never; I have NOT been exposed to different cultures via these types of activities	0-1 year ago	1-2 years ago	2-5 years ago	5-10 years ago	10 years ago or more

Table 15: Item-to-total statistics for the MCE items in the frequency subscale (Study 2)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching movies that take place in different cultures	30.57	51.559	.530	.776
Reading books about foreign people	31.46	51.397	.447	.785
Listening to music of foreign cultures	30.36	50.370	.460	.784
Watching foreign TV channels	31.25	49.299	.428	.791
Watching different cultures' celebrations (e.g. festivals, parades) on TV	31.45	50.785	.502	.779
Talking to people from different cultures	29.66	51.202	.509	.778
Socializing with people from different cultures	29.94	50.975	.485	.781
Sharing feelings with people from different cultures	30.70	48.557	.524	.775
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	30.13	48.035	.559	.770

Table 16: Item-total statistics of the 13-item MExA (Study 2)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching movies that take place in different cultures	-.2302207	36.850	.459	.740
Reading books about foreign people	-.2285607	38.279	.332	.753
Listening to music of foreign cultures	-.2146680	38.097	.348	.752
Watching foreign TV channels	-.2233106	38.643	.308	.756
Watching different cultures' celebrations (e.g. festivals, parades) on TV	-.2309685	37.781	.378	.749
Talking to people from different cultures	-.2075808	35.646	.562	.729
Socializing with people from different cultures	-.2065258	36.159	.527	.733
Sharing feelings with people from different cultures	-.2350387	36.007	.537	.732
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	-.2115606	35.938	.543	.731
Multicultural exposure - Breadth item	-.2039674	39.963	.216	.764
Multicultural interaction – Breadth item	-.2080962	38.083	.367	.750
Multicultural exposure - Duration item	-.2167730	39.966	.195	.767
Multicultural interaction – Duration item	-.2214782	39.267	.254	.761

Table 17: The correlations among the frequency, duration, and breadth scores and overall scores (Study 2)

Scores	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. ME-Frequency	1													
2. ME-Breadth	-.04	1												
3. ME-Duration	-.03	.23**	1											
4. MI-Frequency	.30**	.18**	.15**	1										
5. MI-Breadth	.06	.52**	.19**	.35**	1									
6. MI-Duration	-.02	.27**	.68**	.22**	.21**	1								
7. MCE-Frequency	.78**	.10	.09	.83**	.27**	.14*	1							
8. MCE-Breadth	-.00	.90**	.22**	.29**	.84**	.27**	.19**	1						
9. MCE-Duration	-.02	.27**	.92**	.20**	.22**	.91**	.12*	.27**	1					
10. Overall ME	.51**	.65**	.66**	.34**	.43**	.50**	.52**	.61**	.64**	1				
11. Overall MI	.14*	.45**	.46**	.73**	.74**	.66**	.57**	.66**	.61**	.59**	1			
12. Overall MCE	.35**	.61**	.59**	.63**	.66**	.63**	.63**	.72**	.67**	.87**	.91**	1		
13. Foreign language	.19**	-.15*	-.09	-.01	-.16*	-.11	.10	-.20**	-.12	-.03	-.15*	-.11	1	
14. Age	-.06	.03	.09	-.12*	.03	.12*	-.12	.05	.12	.03	.01	.02	.01	1

Note. Foreign language = Number of foreign languages spoken; MCE = Multicultural experience; ME = Multicultural exposure; MI = Multicultural interaction. ** $p < .01$; * $p < .01$

Table 18: MANOVA results regarding gender differences in MExA scores (Study 2)

			Male		Female	
Scores	*F*	*p*	*M*	*SD*	*M*	*SD*
ME – Frequency score	3.570	.328	3.29	.99	3.50	1.03
ME – Breadth score	.081	.060	10.31	13.63	8.73	11.71
MI – Frequency score	6.904	.009	4.06	1.20	4.49	1.10
MI – Breadth score	.455	.501	8.93	10.17	9.24	10.43
MCE – Frequency score	8.134	.005	3.68	.88	3.99	.85
MCE – Breadth score	.030	.862	9.62	10.47	8.98	9.64
MCE – Duration score	.330	.566	4.89	1.26	4.78	1.11
Overall ME score [a]	.454	.501	-.02	.62	-.02	.55
Overall MI score [a]	1.749	.187	-.09	.71	.03	.68
Overall MCE score [a]	1.539	.216	-.05	.72	.02	.63
Number of foreign languages	.962	.328	1.53	1.04	1.59	.95

Note. [a] Computed by using standardized scores. MCE = Multicultural experience; ME = Multicultural exposure; MI = multicultural interaction.

Table 19: Gender differences in the frequency items (Study 2)

					Responses to the frequency questions:					
	χ^2	*df*	*p*		Never	Once a year or less	2-11 times a year	1-3 times month	1-6 days a week	Every day or multiple times a day
ME Items:										
Watching movies that take place in different cultures	5.451	5	.363	M[a]:	1.4%	12.1%	20.6%	37.6%	21.3%	7.1%
				F[b]:	4.0%	8.0%	25.0%	30.7%	23.3%	9.1%
Reading books about foreign people	10.675	5	.056	M[a]:	14.2%	34.8%	19.9%	22.0%	5.7%	3.5%
				F[b]:	13.6%	22.7%	26.1%	18.8%	12.5%	6.2%
Listening to music of foreign cultures	8.437	5	.134	M[a]:	3.5%	17.7%	19.1%	22.7%	22.0%	14.9%
				F[b]:	3.4%	11.4%	18.2%	16.5%	25.0%	25.6%
Watching foreign TV channels	11.616	5	.040	M[a]:	21.3%	25.5%	16.3%	16.3%	7.1%	13.5%
				F[b]:	17.6%	18.8%	20.5%	13.1%	18.8%	11.4%
Watching different cultures' celebrations on TV	7.411	5	.192	M[a]:	10.6%	36.2%	24.1%	16.3%	9.2%	3.5%
				F[b]:	13.6%	23.3%	25.0%	23.3%	9.7%	5.1%

Note. M = Males; F = Females; ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 19 (continued): Gender differences in the frequency items (Study 2)

					Responses to the frequency questions:					
	χ^2	*df*	*p*		Never	Once a year or less	2-11 times a year	1-3 times month	1-6 days a week	Every day or multiple times a day
MI Items:										
Talking to people from different cultures	7.178	5	.208	M[a]:	1.4%	7.8%	14.2%	17.7%	27.0%	31.9%
				F[b]:	0.6%	3.4%	9.7%	17.0%	26.7%	42.6%
Socializing with people from different cultures	16.458	5	.006	M[a]:	3.5%	7.8%	17.7%	23.4%	27.7%	19.9%
				F[b]:	0.0%	6.8%	14.8%	17.0%	24.4%	36.9%
Sharing feelings with people from different cultures	10.695	5	.058	M[a]:	10.6%	17.7%	24.1%	20.6%	16.3%	10.6%
				F[b]:	8.5%	9.7%	18.2%	24.4%	19.3%	19.9%
Communicating via writing with people from different cultures	12.282	5	.031	M[a]:	5.0%	12.8%	17.7%	19.1%	22.7%	22.7%
				F[b]:	5.7%	4.0%	17.6%	17.6%	19.9%	35.2%

Note. M = Males; F = Females; ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 20: Gender differences in the duration scores (Study 2)

				Responses to the duration questions:					
	χ^2	*df*	*p*	Never	0-1 Year Ago	1-2 Years Ago	2-5 Years Ago	5-10 Years Ago	10 Years Ago or More
ME – Duration	11.001	5	.051	Males[a]: 2.1%	8.5%	4.3%	18.4%	14.2%	52.5%
				Females[b]: 0.6%	8.5%	4.0%	23.3%	25.6%	38.1%
MI – Duration	4.794	5	.442	Males[a]: 0.7%	8.6%	7.1%	19.3%	19.3%	45.0%
				Females[b]: 0.6%	5.7%	5.7%	24.1%	26.4%	37.4%

Note. ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 21: Item-to-total statistics in confirmatory factor analysis (Study 3)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching movies that take place in different cultures	24.23	63.862	.536	.857
Reading books about foreign people	24.93	63.051	.535	.857
Listening to music of foreign cultures	24.40	58.357	.613	.850
Watching foreign TV channels	25.04	62.215	.464	.864
Watching different cultures' celebrations (e.g. festivals, parades) on TV	25.20	63.646	.548	.856
Talking to people from different cultures	23.72	57.913	.686	.842
Socializing with people from different cultures	23.97	57.598	.679	.843
Sharing feelings with people from different cultures	24.28	56.463	.721	.839
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	24.15	56.229	.614	.851

Table 22: Item-total statistics of the full MExA (Study 3)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching movies that take place in different cultures	-.0497229	47.919	.535	.819
Reading books about foreign people	-.0495989	47.730	.552	.817
Listening to music of foreign cultures	-.0451645	46.971	.611	.813
Watching foreign TV channels	-.0603831	49.506	.415	.827
Watching different cultures' celebrations (e.g. festivals, parades) on TV	-.0530723	47.985	.533	.819
Talking to people from different cultures	-.0468618	46.664	.640	.811
Socializing with people from different cultures	-.0460095	47.094	.606	.813
Sharing feelings with people from different cultures	-.0485841	46.708	.635	.811
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	-.0566144	47.622	.562	.817
Multicultural exposure - Breadth item	-.0574830	51.456	.273	.837
Multicultural interaction – Breadth item	-.0442096	50.169	.374	.830
Multicultural exposure - Duration item	-.0587612	52.038	.237	.839
Multicultural interaction – Duration item	-.0626327	51.385	.284	.836

Table 23: Correlations among multicultural exposure and interaction scores and age (Study 3)

Scores	1	2	3	4	5	6	7	8	9	10	11	12	13	
1. ME-Frequency	1													
2. ME-Breadth	.20**	1												
3. ME-Duration	.18**	.20**	1											
4. MI-Frequency	.49**	.12**	-.01	1										
5. MI-Breadth	.19**	.47**	.19**	.29**	1									
6. MI-Duration	.10	.13**	.56**	.18**	.24**	1								
7. MCE-Frequency	.81**	.18**	.09	.91**	.29**	.17**	1							
8. MCE-Breadth	.23**	.93**	.22**	.21**	.77**	.20**	.25**	1						
9. MCE-Duration	.16**	.19**	.88**	.10	.25**	.89**	.14**	.24**	1					
10. Overall ME	.68**	.69**	.68**	.30**	.41**	.38**	.54**	.67**	.60**	1				
11. Overall MI	.37**	.34**	.35**	.71**	.73**	.68**	.65**	.56**	.59**	.52**	1			
12. Overall MCE	.58**	.62**	.57**	.60**	.63**	.61**	.69**	.72**	.67**	.87**	.87**	1		
13. Foreign language	.41**	.12*	-.06	.37**	.19**	-.01	.44**	.17**	-.04	.25**	.27**	.30**	1	
14. Age	-.11	-.05	.12*	-.20**	-.00	.08	-.19**	-.05	.11*	-.03	-.06	-.07	-.15*	1

Note. Foreign language = Number of foreign languages spoken; MCE = Multicultural experience; ME = Multicultural exposure; MI = Multicultural interaction. ** $p < .01$; * $p < .01$

Table 24: MANOVA results regarding gender differences in MExA scores (Study 3)

			Male		Female	
Scores	*F*	*p*	*M*	*SD*	*M*	*SD*
ME – Frequency score	.855	.356	2.77	.94	2.68	.98
ME – Breadth score	.808	.369	7.68	10.53	8.83	12.38
MI – Frequency score	.049	.825	5.35	1.13	5.39	1.22
MI – Breadth score	.908	.341	4.68	6.30	5.51	7.55
MCE – Frequency score	.355	.552	3.11	.96	3.07	1.03
MCE – Breadth score	1.135	.288	6.18	7.26	7.17	8.63
MCE – Duration score	.001	.969	5.24	1.04	5.28	1.12
Overall ME score [a]	.000	.991	.01	.63	.02	.71
Overall MI score [a]	.138	.711	-.02	.65	.03	.75
Overall MCE score [a]	.059	.809	-.00	.63	.03	.73
Number of foreign languages	1.184	.277	.73	.87	.63	.85

Note. [a] Computed by using standardized scores. MCE = Multicultural experience; ME = Multicultural exposure; MI = multicultural interaction.

Table 25: Gender differences in the frequency items (Study 3)

					Responses to the frequency questions:					
	χ^2	*df*	*p*		Never	Once a year or less	2-11 times a year	1-3 times month	1-6 days a week	Every day or multiple times a day
ME Items:										
Watching movies that take place in different cultures	7.194	5	.207	M[a]:	8.0%	11.9%	39.2%	27.8%	10.8%	2.3%
				F[b]:	4.1%	18.9%	41.2%	25.0%	6.8%	4.1%
Reading books about foreign people	4.237	5	.516	M[a]:	23.3%	31.2%	28.4%	10.8%	4.5%	1.7%
				F[b]:	15.5%	33.8%	31.8%	9.5%	7.4%	2.0%
Listening to music of foreign cultures	5.111	5	.402	M[a]:	14.8%	18.8%	27.3%	18.8%	11.9%	8.5%
				F[b]:	18.9%	25.7%	22.3%	13.5%	12.8%	6.8%
Watching foreign TV channels	5.559	5	.352	M[a]:	31.2%	23.9%	17.6%	17.6%	6.2%	3.4%
				F[b]:	35.1%	31.1%	11.5%	12.2%	6.8%	3.4%
Watching different cultures' celebrations on TV	8.129	5	.149	M[a]:	25.0%	35.8%	25.0%	8.0%	5.1%	1.1%
				F[b]:	24.3%	43.2%	25.7%	2.0%	2.7%	2.0%

Note. M = Males; F = Females; ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 25 (continued): Gender differences in the frequency items (Study 3)

					Responses to the frequency questions:					
	χ^2	*df*	*p*		Never	Once a year or less	2-11 times a year	1-3 times month	1-6 days a week	Every day or multiple times a day
MI Items:										
Talking to people from different cultures	1.372	5	.927	M[a]:	5.7%	14.8%	21.6%	23.9%	22.2%	11.9%
				F[b]:	5.4%	14.2%	26.4%	20.3%	20.9%	12.8%
Socializing with people from different cultures	3.697	5	.594	M[a]:	8.0%	19.3%	25.0%	19.9%	18.8%	9.1%
				F[b]:	8.1%	16.9%	27.7%	20.9%	12.8%	13.5%
Sharing feelings with people from different cultures	1.337	5	.931	M[a]:	13.1%	21.6%	26.1%	18.2%	13.6%	7.4%
				F[b]:	12.8%	23.6%	25.7%	16.2%	11.5%	10.1%
Communicating via writing with people from different cultures	4.838	5	.436	M[a]:	17.6%	15.9%	21.6%	13.1%	18.8%	13.1%
				F[b]:	20.3%	18.9%	16.2%	17.6%	12.8%	14.2%

Note. M = Males; F = Females; ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 26: Gender differences in the duration scores (Study 3)

				Responses to the duration questions:					
	χ^2	*df*	*p*		Never	0-1 Year Ago	1-2 Years Ago	2-5 Years Ago	5-10 Years Ago	10 Years Ago or More
ME – Duration	8.836	5	.116	Males[a]:	1.1%	4.0%	4.5%	10.8%	13.1%	66.5%
				Females[b]:	2.7%	6.8%	1.4%	4.7%	14.2%	70.3%
MI – Duration	3.937	5	.559	Males[a]:	2.9%	3.4%	6.3%	11.4%	20.0%	56.0%
				Females[b]:	3.4%	5.4%	2.7%	12.8%	16.2%	59.5%

Note. ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 27: Means, standard deviations, scale reliabilities, and inter-correlations among all main measures (Study 4)

Measures	*M*	*SD*	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. MCE-Freq.	4.18	.79	.80	1														
2. MCE-Brea.	6.47	6.48	.57	.08 (.05)	1													
3. MCE-Dur.	4.94	1.11	.72	.22 (.17)	.51 (.33)	1												
4. ME score[a]	-.01	.64	.76[b]	.65 (.51)	.76 (.50)	.80 (.59)	1											
5. MI score[a]	-.00	.70	.76[b]	.60 (.46)	.98 (.64)	.91 (.67)	.54 (.41)	1										
6. MCE score[a]	-.02	.68	.76[b]	.78 (.61)	1.03[c] (.68)	1.00 (.74)	1.05[c] (.80)	1.16[c] (.88)	1									
7. Cult. Intel.	4.65	.85	.91	.52 (.44)	.15 (.11)	.05 (.04)	.39 (.33)	.21 (.18)	.35 (.29)	1								
8. Mult. Ideo.	4.89	.84	.71	.12 (.09)	.25 (.19)	.25 (.18)	.19 (.14)	.32 (.24)	.30 (.22)	.16 (.13)	1							
9. Openness	3.64	.54	.73	.28 (.22)	.20 (.13)	.30 (.22)	.31 (.23)	.33 (.25)	.37 (.27)	.48 (.39)	.27 (.19)	1						
10. Self-estm.	2.99	.50	.85	.11 (.09)	.14 (.10)	.20 (.16)	.09 (.07)	.25 (.20)	.18 (.15)	.19 (.17)	.30 (.23)	.54 (.42)	1					
11. Growth	3.60	.75	.72	.12 (.09)	.11 (.09)	.09 (.07)	.10 (.08)	.14 (.10)	.16 (.12)	.19 (.15)	.24 (.17)	.35 (.25)	.26 (.20)	1				
12. Fixed	2.97	.92	.78	-.11 (-.09)	-.34 (-.23)	-.19 (-.14)	-.20 (-.15)	-.28 (-.21)	-.30 (-.23)	-.09 (-.08)	-.24 (-.18)	-.28 (-.21)	-.18 (-.14)	-.42 (-.31)	1			
13. Closed-m.	2.96	.63	.65	-.31 (-.22)	-.34 (-.21)	-.15 (-.10)	-.32 (-.23)	-.30 (-.21)	-.38 (-.27)	-.26 (-.20)	-.46 (-.31)	-.51 (-.35)	-.31 (-.23)	-.35 (-.24)	.32 (.23)	1		
14. Language	1.59	.96	n/a[d]	.25 (.22)	.04 (.03)	-.13 (-.11)	.09 (.08)	.02 (.02)	.07 (.06)	.30 (.29)	.06 (.05)	.08 (.07)	.01 (.01)	.13 (.11)	.02 (.01)	-.07 (-.06)	1	
15. Age	21.84	4.02	n/a[d]	-.06 (-.05)	.05 (.04)	.11 (.09)	.11 (.10)	-.01 (-.01)	.04 (.04)	.13 (.13)	.13 (.11)	.07 (.06)	.04 (.04)	.09 (.08)	.09 (.08)	-.07 (-.07)	-.08 (-.08)	1

Note. Correlations are corrected for the attenuation due to unreliability. Observed correlations are presented in parantheses on the next line. Closed-m. = Closed-mindedness; Cult. Intel. = Cultural intelligence; Fixed = Fixed mindset; Growth = Growth mindset; Language = Number of foreign languages spoken; Multi. Ideo. = Multicultural ideology; Openness = Openness to experience; Self-estm. = Global self-esteem. [a] Score computed by using standardized values. [b] Cronbach's alpha for the overall MExA is used. [c] Correlations are larger than 1.0 because corrected figures over estimated the perfect correlation of 1.0. [d] The correlations with 'Language' and 'Age' are only corrected for the attenuation due to unreliability in the other scale.

Table 28: Item-to-total statistics for the frequency subscale (Study 4)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching movies that take place in different cultures	33.17	41.802	.546	.772
Reading books about foreign people	33.88	41.226	.472	.780
Listening to music of foreign cultures	32.76	40.529	.467	.781
Watching foreign TV channels	33.49	39.913	.486	.779
Watching different cultures' celebrations (e.g. festivals, parades) on TV	33.78	41.750	.461	.782
Talking to people from different cultures	31.78	42.930	.501	.778
Socializing with people from different cultures	31.97	41.619	.527	.774
Sharing feelings with people from different cultures	32.60	39.759	.495	.778
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	32.32	40.046	.481	.780

Table 29: Item-total statistics of the full MExA (Study 4)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Watching movies that take place in different cultures	-.1742836	37.952	.405	.745
Reading books about foreign people	-.1689571	38.657	.359	.750
Listening to music of foreign cultures	-.1608154	38.109	.397	.746
Watching foreign TV channels	-.1834122	38.220	.389	.747
Watching different cultures' celebrations (e.g. festivals, parades) on TV	-.1805728	38.235	.393	.747
Talking to people from different cultures	-.1420087	36.197	.558	.729
Socializing with people from different cultures	-.1366680	36.065	.570	.727
Sharing feelings with people from different cultures	-.1704751	36.672	.523	.733
Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures	-.1375516	36.727	.513	.734
Multicultural exposure - Breadth item	-.1686242	41.240	.138	.772
Multicultural interaction – Breadth item	-.1663306	40.496	.201	.766
Multicultural exposure - Duration item	-.1446414	38.642	.351	.751
Multicultural interaction – Duration item	-.1580370	40.130	.231	.763

Table 30: MANOVA results regarding gender differences in measures (Study 4)

			Male		Female	
Scores	*F*	*p*	*M*	*SD*	*M*	*SD*
ME – Frequency score	.003	.956	3.56	.93	3.57	1.03
ME – Breadth score	.110	.740	5.21	6.75	4.95	5.52
MI – Frequency score	.376	.541	4.72	1.07	4.80	1.06
MI – Breadth score	1.179	.279	7.31	8.70	8.58	9.55
MCE – Frequency score	.190	.663	4.14	.80	4.18	.82
MCE – Breadth score	.373	.542	6.26	6.64	6.76	6.40
MCE – Duration score	.986	.322	4.81	1.21	4.95	1.06
Overall ME score [a]	.003	.955	-.01	.71	-.01	.60
Overall MI score [a]	2.101	.148	-.10	.73	.04	.69
Overall MCE score [a]	1.013	.315	-.07	.73	.02	.65
Number of foreign languages	.974	.325	1.62	.91	1.50	.97
Cultural intelligence	.553	.458	4.57	.86	4.65	.85
Multicultural ideology	7.852	.005	4.72	.82	5.01	.82
Openness to experience	1.832	.177	3.57	.55	3.66	.52
Self-esteem	3.599	.059	3.03	.52	2.91	.46
Growth mindset	.167	.683	3.57	.74	3.60	.74
Fixed mindset	7.846	.005	3.15	.88	2.83	.92
Closed-mindedness	.192	.662	2.99	.69	2.95	.57

Note. [a] Computed by using standardized scores. MCE = Multicultural experience; ME = Multicultural exposure; MI = multicultural interaction.

Table 31: Gender differences in the frequency items (Study 4)

					Responses to the frequency questions:					
	χ^2	*df*	*p*		Never	Once a year or less	2-11 times a year	1-3 times month	1-6 days a week	Every day or multiple times a day
ME Items:										
Watching movies that take place in different cultures	6.940	5	.225	M[a]:	1.7%	9.2%	27.5%	35.8%	20.0%	5.8%
				F[b]:	0.0%	8.8%	35.8%	32.4%	13.5%	9.5%
Reading books about foreign people	11.027	5	.051	M[a]:	13.3%	20.8%	30.0%	18.3%	14.2%	3.3%
				F[b]:	6.8%	28.4%	35.1%	16.9%	6.1%	6.8%
Listening to music of foreign cultures	4.014	5	.547	M[a]:	3.3%	9.2%	20.8%	28.3%	20.0%	18.3%
				F[b]:	3.4%	7.4%	18.2%	21.6%	22.3%	27.0%
Watching foreign TV channels	14.495	5	.013	M[a]:	10.8%	13.3%	20.8%	31.7%	19.2%	4.2%
				F[b]:	11.5%	12.8%	28.4%	23.6%	9.5%	14.2%
Watching different cultures' celebrations on TV	7.720	5	.172	M[a]:	8.3%	17.5%	36.7%	23.3%	10.8%	3.3%
				F[b]:	8.8%	18.9%	38.5%	20.9%	4.1%	8.8%

Note. M = Males; F = Females; ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 31 (continued): Gender differences in the frequency items (Study 4)

					Responses to the frequency questions:					
	χ^2	*df*	*p*		Never	Once a year or less	2-11 times a year	1-3 times month	1-6 days a week	Every day or multiple times a day
MI Items:										
Talking to people from different cultures	1.444	5	.837	M[a]:	0.0%	3.3%	6.7%	12.5%	27.5%	50.0%
				F[b]:	0.0%	1.4%	6.1%	11.6%	30.6%	50.3%
Socializing with people from different cultures	4.321	5	.504	M[a]:	0.0%	2.5%	11.7%	15.0%	25.8%	45.0%
				F[b]:	0.7%	4.1%	6.8%	12.8%	32.4%	43.2%
Sharing feelings with people from different cultures	5.503	5	.358	M[a]:	3.3%	11.7%	12.5%	23.3%	23.3%	25.8%
				F[b]:	4.7%	4.7%	15.5%	20.3%	26.4%	28.4%
Communicating via writing with people from different cultures	3.396	5	.639	M[a]:	1.7%	7.5%	11.7%	15.8%	30.0%	33.3%
				F[b]:	4.7%	6.8%	10.1%	14.2%	25.0%	39.2%

Note. M = Males; F = Females; ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Table 32: Gender differences in the duration scores (Study 4)

				Responses to the duration questions:					
	χ^2	*df*	*p*	Never	0-1 Year Ago	1-2 Years Ago	2-5 Years Ago	5-10 Years Ago	10 Years Ago or More
ME – Duration	2.401	5	.791	Males[a]: 0.8%	6.7%	7.5%	17.5%	19.2%	48.3%
				Females[b]: 0.0%	8.1%	4.7%	16.9%	20.9%	49.3%
MI – Duration	5.904	5	.316	Males[a]: 0.8%	9.2%	8.3%	18.3%	17.5%	45.8%
				Females[b]: 0.7%	4.1%	4.1%	23.0%	20.9%	47.3%

Note. ME = Multicultural exposure; MI = Multicultural interaction. [a] Percentages are within males. [b] Percentages are within females.

Figures

Figure 1: Scree plot in exploratory factor analysis with 13 frequency items (Study 2)

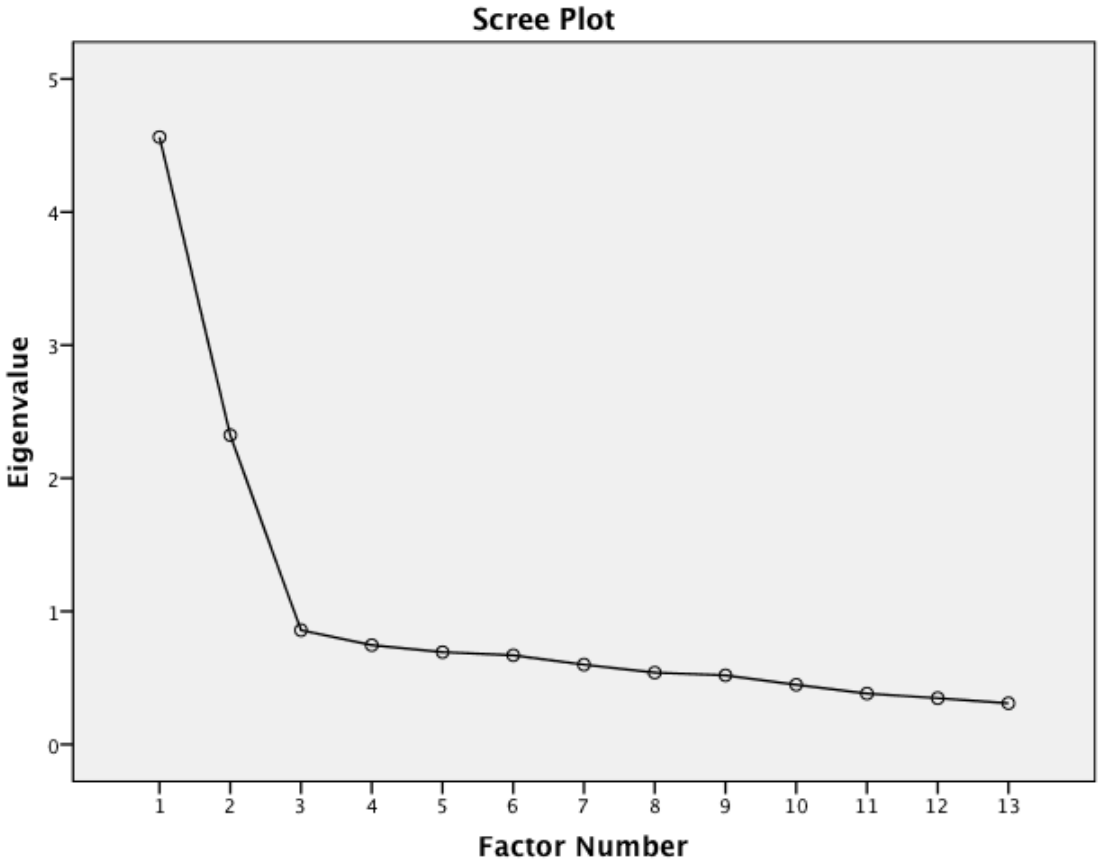


Figure 2: Scree plot in exploratory factor analysis with nine MCE items in the final MExA (Study 2)

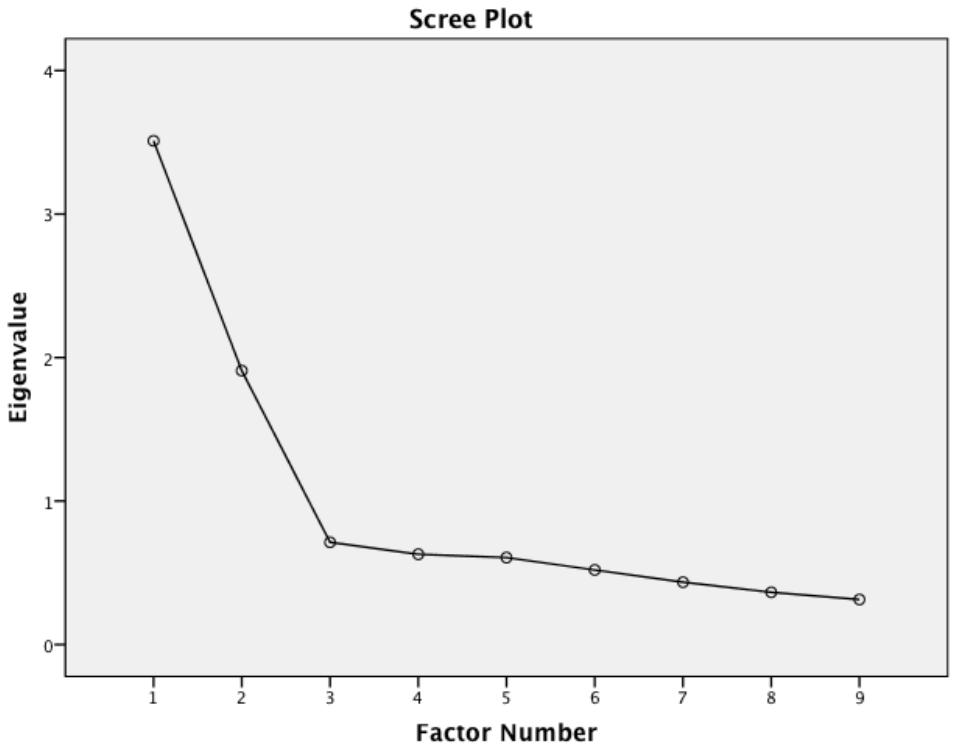
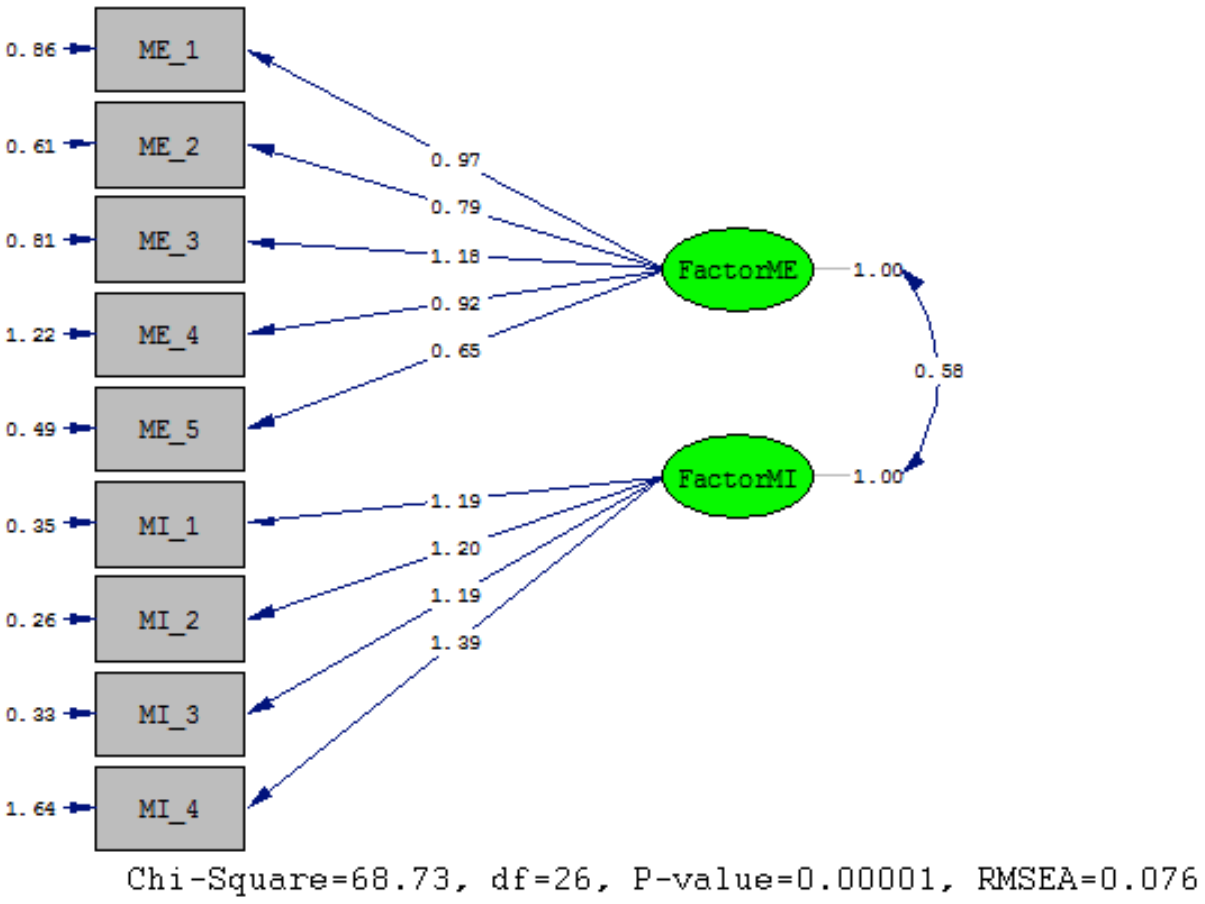
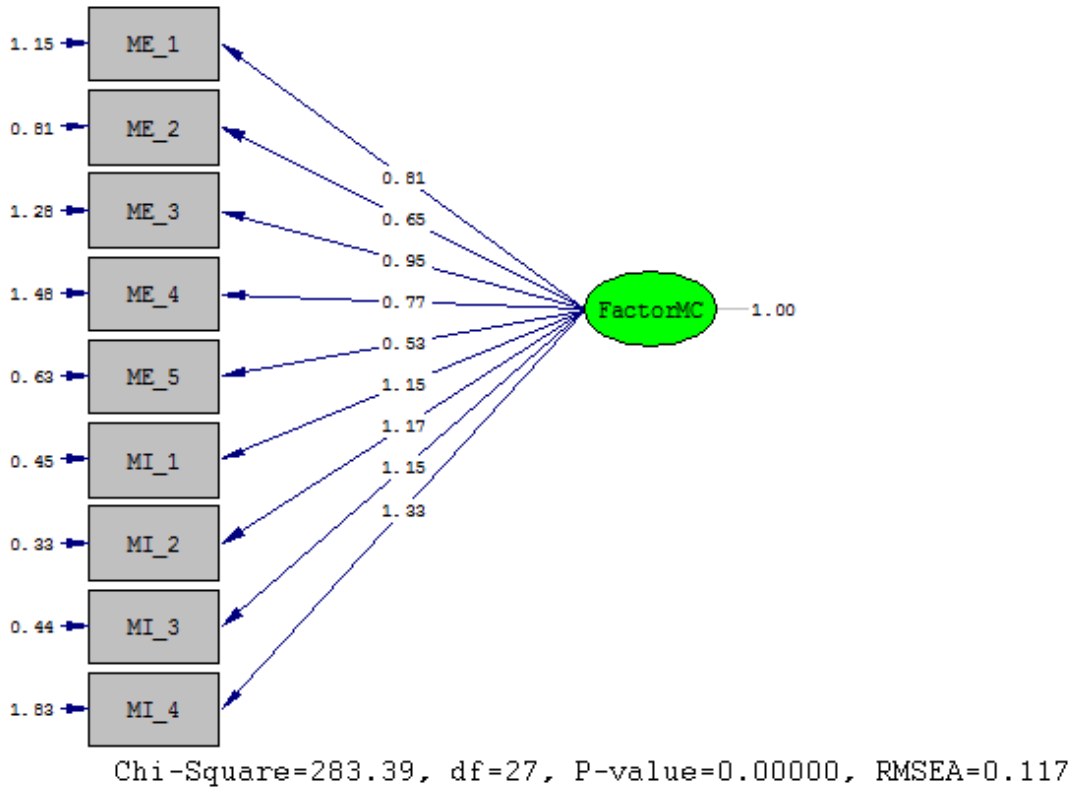


Figure 3: Path diagram the 2-factor model (Study 3)



Note. ME_1 – ME_5 = Multicultural exposure items 1-5; MI_1 – MI_4 = multicultural interaction items 1-4; FactorME = factor representing multicultural exposure; FactorMI = factor representing multicultural interaction.

Figure 4: Path diagram for the 1-factor model (Study 3)



Note. ME_1 – ME_5 = Multicultural exposure items 1-5; MI_1 – MI_4 = multicultural interaction items 1-4; FactorMC = factor representing multicultural experience.

Appendices

Appendix A: Multicultural Experience Questionnaire (MEQ; Narvaez & Hill, 2010)

Please answer these questions according to your experience.

1. I travel out of the country

1	2	3	4
Never	1-2 times in my life	3 or more times	Regularly

2. I want to travel outside of my country.

1	2	3	4	5
Not true at all				Very true

3. I speak well

1	2	3	4
1 language	2 languages	3 languages	more than 3 languages

4. I *want* to learn or am learning to speak another language.

1	2	3	4	5
Not true at all				Very true

5. I correspond currently with people from other countries [or cultures].

1	2	3	4
Never	1 country	2-3 countries	more than 3 countries

6. I have friends from cultural-racial-ethnic backgrounds different than my own

0 friends	1 friend	2 friends	3 friends	4 friends	5 or more friends

7. I *want* to have friends from different cultural-racial-ethnic backgrounds.

1	2	3	4	5
Not true at all				Very true

8. I work with people with cultural-racial-ethnic backgrounds different from my own.

1	2	3	4	5
Never				Always

9. I go out of my way to hear/read/understand viewpoints other than my own

1	2	3	4	5
Never				Always

10. I try to get to know people who are different from me.

1	2	3	4	5
Never				Always

Appendix A (continued): Multicultural Experience Questionnaire (MEQ; Narvaez & Hill, 2010)

11. I respect the traditions of a culture.

1	2	3	4	5
Never				Always

12. I have had courses in intercultural communication

0	1 course	2 courses	3 or more courses

13. I have lived in a contrasting community (with a very different culture from my own)

0	1-2 months	3-6 months	6-9 months	over 9 months

14. I pay attention to news about the world beyond the U.S.A.

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Always

15. I enjoy media and art from different cultures

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Always

Appendix B: Multicultural Experience Scale (MES; Leung & Chiu, 2010)

Part A

Please complete the following survey.

1. From the time you were born until now, what cities and states (and country if not U.S.) have you lived in?

   Age from __0__ to _____ _____(City and State)

   _____ to _____ _____

   _____ to _____ _____

   _____ to _____ _____

   _____ to _____ _____

2. Was your father born in the US? (circle one) Yes No

   If No: a) Where was he born?
   _____

   b) At what age did he move to the US?
   _____

3. Was your mother born in the US? (circle one) Yes No

   If No: a) Where was she born?
   _____

   b) At what age did she move to the US?
   _____

4. What language can you speak?
   _____

5. How often are you exposed to a culture other than the mainstream American culture? (circle one)

0 1 2 3 4 5 6 7 8 9 10
Never Very often

Appendix B (continued): Multicultural Experience Scale (MES; Leung & Chiu, 2010)

Part B

1. Write down the first names of your five closest friends (e.g., classmates, personal friends, etc.):

Friend 1. _____ Friend 4. _____

Friend 2. _____ Friend 5. _____

Friend 3. _____

2. Write down the names of your five favorite restaurants / eating places:

Place 1. _____ Place 4. _____

Place 2. _____ Place 5. _____

Place 3. _____

3. Write down the names of your five favorite musicians / musical groups:

Musicians / musical groups 1. _____

Musicians / musical groups 2. _____

Musicians / musical groups 3. _____

Musicians / musical groups 4. _____

Musicians / musical groups 5. _____

4. What is the ethnicity of each of the friends you put down in Q1 above?

Friend 1. _____ Friend 4. _____

Friend 2. _____ Friend 5. _____

Friend 3. _____

Appendix B (continued): Multicultural Experience Scale (MES; Leung & Chiu, 2010)

5. What type of cuisine does each of the restaurants / eating places you put down in Q2 above serve (e.g., American, Korean, Chinese, and Mexican)?

Place 1. _____ Place 4. _____

Place 2. _____ Place 5. _____

Place 3. _____

6. Which country does each of the musicians / musical groups you put down in Q3 above come from?

Musicians / musical groups 1. _____

Musicians / musical groups 2. _____

Musicians / musical groups 3. _____

Musicians / musical groups 4. _____

Musicians / musical groups 5. _____

Appendix C: Cultural Intelligence Scale (Ang et al., 2007)

Read each statement and select the response that best describes your capabilities.
Select the answer that BEST describes you AS YOU REALLY ARE

(1 = Strongly disagree, 2 = Moderately disagree, 3 = Slightly disagree, 4 = Neither agree nor disagree, 5 = Slightly agree, 6 = Moderately agree, 7 = Strongly agree)

Cultural intelligence factor	Questionnaire items
Metacognitive cultural intelligence	
MC1	I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.
MC2	I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.
MC3	I am conscious of the cultural knowledge I apply to cross-cultural interactions.
MC4	I check the accuracy of my cultural knowledge as I interact with people from different cultures.
Cognitive cultural intelligence	
COG1	I know the legal and economic systems of other cultures.
COG2	I know the rules (e.g., vocabulary, grammar) of other languages.
COG3	I know the cultural values and religious beliefs of other cultures.
COG4	I know the marriage systems of other cultures.
COG5	I know the arts and crafts of other cultures.
COG6	I know the rules for expressing nonverbal behaviors in other cultures.
Motivational cultural intelligence	
MOT1	I enjoy interacting with people from different cultures.
MOT2	I am confident that I can socialize with locals in a culture that is unfamiliar to me.
MOT3	I am sure I can deal with the stresses of adjusting to a culture that is new to me.
MOT4	I enjoy living in cultures that are unfamiliar to me.
MOT5	I am confident that I can get accustomed to the shopping conditions in a different culture.

Appendix C (continued): Cultural Intelligence Scale (Ang et al., 2007)

Cultural intelligence factor	Questionnaire items
Behavioral cultural intelligence	
BEH1	I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.
BEH2	I use pause and silence differently to suit different cross-cultural situations.
BEH3	I vary the rate of my speaking when a cross-cultural situation requires it.
BEH4	I change my nonverbal behavior when a cross-cultural situation requires it.
BEH5	I alter my facial expressions when a cross-cultural interaction requires it.

Appendix D: Multicultural Ideology Scale items (Berry & Kalin, 1995)

Please rate your agreement with the following statements (1 = Strongly disagree, 2 = Moderately disagree, 3 = Slightly disagree, 4 = Neither agree nor disagree, 5 = Slightly agree, 6 = Moderately agree, 7 = Strongly agree)

1. [American] people should recognize that the [Unites States] society consist of groups with different cultural backgrounds
2. Ethnic minorities should be helped to preserve their cultural heritage in [the Unites States].
3. It is best for [the Unites States] if all people forget their different cultural backgrounds as soon as possible (R)
4. A society that has a variety of cultural groups is more able to tackle new problems as they occur
5. The unity of this country is weakened by [Americans] of different cultural backgrounds sticking to their old ways (R)
6. A society that has a variety of cultural groups has more problems with national unity than societies with one or two basic cultural groups (R)
7. [Unites States] natives should do more to learn about the customs and heritage of different cultural groups in this country
8. Immigrant parents must encourage their children to retain the culture and traditions of their homeland

Appendix E: Interactional diversity items

Cross-racial interaction items (Denson & Chang, 2009; Yes/No questions)

1. Have you ever dined with someone of a different racial/ethnic group?

2. Have you ever studied with someone from a different racial/ethnic group?

3. Have you ever dated with someone from a different racial/ethnic group?

4. Have you ever interacted with someone from a different racial/ethnic group?

5. Have you ever socialized with someone from a different racial/ethnic group?

Interracial interaction items (Antonio, 2001; measured with a 3-point scale ranging between 1 = not at all to 3 = frequently)

1. Have you ever dined with someone of a different racial/ethnic group?

2. Have you ever studied with someone of a different racial/ethnic group?

3. Have you ever had a roommate of a different racial/ethnic group

4. Have you ever dated someone of a different racial/ethnic group

Appendix F: Thirty-four main items of Multicultural Experience Assessment (MExA) and item sources

Please read these important notes before you start the survey:

** In this survey, "**culture" refers to cultures of countries**. For example: Italian culture, French culture, Kenyan culture.

** Please type your dominant culture here: ……
Choose only one culture even if you are bicultural or multicultural.

** In this survey, "**foreign or different culture" means any culture <u>other than the primary culture you listed</u>** above.

** Your answers should reflect both your **<u>past and current experiences</u>**.

Appendix F (continued): Thirty-four main items of Multicultural Experience Assessment (MExA) and item sources

PART 1: MULTICULTURAL EXPOSURE ITEMS

How frequently in your life do you engage (or have you engaged) in the following activities?

1	2	3	4	5	6
Never	Once a year or less frequently	2-11 times a year	1-3 times a month	1-6 days a week	Every day or multiple times a day

1. Hearing people around you talking foreign languages (other than your primary language) [a]
2. Watching movies/videos about foreign cultures [b]
3. Reading books about foreign cultures or people [b]
4. Seeing foreign people without talking to them or interacting with them [a]
5. Listening to music of foreign cultures [b, c]
6. Eating at restaurants that serve foreign cuisines [c]
7. Shopping at stores that sell foreign ethnic products [a]
8. Following media of or news about foreign countries and cultures [d]
9. Seeing art (e.g. architecture, sculpture) of foreign cultures [d]
10. Watching foreign TV channels [a]

Notes. [a] Item developed in this study independently. [b] Item developed in this study based on Maddux et al.'s (2010) argument that cross-cultural experiences may be obtained via colleagues, family, friends, books, movies, music, research, or travel. [c] Revised version of an item from Multicultural Experiences Scale (MES; Leung & Chiu, 2010). [d] Revised version of an item from Multicultural Experiences Questionnaire (MEQ; Narvaez & Hill, 2010). [e] Revised version of one of the items used to measure interaction diversity (Antonio, 2001; Denson & Chang, 2009; Gurin et al., 2002).

Appendix F (continued): Thirty-four main items of Multicultural Experience Assessment (MExA) and item sources

MULTICULTURAL EXPOSURE ITEMS (continued)

11. Watching different cultures' social occasions, celebrations, cultural events (weddings, festivals, parades, cultural events) on TV or without interacting with people [a]

12. Doing research about foreign cultures [a]

13. Learning/Studying a foreign language [a]

14. Please choose from the cultures to which you are exposed to **via the activities listed in Part 1 (questions 1-13)?** (Choose as many cultures as appropriate) [c]

15. All of the above activities are examples of potential exposure to individuals or elements of different cultures. Please try to think back and remember: When was the first time you were exposed to different cultures via these types of activities? [a]

(1) 0-1 year ago
(2) 1-2 years ago
(3) 2-5 years ago
(4) 5-10 years ago
(5) 10 years ago or more
(6) Never; I have NOT been exposed to different cultures via these types of activities

PART 2: MULTICULTURAL INTERACTION ITEMS

1. Talking to people from different cultures [a]

2. Socializing with people from different cultures [d]

Notes. [a] Item developed in this study independently. [b] Item developed in this study based on Maddux et al.'s (2010) argument that cross-cultural experiences may be obtained via colleagues, family, friends, books, movies, music, research, or travel. [c] Revised version of an item from Multicultural Experiences Scale (MES; Leung & Chiu, 2010). [d] Revised version of an item from Multicultural Experiences Questionnaire (MEQ; Narvaez & Hill, 2010). [e] Revised version of one of the items used to measure interaction diversity (Antonio, 2001; Denson & Chang, 2009; Gurin et al., 2002).

Appendix F (continued): Thirty-four main items of Multicultural Experience Assessment (MExA) and item sources

MULTICULTURAL INTERACTION ITEMS (continued)

3. Becoming friends with people from different cultures [c, d]

4. Dining with people from different cultures [e]

5. Going out with people from different cultures [a]

6. Studying with people from different cultures [e]

7. Working with people from different cultures [d, e]

8. Dating with people from different cultures [e]

9. Sharing personal problems or feelings with people from different cultures [e]

10. Corresponding with people from different cultures [d]

11. Communicating (via Skype, messenger, e-mail, phone, SMS, facebook, etc) with people from different cultures [d]

12. Attending to international events [a]

13. Working on resolving issues with people from different cultures [a]

14. Speaking a foreign language with people from that foreign culture [a]

15. Participating in social occasions (festivals, ceremonies, celebrations etc) of different cultures [a]

16. Being roommates with people from different cultures [e]

Notes. [a] Item developed in this study independently. [b] Item developed in this study based on Maddux et al.'s (2010) argument that cross-cultural experiences may be obtained via colleagues, family, friends, books, movies, music, research, or travel. [c] Revised version of an item from Multicultural Experiences Scale (MES; Leung & Chiu, 2010). [d] Revised version of an item from Multicultural Experiences Questionnaire (MEQ; Narvaez & Hill, 2010). [e] Revised version of one of the items used to measure interaction diversity (Antonio, 2001; Denson & Chang, 2009; Gurin et al., 2002).

Appendix F (continued): Thirty-four main items of Multicultural Experience Assessment (MExA) and item sources

MULTICULTURAL INTERACTION ITEMS (continued)

17. Please choose from the cultures to which you interact with **via the activities listed in Part 2 (questions 1-17)?** (Choose as many cultures as appropriate)

18. How many languages can you speak (excluding your mother tongue/first language)? [c, d]

(OPEN ENDED)

19. All of the above activities are examples of potential interactions with different cultures and their members. Please try to think back and remember: When was the first time you started interacting with different cultures via these types of activities? [a]

(1) 0-1 year ago
(2) 1-2 years ago
(3) 2-5 years ago
(4) 5-10 years ago
(5) 10 years ago or more
(6) Never; I have NOT been exposed to different cultures via these types of activities

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Notes. [a] Item developed in this study independently. [b] Item developed in this study based on Maddux et al.'s (2010) argument that cross-cultural experiences may be obtained via colleagues, family, friends, books, movies, music, research, or travel. [c] Revised version of an item from Multicultural Experiences Scale (MES; Leung & Chiu, 2010). [d] Revised version of an item from Multicultural Experiences Questionnaire (MEQ; Narvaez & Hill, 2010). [e] Revised version of one of the items used to measure interaction diversity (Antonio, 2001; Denson & Chang, 2009; Gurin et al., 2002).

Appendix G: Multicultural Experience Assessment (57-item MExA)

Please read these important notes before you start the survey:

** In this survey, "**culture" refers to cultures of countries**. For example: Italian culture, French culture, Kenyan culture.

** Please type your main/primary culture here: ……
Choose only one culture even if you are bicultural or multicultural.

** In this survey, "**foreign or different culture" means any culture <u>other than the primary culture you listed</u>** above.

** Your answers should reflect both your **<u>past and current experiences</u>**.

==========

How frequently in your life do you engage (or have you engaged) in the following activities?

1	2	3	4	5	6
Never	Once a year or less frequently	2-11 times a year	1-3 times a month	1-6 days a week	Every day or multiple times a day

PART 1: MULTICULTURAL EXPOSURE ITEMS

1. Hearing people around you talking foreign languages (other than your primary language)
2. Watching movies about <u>foreign cultures</u>
3. Watching movies that take place in different cultures
4. Watching videos (on YouTube, etc.) about <u>foreign countries/places</u>
5. Watching cooking shows <u>about foreign cuisines</u>
6. Watching documentaries about <u>different cultures</u>

Appendix G (continued): Multicultural Experience Assessment (57-items)

MULTICULTURAL EXPOSURE ITEMS (continued)

7. Reading books about foreign cultures
8. Reading books about foreign people
9. Seeing foreign people around you (without talking to them or interacting with them)
10. Listening to music of foreign cultures
11. Eating at restaurants that serve foreign cuisines
12. Doing research about foreign cultures or countries
13. Learning/studying a foreign language
14. Shopping at stores that sell foreign ethnic products
15. Following media of foreign countries and cultures
16. Reading newspapers of foreign countries
17. Reading magazines of foreign countries
18. Following news about foreign countries
19. Seeing art of foreign cultures
20. Watching plays/opera about foreign cultures
21. Seeing architecture of foreign cultures
22. Seeing sculpture of foreign cultures
23. Seeing paintings of foreign cultures
24. Seeing paintings by foreign artists
25. Watching foreign TV channels
26. Watching different cultures' social occasions (e.g. family gatherings, funerals) on TV

Appendix G (continued): Multicultural Experience Assessment (57-items)

MULTICULTURAL EXPOSURE ITEMS (continued)

27. Watching different cultures' celebrations (e.g. festivals, parades) on TV
28. Watching different cultures' cultural events (e.g. national holiday ceremonies) without interacting with people
29. Please choose from the cultures to which you are exposed to **via the activities listed in Part 1 (questions 1-28)?** (Choose as many cultures as appropriate)
30. All of the above activities are examples of potential exposure to individuals or elements of different cultures. Please try to think back and remember: When was the first time you were exposed to different cultures via these types of activities?

    (1) Never; I have NOT been exposed to different cultures via these types of activities

    (2) 0-1 year ago

    (3) 1-2 years ago

    (4) 2-5 years ago

    (5) 5-10 years ago

    (6) 10 years ago or more

PART 2: MULTICULTURAL INTERACTION ITEMS

1. Talking to people from different cultures
2. Talking to foreigners
3. Socializing with people from different cultures
4. Becoming friends with people from different cultures
5. Going to movies with people from different cultures
6. Going to parties with people from different cultures

Appendix G (continued): Multicultural Experience Assessment (57-items)

MULTICULTURAL INTERACTION ITEMS (continued)

7. Dining with people from different cultures
8. Going out with people from different cultures
9. Studying with people from different cultures
10. Working with people from different cultures
11. Dating people from different cultures
12. Being roommates with people from different cultures
13. Sharing personal problems with people from different cultures
14. Sharing feelings with people from different cultures
15. Working on resolving issues with people from different cultures
16. Attending international social events
17. Communicating via writing (e.g., emails, text messages, instant messaging) with people from different cultures
18. Communicating via video with people from different cultures
19. Talking on the phone with people from different cultures
20. Becoming friends on social networking websites with people from different cultures
21. Speaking a foreign language with people from that foreign culture
22. Participating in festivals/parades of different cultures
23. Participating in celebrations of different cultures
24. Attending to festivals/parades of different cultures
25. Please choose from the cultures to which you interact with **via the activities listed in Part 2 (questions 1-24)?** (Choose as many cultures as appropriate)

Appendix G (continued): Multicultural Experience Assessment (57-items)

MULTICULTURAL INTERACTION ITEMS (continued)

26. How many languages can you speak (excluding your mother tongue/first language)? (OPEN ENDED)

27. All of the above activities are examples of potential interactions with different cultures and their members. Please try to think back and remember: When was the first time you started interacting with different cultures via these types of activities?

(1) Never; I have NOT interacted with different cultures via these types of activities

(2) 0-1 year ago

(3) 1- 2 years ago

(4) 2-5 years ago

(5) 5 -10 years ago

(6) 10 years ago or more

Appendix H: Critical incident study (Study 1a) materials

Part 1: In this study *culture* refers to cultures of nations (e.g. French culture, Kenyan culture, Russian culture). Now please choose **one culture** as your dominant culture, even if you generally consider yourself bicultural or multicultural, and write this culture below.

A "different culture" means any culture other than the culture you wrote.

Now think about your multicultural experiences and answer the following questions:

(1) What do you think **multicultural experience** is?

(2) What makes up and what is included in your multicultural experiences?

Part 2: Now please think about **your last three multicultural experiences** regardless of whether you deem them superficial (or small, everyday experiences) or substantial (extraordinary or important experiences). For each of these multicultural experiences, please answer the following questions:

(1) Tell me exactly what happened in this multicultural experience:

(2) When did this happen?

(3) Where did this happen?

Part 3: Multicultural exposure subscale of the initial MExA.

Part 4: Multicultural interaction subscale of the initial MExA.

Part 5: Please write down 5 more questions that ask about other multicultural experiences that you can think of.

Please write down any types of multicultural experience that you believe are missing in this questionnaire.

Appendix I: Openness to experience subscale of Big-Five Inventory (John et al., 1991)

How I am in general

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

1	**2**	**3**	**4**	**5**
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

I am someone who…

_____ Is original, comes up with new ideas

_____ Is curious about many different things

_____ Is ingenious, a deep thinker

_____ Has an active imagination

_____ Is inventive

_____ Values artistic, aesthetic experiences

_____ Prefers work that is routine (R)

_____ Likes to reflect, play with ideas

_____ Has few artistic interests

_____ Is sophisticated in art, music, or literature

Appendix J: Rosenberg Self-Esteem Scale (Rosenberg, 1989)

Please rate your agreement with each statement by entering a number between 1 and 4.

(1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree)

1. I feel that I am a person of worth, at least on an equal plane with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure. (R)
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of. (R)
6. I take a positive attitude toward myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself. (R)
9. I certainly feel useless at times. (R)
10. At times I think I am no good at all. (R)

Appendix K: Closed-mindedness subscale of Need for Closure Scale (Webster & Kruglanski, 1994)

INSTRUCTIONS: Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale.

1 .....strongly disagree
2 ....moderately disagree
3 .....slightly disagree
4 .....slightly agree
5 .....moderately agree
6 .....strongly agree

1. Even after I've made up my mind about something, I am always eager to consider a different opinion (R)
2. I dislike questions which could be answered in many different ways
3. I feel irritated when one person disagrees with what everyone else in a group believes
4. When considering most conflict situations, I can usually see how both sides could be right (R)
5. When thinking about a problem, I consider as many different opinions on the issue as possible (R)
6. I prefer interacting with people whose opinions are very different from my own (R)
7. I always see many possible solutions to problems I face (R)
8. I do not usually consult many different options before forming my own view

Appendix L: Growth and Fixed Mindset Items (Dweck, 2006)

Please rate your agreement with each statement using the provided scale.

1	**2**	**3**	**4**	**5**
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

Growth Mindset Items

1. No matter what kind of person you are, you can always change substantially.
2. You can always change basic things about the kind of person you are.
3. No matter how much intelligence you have, you can always change it a quite a bit.
4. You can always substantially change how intelligent you are.

Fixed Mindset Items

1. You are a certain kind of person, and there is not much that can be done to really change that.
2. You can do things differently, but the important parts of who you are cannot really be changed.
3. Your intelligence is something very basic about you that you cannot change very much.
4. You can learn new things, but you cannot really change how intelligent you are.

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