Acculturation Measurement: From Simple Proxies to Sophisticated Toolkit

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Abstract and Keywords

This article discusses the importance of clear and precise conceptualizations of acculturation as well as the need for consistencies in definition, operationalization, and measurement. More specifically, it argues for an expanded acculturation research toolkit that does not rely too heavily on self-report acculturation scales. The article begins with an overview of the state of affairs with respect to acculturation conceptualizations and methods, paying particular attention to the unidimensional, bidimensional, and multidimensional frameworks of psychological acculturation. It then considers ways in which commonly used definitions and methods of acculturation can be used more intelligently. It also describes alternative methods for researchers interested in moving beyond self-report rating scales, a tiered approach to acculturation research, and method-specific health considerations. Finally, it offers some recommendations aimed at helping the field of acculturation and health research move forward.

Keywords: acculturation, measurement, acculturation research, self-report, rating, scale, tiered approach, health, research

Of Acculturation Measurement and Birmingham Screwdrivers

When deciding whether to use a hammer or a screwdriver,[1] it is undoubtedly useful to know whether one is dealing with nails or screws. Similarly, the choice of a measurement method is critically predicated on the conceptualization of the phenomenon one purports to measure. Unfortunately, acculturation research has not consistently followed this

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seemingly obvious piece of advice. Two systematic reviews of research on the relations between acculturation and health among US Hispanics found that a substantial proportion of reviewed studies (66% and 39%, respectively) did not include a definition of acculturation at all (Hunt, Schneider, & Comer, 2004; Thomson & Hoffman-Goetz, 2009). When provided, definitions were typically vague (Hunt et al., 2004). Unsurprisingly, this conceptual murkiness is accompanied by considerable heterogeneity and inconsistencies in how acculturation is operationalized, and hence how it is measured (Hunt et al., 2004; Lopez-Class, Castro, & Ramirez, 2011), leading to the conclusion that, "there has been no consensus on what to measure and how to measure it" (Alegria, 2009). Even within a given study, how acculturation is defined sometimes contradicts how it is measured (Thomson & Hoffman-Goetz, 2009). A number of scholars have argued that this lack of clarity and consistency are at the origin of discrepancies in findings on the relation between acculturation and health (Alegria, 2009; Baker, 2011; Koneru, Weisman de Mamani, Flynn, & Betancourt, 2007; Salant & Lauderdale, 2003). For the field to move forward, we must jointly address these fundamental issues of conceptualization and measurement.

In this chapter, we argue for the importance of clear and precise conceptualizations of acculturation and for a tight correspondence among definition, operationalization, and measurement. Bearing in mind that all methodological choices involve trade-offs between costs/resources and affordances, the chapter is designed to address two very different groups of researchers. In the first half, we review commonly used definitions and methods, critique their shortcomings, and discuss ways in which they can be used more intelligently. We expect this section to be most useful for researchers who wish to continue relying on simple self-report measures—that is, those who operate under significant time/resource constraints and for whom acculturation processes are not at the core of the research question (e.g., epidemiological studies where acculturation is used as a covariate). In the second half, we focus on more nuanced conceptualizations and their corresponding methods. We argue that standard acculturation scales fail to reflect the complexity of the phenomenon under study and consider some promising alternatives. This section is intended primarily for researchers who are already convinced of the limitations of existing acculturation measurement and who seek to study the mechanisms underlying the multifaceted relation between acculturation processes and health. Throughout, where relevant, we discuss method-specific health considerations, where health is broadly defined to include physical health, mental health, adjustment, and well-being. We also offer some recommendations aimed at helping acculturation and health researchers to move the field forward. In short, our main goal is to make a compelling case for an expanded acculturation research toolkit that does not rely unduly on Birmingham screwdrivers.

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Acculturation Conceptualizations and Methods: State of Affairs

The most widely used definition of acculturation is that of Redfield, Linton, and Herskovits (1936): "Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups" (p. 149). This definition refers to sociological changes occurring at the group level, but most theoretical and empirical work on acculturation using this definition actually focuses on psychological acculturation (Graves, 1967), or psychological changes taking place intra-individually—and so does this chapter. Thus, for our purposes here, acculturation is defined as the intraindividual change processes resulting from a person moving into a new cultural environment, in line with the definition advanced by Rudmin, de Castro, and Wang (this volume). Historically, the dimensionality of this change process has emerged as a core theoretical consideration. Earlier acculturation frameworks posited a unidimensional process whereby migrants gradually adapt to the mainstream cultural context at the expense of their heritage tradition (e.g., Gordon, 1964). From this perspective, acculturation can be equated with assimilation: In order to adopt practices or values of the new culture, migrants must forgo those of their heritage culture. For example, for a Chinese migrant to Canada, becoming more "Canadian" necessarily means becoming less "Chinese." More recently, psychologists such as Berry have argued that migrants[2] need not relinquish their heritage cultural tradition in order to adopt a new one (e.g., Berry, 1980). In this bidimensional framework, maintenance of the heritage cultural tradition and adoption of the new mainstream cultural tradition represent two independent processes. Going back to our Chinese migrant, he may develop excellent proficiency in English and become a fervent hockey fan while simultaneously retaining excellent command of Cantonese and remaining an avid Mah-jong player. Empirical work directly comparing both models has shown that the ability of the bidimensional model to predict adjustment outcomes is superior to that of the unidimensional model (Ryder, Alden, & Paulhus, 2000). Conceptually, a bidimensional acculturation framework is also better aligned with a growing body of work on biculturals who identify with multiple cultural groups (Benet-Martínez & Haritatos, 2005), who are competent in multiple cultural contexts (Chiu & Hong, 2013), and whose lifestyles reflect multiple cultural traditions (Hermans & Kempen, 1998). The reader is referred to Schwartz, Birman, Benet-Martínez, and Unger (this volume) for a more exhaustive discussion of biculturalism. As a result of its theoretical and empirical advantages, the bidimensional acculturation framework is now the preferred approach in research on psychological acculturation. Both unidimensional and bidimensional frameworks are discussed in further detail next.

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Unidimensional Approaches

Although unidimensional models of acculturation have largely been discredited, their use in research is still pervasive. In a systematic review of studies on health and acculturation among US Hispanics, Thomson and Hoffman-Goetz (2009) found that just over half of the studies that provided a definition of acculturation described it as a unidimensional process. Even defining acculturation in bidimensional terms does not completely safeguard against unidimensional influences; the authors noted that a number of studies that defined acculturation in bidimensional terms proceeded to measure it unidimensionally. Methodologically, this prevalence of unidimensional models translates into widespread use of proxy measures of acculturation such as nativity, language preference, or length of stay. In a 2003 systematic review of research on health and acculturation among Asians in the United States, Salant and Lauderdale (2003) found that 64% of reviewed studies used a proxy measure. This proportion dropped to 32% in a similar review published in 2009 (Thomson & Hoffman-Goetz, 2009). Around the same time, 34% of studies included in a systematic review focusing on mental health among US ethnic minorities used a proxy measure of acculturation (Koneru et al., 2007).

This overreliance on proxies in research on acculturation and health is problematic for several reasons. Conceptually, they rely on questionable, "linear and one-directional assumptions embedded in assimilation theory" (Baker, 2011, p. 89). As such, these proxy measures cannot differentiate between cultural maintenance and cultural acquisition facets of acculturation, not to mention specific cultural domains (Koneru et al., 2007; Lopez-Class et al., 2011). In addition, proxy measures are exactly that, proxies, surrogate variables that do not directly assess psychological acculturation (Matsudaira, 2006) and that, likely, "capture other phenomena that may or may not be associated with acculturation" (Thomson & Hoffman-Goetz, 2009, p. 989). More pointedly, proxy measures fail to consider the *process* of acculturation and are silent as to the mechanisms underlying the relation between acculturation and health; therefore, they cannot directly inform interventions (Alegria, 2009; Lawton & Gerdes, 2014). Alegria (2009) has suggested that the widespread use of proxy measures might be partly responsible for the inconsistent findings regarding the role of acculturation in health outcomes and that we need to move beyond these measures. We agree with this assessment.

Unidimensional scales, such as the Suinn-Lew Asian Self Identity Acculturation scale (SL-ASIA; Suinn, Ahuna, & Khoo, 1992) or the Acculturation Scale for Mexican Americans (Cuellar, Harris, & Jasso, 1980), tend to assess changes in several cultural domains (e.g., language, dietary preferences, entertainment and leisure, identity). In that regard, the measures are multidimensional; nonetheless, they face the same limitations as the unidimensional model. By forcing participants to make a choice between two cultural

groups, they fail to capture the ways in which migrants may negotiate heritage-cultural maintenance and new-culture acquisition separately. In spite of these shortcomings, unidimensional scales are still widespread. In their systematic review of research on health and acculturation among US Hispanics, Thomson and Hoffman-Goetz (2009) found that 58% of the studies using scales relied on a unidimensional scale. A range of short, readily available bidimensional or even tridimensional scales have been developed, so continued reliance on unidimensional scales cannot be justified on grounds of participant burden, limited resources, or time limitations. Given the flawed conceptual underpinnings of unidimensional measures, we strongly recommend that researchers interested in acculturation and health stop using unidimensional instruments in favor of better alternatives.

Bidimensional Scales

In line with their underlying bidimensional framework, bidimensional scales such as the Acculturation Index (AI; Ward & Rana-Deuba, 1999), the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000), or the Vancouver Index of Acculturation (VIA; Ryder et al., 2000) address the problematic zero-sum assumption at the core of unidimensional approaches. They allow people to "carry two pieces of cultural luggage at the same time" (Cabassa, 2003, p. 134) and examine independently the extent to which migrants engage with their heritage cultural group and with the new mainstream context. As such, they represent a marked improvement over unidimensional measures. A thorough review of bidimensional scales is beyond the scope of this chapter, and the reader is referred to, for example, Kang (2006); Huynh, Howell, and Benet-Martinez (2009); or Celenk and van de Vijver (2011) for more exhaustive coverage of the topic. We limit our discussion of bidimensional scales to two key methodological considerations: typological versus dimensional scales and independence between the dimensions.

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Typological Versus Dimensional Scales
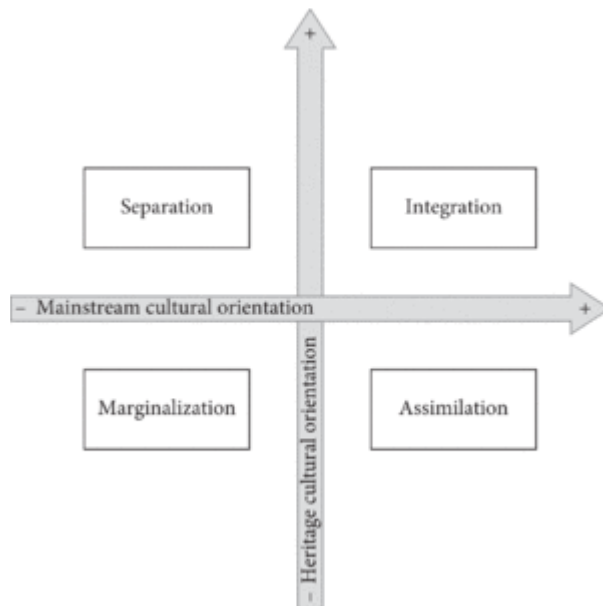
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Figure 1 The bidimensional acculturation framework: Typological (rectangles) versus dimensional measures (arrows).

The bidimensional acculturation framework posits two independent cultural engagement dimensions. Crossing these two dimensions yields a fourfold typology of acculturation orientations (Berry, 1980, this volume)—also referred to as "strategies," "modes," "alternatives," "attitudes," and so forth (Rudmin & Ahmadzadeh, 2001). A separation orientation consists of greater motivation for cultural engagement in the heritage cultural group and appreciation of that tradition, combined with lesser motivation for cultural engagement in the mainstream cultural group and appreciation of that tradition. Assimilation consists of the opposite combination; marginalization entails a negative orientation toward both traditions; and integration represents a positive orientation toward both traditions. Figure 1 illustrates the bidimensional framework. Researchers relying on this bidimensional framework can choose between two types of scales. Typological scales, such as those developed by Berry and colleagues, directly measure each of the four strategies by administering four scales—one for each rectangle in Figure 1. A sample item from an assimilation scale is "When I have to furnish a room, I would not buy Korean furniture because it looks so out-of-place, and also because there is so much beautiful Canadian furniture available" (Kim, 1988, cited in Rudmin & Ahmadzadeh, 2001, p. 44). By contrast, dimensional scales measure mainstream and heritage cultural orientations using separate scales, one for each arrow in Figure 1, often with similar wording. A sample item from the mainstream subscale of such an instrument is, "I am comfortable working with typical North American people" (Ryder et al., 2000, p. 65). The corresponding item from the heritage subscale is, "I am comfortable working with people

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of the same heritage culture as myself." Typological scales suffer from major psychometric flaws: Most concerning, they are double-barreled, thus violating assumptions of independence between the two dimensions and making it unclear what part of the item participants assess (see Rudmin & Ahmadzadeh, 2001, and Rudmin et al., this volume, for an exhaustive discussion). Thus, we encourage researchers to select dimensional (arrows in Figure 1) rather than typological (rectangles in Figure 1) measures of acculturation. Amid the variety of dimensional scales available, psychometric issues such as reliability are an important concern, and the reader is referred to Kang (2006) for a detailed discussion of reliability issues.

Nonetheless, although dimensional scales are preferable on psychometric grounds, a substantial body of acculturation research has focused on the relation between specific acculturation strategies (which typological scales measure directly) and health-relevant outcomes. In particular, numerous studies have investigated the relation between integration and adjustment/well-being, with the general conclusion that this strategy is associated with most favorable outcomes (for a meta-analysis, see Nguyen & Benet-Martínez, 2013). For all their psychometric advantages, bidimensional scales do not directly assess integration as a construct, and the scores they yield therefore characterize integration only indirectly.

To address this disconnect between theoretical discussions of the benefits of integration and dimensional scores that measure cultural orientations, researchers have resorted to a variety of dichotomization techniques (through mean, median, or midpoint splits) to assign participants to integration, assimilation, separation, or marginalization categories. For example, in the case of a median split, a participant whose scores are above the median on the mainstream dimension and below the median on the heritage dimensions falls into the "high mainstream/low heritage" category and therefore is classified as endorsing an assimilation strategy. Although this dichotomization approach makes some sense theoretically, it is fraught with statistical issues including loss of variability and power (Demes & Geeraert, 2014) and therefore should be discouraged. An alternative consists of keeping both continuous heritage and mainstream dimensional scores and examining the combination of both through an interaction term. This strategy is more statistically sound, but it does not allow one to test directly the effect of integration or of the other three acculturation orientations. The reader is referred to Demes and Geeraert (2014) or to Ward and Rana-Deuba (1999) for a more complete discussion of issues related to deriving strategy scores from bidimensional acculturation scales.

An interesting and statistically more sophisticated alternative consists in using clustering approaches such as latent class analysis or cluster analysis (see e.g., Schwartz & Zamboanga, 2008, for an examination of acculturation strategies using latent class

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analysis, and Schwartz et al., 2013, for a similar approach in longitudinal design). Latent class analysis derives empirical categories based on patterns in the data, here in heritage and cultural orientation scores. This approach addresses the statistical issues inherent to other techniques such as median splits, but the categories emerge "from the data" rather than from theoretical considerations. In other words, more than four categories (as predicted by Berry's framework) may emerge, and the categories that emerge may or may not map onto the four acculturation strategies advanced by the bidimensional model. Indeed, when applying latent class analysis to US-based Hispanics' heritage and mainstream cultural orientations, Schwartz and Zamboanga (2008) identified six categories that only partially mapped onto Berry's four acculturation strategies. Given the frequency with which theoretical accounts of these strategies are invoked in acculturation and health research, and the widespread use of bidimensional measures, future research should aim to develop appropriate bidimensional scoring procedures that directly assess acculturation strategies.

Independence Between Dimensions

Conceptually, the bidimensional acculturation framework posits that heritage and mainstream dimensions are independent from one another. By contrast, a unidimensional approach assumes a perfect negative correlation between heritage and mainstream dimensions. Thus, this independence criterion is essential to the establishment of a bidimensional framework, as it differentiates bidimensional from unidimensional approaches. In practice, this means that correlations between heritage and mainstream scores of bidimensional scales should be null. However, not all instruments fulfill that requirement, and Kang (2006) showed that this might be due in part to scale formats. Broadly speaking, items from acculturation scales follow either a frequency format (where typical answers range from *never/not at all* to *always/very much*) or an endorsement format (where typical answers range from *strongly disagree* to *strongly agree*). In her review of widely used bidimensional acculturation scales, Kang found that scales failing to meet the orthogonality criterion mix frequency and endorsement questions (e.g., the Language, Identity, and Behavioral Acculturation Scale; Birman, Trickett, & Vinokurov, 2002), whereas scales demonstrating orthogonality include only endorsement questions (e.g., the Acculturation Index; Ward & Rana-Deuba, 1999). As Kang points out, endorsement questions are conceptually independent from one another; for example, appreciating mainstream entertainment does not constrain one's appreciation of heritage entertainment. By contrast, eating heritage food more often necessarily means eating mainstream food less often (given that the overall number of meals typically remains constant—although cultural hybrids such as "pizza-sushi" complicate this simple example), illustrating that dependence is built into frequency acculturation questions. A plausible reason for the common inclusion of frequency items is that they are particularly well suited to assess language, a component that lies at the

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core of most acculturation instruments (Zane & Mak, 2003). We discuss language issues in more detail later, but in the meantime, we would recommend selecting scales that use endorsement questions rather than frequency questions. It is imaginable to derive different scores for categories of items using different response formats (e.g., separate scores for endorsement questions and for frequency questions), but such an approach might threaten scale integrity. However, it seems preferable to simply use a bidimensional scale with endorsement questions, given that such scales are widely available.

Multidimensional Scales

The bidimensional framework previously discussed has arguably become the dominant conceptual approach to acculturation, but in recent years a number of scholars have questioned its ability to capture the complexities of the acculturation process (Lopez-Class et al., 2011; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). For example, in an era of "hyperdiversity" (Doucerain, Dere, & Ryder, 2013; Kirmayer, 2013), simple distinctions between heritage and mainstream cultural groups may not be sufficient to characterize the background of participants who negotiate more than two cultural traditions and idiosyncratically mix and combine cultural elements into hybrids (Arends-Tóth & van de Vijver, 2004). In a related vein, Cohen (2011) and Gim Chung, Kim, and Abreu (2004) have argued that the heritage group living in the new country (e.g., Chinese Americans) is qualitatively different from the heritage group in the country of origin (e.g., Chinese living in China) and that these differences should be reflected in acculturation instruments. Their response was to add a third dimension to otherwise typical bidimensional instruments (thus leading to the creation of, e.g., the Asian American Multidimensional Acculturation Scale; Gim Chung et al., 2004).

In parallel, critiques of the bidimensional framework have underscored that acculturation may be domain-specific. Indeed, past research has shown that people endorse different acculturation orientations in public versus private domains (Arends-Tóth & van de Vijver, 2004). Similarly, findings that changes in identities and in behaviors follow different trajectories (Schwartz et al., 2010; Schwartz et al., 2013) suggest that acculturation is also component- or domain-specific. These critiques are well taken—and accounts of acculturation increasingly describe it as a dynamic, multidimensional, and multilevel phenomenon that is profoundly influenced by the context in which it takes place (Doucerain et al., 2013; Lopez-Class et al., 2011; Schwartz et al., 2010; see also Sam & Berry, 2006, and its review by Ryder & Dere, 2010).

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A common methodological response to these arguments has been to develop more scales. Multidimensional scales include separate components to assess various acculturation domains. For example, the Asian American Multidimensional Acculturation Scale (Gim Chung et al., 2004) comprises four subscales assessing cultural identity, language, cultural knowledge, and food consumption. Unfortunately, as Salant and Lauderdale (2003) point out, in most cases researchers aggregate scores across all items of a scale to create a single composite score. Computing separate, domain-specific scores is a simple solution that would allow researchers to examine the unique contribution of different acculturation components to health outcomes, although this approach carries statistical risks, such as potential multicolinearity or consuming too many degrees of freedom. In addition, creating and refining self-report rating scales may not directly address the core issues afflicting acculturation research, many of which are more conceptual than empirical. In that sense, we are sympathetic to Hunt and colleagues' (2004) conclusion that "critical discussion about acculturation in the health literature has concentrated almost entirely on issues of psychometric modeling and principles of measurement, while neglecting the central question of what is being measured" (2004, p. 981).

In line with that view, and taking stock of the issues reviewed so far, we advance two proposals that will frame the remainder of this chapter. First, we need to take a step back and collectively work on clarifying and refining acculturation conceptualizations. The term "acculturation" itself is appropriate as an umbrella term that broadly delineates a conceptual space, but may be too vague to operationalize as a single score on a scale. A specific research question will typically focus on a single acculturation domain, and as Schwartz and colleagues argued, construct labels should reflect the fact that "what is being studied is only part of the whole" (Schwartz et al., 2010, p. 244). They suggest labels such as "behavioral acculturation" or "identity-based acculturation." We expect that greater conceptual clarity and precision would allow a closer fit between conceptualization and measurement. Second, we propose that self-report rating scales are not sufficient on their own to fully assess the complexity of acculturation as a phenomenon. If we want to better understand the mechanisms underlying the relations between acculturation and health, we need to explore alternative methods beyond rating scales. This suggestion is not entirely novel (see, e.g., Thomson & Hoffman-Goetz, 2009, for a similar argument), but so far the field as a whole has struggled to carry it out. The second half of this chapter reviews a number of innovative methods used (or that could be used) to study acculturative processes and their relation to health. These examples are not meant as a prescriptive list of ideal methods, but rather as a source of inspiration for researchers interested in moving beyond self-report rating scales. Before we turn to these alternative methods, however, we want to address the issue that, in acculturation research, as in any other field, "there ain't no such thing as a free lunch."

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Methodological Trade-Offs: A Tiered Approach

For researchers with only a few moments at their disposal to assess acculturation as a covariate, complex multidimensional methods designed to unpack acculturation processes may not be feasible. By contrast, using a proxy measure (such as language spoken at home) to understand the mechanisms underlying the relation between acculturation and, say, depression is—to be generous—insufficient. In other words, the choice of an acculturation measure is crucially predicated on the centrality of acculturation in the research question: Is acculturation itself the phenomenon under study or is it peripheral? Relatedly, researchers are limited in the time and resources they can devote to any single construct, particularly in the context of large population health studies. To address this reality, a tiered approach to acculturation research may be suitable.

The first tier includes studies where acculturation is not central to the research question (i.e., it is used as a covariate or as one among many indicators) and/or that face substantial time constraints (e.g., in the case of epidemiological studies). In these cases, more thorough acculturation instruments do not represent an efficient cost-benefit solution, and proxy measures may be appropriate (Alegría, 2009). However, given the argument that the widespread use of proxies has largely contributed to inconsistent and ambiguous results in research on acculturation and health (Alegría, 2009), and in the spirit of advancing the field of acculturation beyond its current conceptual and methodological flaws, we would recommend moving away from labeling research in this first tier as "acculturation research" by using more explicit and accurate terminology. For example, an article entitled "Acculturation and Maternal Health Behaviors: Findings from the Massachusetts Birth Certificate" (Hawkins, Gillman, Shafer, & Cohen, 2014) could easily be retitled "Nativity, Language Preference, and Maternal Health Behaviors: Findings from the Massachusetts Birth Certificate." This approach would have the advantage of signaling clearly that the emphasis is not on acculturation as a *process*, but on the role of sociodemographic indicators of minority members' *exposure* to the mainstream context. Many other published papers could be handled in a similar way.

In parallel, there is a need for more research systematically comparing the performance of different proxies or establishing the optimal combination of proxies (see e.g., Cruz, Marshall, Bowling, & Villaveces, 2008, for an example of research in that direction). The validity and reliability of scales need to be established empirically, and so should it be for proxies. For studies in this tier that face fewer severe time and resource limitations, bidimensional or multidimensional scales would be better suited than proxy measures to provide a general assessment of acculturation.

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The second tier includes studies that focus on acculturation as a *process* and on the mechanisms underlying it. In these cases, proxy measures are certainly counterindicated, but even sole reliance on bidimensional or multidimensional scales may not be sufficient. As discussed earlier, acculturation is "dynamic, multifaceted and complex" (Lopez-Class et al., 2011, p. 1560), and it is unlikely that any single scale would be sufficient to fully characterize these phenomena. Thus, studies in this tier would be best served by approaching methodological considerations in two ways. At the conceptual level, acculturation should be conceptualized clearly and precisely. In most cases, a specific aspect of acculturative processes would be examined—for example, identity negotiation—and this aspect should be labeled appropriately and clearly defined. At the operational level, the methods and study design selected should tightly fit the chosen conceptualization of acculturation: Researchers should not "default" to specific acculturation scales with which they are most comfortable or familiar. A range of alternative methods is probably better suited to examine certain acculturative processes (although the reliability and psychometric properties of some more innovative approaches would first need to be established in an acculturation context).

Beyond Acculturation Scales

In the second half of this chapter, we review some promising alternative methods. Before doing so, we revisit our definition of acculturation.

What Changes During Acculturation?

Reviews of research on acculturation and health have stressed the importance of carefully conceptualizing acculturation, arguing that the definitions provided—when provided at all—are typically vague (Hunt et al., 2004; Salant & Lauderdale, 2003; Thomson & Hoffman-Goetz, 2009). Indeed, definitions such as "the change processes resulting from a person living in a new cultural environment" are too broad for effective operationalization. A common way to refine these all-encompassing definitions is to consider along what dimensions/domains acculturative changes take place and to emphasize the contextual and multifaceted nature of acculturation processes.

Different authors have carved the space of acculturative changes differently and emphasized different characteristics, but overall, considerable overlap can be observed among conceptualizations. A thorough review of theoretical accounts of acculturation is beyond the scope of this chapter, but informed by the work of a number of authors

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(Baker, 2011; Chirkov, 2009; Koneru et al., 2007; Lopez-Class et al., 2011; Rudmin, 2009; Thomson & Hoffman-Goetz, 2009), we offer the following conceptualization to supplement our earlier definition of acculturation: Acculturation is a multilevel, contextually dependent developmental change process resulting from a person moving into a new cultural environment, with changes taking place at differential rates across a number of domains. These domains fall roughly into three categories—cultural competence, cultural engagement, and cultural positioning—that each have important implications for the health of acculturating migrants. This conceptualization is in line with current conceptualizations of culture as nonmonolithic and nonuniform (Morris, Chiu, & Liu, 2015). We consider emerging approaches to each of these three categories in turn.

Measuring Cultural Competence Aspects of Acculturation

Cultural competence pertains to migrants' knowledge of the relevant cultural traditions and to the ability to flexibly use this knowledge in response to environmental demands. It includes not only issues of mainstream language proficiency or heritage language maintenance but also more implicit aspects of cultural knowledge, such as the ability to follow social norms.

Language Variables

Language variables are among the most widely used indices in acculturation research. Zane and Mak (2003), for example, reported that of 22 published acculturation measures, 86% (19/22) included language use and/or preference items as indices of acculturation. Language was the category with the highest representation across the 22 measures, with a mean of 41% of items in a given acculturation measure being language based (range 1%–100%). By contrast, the next most represented category was daily living habits, used in 73% (16/22) of measures, with a mean of only 26% of the items included in a given acculturation measure (range = 8%–67%). Hunt and colleagues (2004) reported that language preference was used as an index of cultural orientation in 90% (62/69) of the studies they examined and was the *only* indicator of cultural orientation in 28% of the studies they examined. Clearly, language preference and use are considered by many researchers to be highly indicative of a person's acculturation orientation. This is not hard to understand. It is natural to think that the degree to which a person is oriented toward a culture, and hence engaged with members of the corresponding speech community, will reflect that person's language use, preference and proficiency, and therefore that these variables may provide a useful index of acculturation.

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There are, however, several problems with this approach. First, by using language as a proxy measure of acculturation, it becomes logically difficult to study any role language might play in the acculturation process without circularity. Second, treating language as a proxy measure or reflection of cultural orientations entails thinking about language as merely a marker or symptom of closeness to a culture and thereby ignoring the very specific role that language likely plays in the acculturation process. It is primarily through language use that a person establishes relationships with members of the cultural community, accesses resources through that community, and learns about, or maintains, its values, beliefs, tastes, and behaviors. This renders language different in kind from other characteristics that might be negotiated during acculturation.

Third, if we wish to consider language as providing a *means* for achieving acculturation, and not simply as a reflection of that acculturation, then we need to use a richer conception of language that goes beyond thinking of it as a collection of pronunciation, vocabulary, and/or grammar skills to be invoked during communication. This point is discussed further in what follows. Fourth, there are problems with the scales typically encountered in the acculturation literature for measuring language use, preference, and proficiency. A measure of relative (percentage) language use (heritage versus majority) creates a psychometrically different kind of measure from language preference. The former is a zero-sum, interdependent measure where greater use of one language necessarily implies reduced use of the other, whereas this is not necessarily true of preference measures. Finally, self-report measures of language proficiency face the potential risk that people may differ in the reference points used for self-assessment. In other words, checking "strongly agree" on a proficiency scale does not necessarily reflect the same degree of endorsement for everyone, as people differ in their propensity to choose very positive (acquiescence bias) or moderate (moderacy bias) statements. Moreover, not everyone necessarily has exactly the same language skill benchmarks in mind when using self-report rating scales. Further problems arise when such disparate measures are combined to produce a single, global language measure as an index of acculturation, a measure that would be inherently difficult to interpret.

Most seriously, perhaps, is that by taking just simple measures of language (i.e., preference, use, and proficiency) one ignores the pivotal role language plays in the acculturation process itself—both in terms of mainstream culture acquisition and heritage culture maintenance—and thus makes it difficult to study that role. On this point, usage-based theorists of language (Barlow & Kemmer, 2000; Tomasello, 2005) provide an important perspective on language acquisition, in particular with respect to second-language proficiency development. Here the idea is that communication is about more than simply transmitting a cognitive message; rather, virtually every linguistic act is seen as involving interlocutors attempting to establish joint attention (i.e., conveying

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construals or perspectives on what is being talked about) and attempting to read each other's social intentions (understanding the state of mind of the other person). Different languages provide different ways of achieving these goals, and this creates a challenge when learning the majority group's language. To become socially integrated into the mainstream cultural group—that is, to be able to enter into the world of the majority community in a culturally appropriate manner—a person has to become familiar with the specific ways in which speakers formulate messages for various speech functions including requesting, persuading, apologizing, using humor, being polite, and so forth. This includes mastering the many fixed and idiomatic expressions and speech styles a community uses to convey subtleties of meaning, to achieve joint attention, to read social intentions, and to manage conversations (Wray, 2005). Thus, to "plug into" the majority community, a person needs to learn how to speak sufficiently like a member of that community in order to achieve certain social goals, and not just know how to speak in semantically and grammatically correct sentences (Pawley & Syder, 1983). Such learning requires appropriate exposure to majority speakers and a great deal of practice, and the process will involve complex interactions among considerations of motivation, sense of identity, and specific linguistic experiences, all of which can influence each other (Segalowitz, 2010, especially chapter 5), Importantly, a certain level of language proficiency in the sociolinguistic aspects of communication will be necessary for building social networks that make possible further gains in language proficiency and improving access to the resources of the majority community. Similar issues are at stake in the case of heritage language maintenance.

There are tests of language proficiency with idioms, fixed expressions, collocations, and sociolinguistic knowledge, all of which are aspects of communication that normally would be learned from social engagement with speakers in the target language community. These tests generally focus on learners and aim to determine, for example, whether a particular language-learning experience (in the classroom, study abroad, etc.) has impacted one's proficiency in these aspects of language. For example, Bardovi-Harlig (2008, 2013; Bardovi-Harlig & Dörnyei, 1998) discusses ways of measuring knowledge of pragmatics—that is, the sociolinguistically appropriate ways of accomplishing certain social goals, such as requesting information, apologizing, and persuading. Schmitt's (2004) edited volume provides other examples of laboratory tests of knowledge of fixed expressions and idioms. It should be possible to adapt many of these tests for use in field studies to study the role played by these socially important linguistic skills in the acculturation process.

For all these reasons, we would encourage researchers to define "acculturation" independently from the language skills that are necessary to negotiate it, so that it becomes possible to study how language serves as a mediating mechanism in the

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acculturation processes of cultural acquisition and maintenance. As well, we would encourage researchers to look beyond operationalizations of language skills in terms of simple measures of use, preference, and global proficiency (interesting and valuable as these might be). Instead, we suggest that researchers investigate variables that touch on skills regarding the sociolinguistic uses of language as well as knowledge of fixed expressions, idioms, and speaking styles, all of which provide minority speakers important keys to gaining access to the mainstream community and retain access to the heritage community in culturally appropriate and effective ways. Pragmatic and sociolinguistic aspects of language are closely tied to cultural norms and conventions, which we discuss more directly in the next section.

Cultural Schemata

Cultural schemata, or cognitive structures organizing related pieces of cultural knowledge and mediating our understanding of the social environment (Casson, 1983; D'Andrade, 1992; Strauss & Quinn, 1998), are at the core of more implicit aspects of cultural competence. In the process of acculturation, migrants acquire new cultural schemata, which emerge out of repeated engagement with the new cultural context. For example, restaurant scripts are different in Chinese versus American contexts (Meng, 2008), and upon settlement in the United States, a Chinese migrant needs to adjust his internalized expectations about the sequence of events in a restaurant to reflect American customs. This process of negotiation of cultural schemata leads not only to mundane changes in expectations about the role of a waiter but also to profound modifications in the ways in which one interacts with the social world, such as one's emotional reaction to given situations (De Leersnyder, Mesquita, & Kim, 2011).

This aspect of acculturation occurs mostly implicitly, thus limiting the usefulness of introspective methods. The methods used in a couple of recent studies on "cultural fit" (De Leersnyder et al., 2011; Güngör et al., 2013) suggest a promising way to examine the extent to which migrants have internalized cultural schema normative in the new cultural environment. Cultural fit refers to the concordance between a person's characteristics and the typical characteristics in a given cultural environment. In these studies, cultural fit is operationalized as the correlation between a migrant's pattern of response and the dominant pattern of response among members of the cultural group with which fit is examined. For example, in the domain of emotional acculturation, De Leersnyder and colleagues (2011) examined the concordance between Korean American immigrants' patterns of emotional reaction to daily situations and the average pattern reported by a European American sample. They found that higher cultural fit, indexed by higher correlations between individual patterns and the average US pattern, was related to higher levels of migrants' exposure to and engagement in the mainstream culture.

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This method is interesting for several reasons. First, in contrast to standard acculturation scales, this "cultural fit" approach offers a fairly implicit assessment. Thus, it circumvents critiques that high scores on acculturation scales may reflect a general preference for multiculturalism rather than actual cultural knowledge and competence (Boski, 2008). Second, the method is easily adaptable to different domains. For example, whereas De Leersnyder and colleagues used it to examine emotional acculturation, Güngör and colleagues (2013) applied it in the area of personality. Humans rely on cultural schemata to navigate numerous aspects of their social environment, and this approach provides an example of how to measure the extent to which migrants have acquired and internalized new cultural schemata. Third, this method has important health implications. The degree to which a migrant has acquired the cultural schemata necessary to function in the new cultural environment may be directly related to well-being. Supporting this idea, De Leersnyder et al. (2014) found that greater degrees of emotional fit were related to greater relational well-being. Consedine, Chentsova-Dutton, and Krivoshekova (2014) found a similar relation between greater emotional acculturation and lesser somatic symptomology.

In the case of migrants, emotional fit—or cultural fit more broadly—goes beyond simply acquiring new mainstream cultural schemata. Rather, migrants need to negotiate multiple sets of schemata, reflecting their multiple cultural traditions, and flexibly use the relevant schema depending on the context. Indeed, Hong and colleagues (Hong, Morris, Chiu, & Benet-Martínez, 2000) showed that Chinese Americans changed their attribution style in response to Chinese versus American cues, in ways that reflected normative Chinese versus American attribution styles respectively.

The application of this implicit cultural competence approach to the health domain represents a second type of health implication. Like restaurant scripts, cultural scripts surrounding health-relevant situations differ across cultural contexts and represent an important part of migrants' acculturation process (Ryder & Chentsova-Dutton, 2015). For example, Ranney (1992) uncovered important differences between American and Hmong medical consultation scripts. In light of documented disparities in health access and health services usage among members of cultural and linguistic minorities (Centers for Disease Control and Prevention, 2013), implicit methods allowing one to track changes in migrants' cultural competence aspects of acculturation may represent an important addition to acculturation researchers' toolkit.

Measuring Cultural Positioning in Acculturation

Cultural positioning refers to the various motivational, cognitive, and emotional processes by which migrants position themselves vis-à-vis relevant cultural traditions in their new

homeland. This includes, for example, how they position themselves with respect to social and cultural identities and their level of endorsement of cultural values.

Identity Scales

The formation of new social identities and the integration of these identities into the self-concept represent an important aspect of acculturation. Unfortunately, identity issues are often subsumed in generic acculturation scales, without making this explicit. As a result, acculturation attitudes and cultural identity are sometimes used interchangeably (Phinney, Horenczyk, Liebkind, & Vedder, 2001), with unfortunate consequences. For example, in an article describing the development of a general acculturation scale, Ryder and colleagues (2000) used the term "cultural self-identity" to refer to the construct of cultural orientation, which could potentially lead a reader to confound identity with orientation. Supporting this concern, studies have found that phrasing items on acculturation scales in terms of identification versus willingness for cultural contact can lead to different levels of endorsement and to different relations between acculturation and adjustment (Berry & Sabatier, 2011; Ward & Kus, 2012). Thus, we believe it is important to keep identity and cultural attitudes/orientations as separate constructs and, if the goal is to examine identity-related aspects of acculturation, to rely on an identity scale rather than a general acculturation scale.

For example, grounded in part in an Eriksonian perspective on identity development and in line with a bidimensional acculturation framework, the Multigroup Ethnic Identity Measure (Phinney, 1992) is a widely used identity measure in acculturation research in youth. With a different emphasis, the Bicultural Identity Integration Scale (Benet-Martínez & Haritatos, 2005) examines how bicultural individuals integrate and maintain their dual cultural identities. As for measuring acculturation in general, however, rating scales that assess explicitly held beliefs and attitudes are not the only—nor necessarily the best—way to measure identity. Implicit measures may confer certain advantages.

Measuring Cultural Positioning Implicitly

Learning to manage multiple cultural identities often involves negotiating conflicting allegiances and managing tensions between contradictory cultural ideals (No, Wan, Chao, Rosner, & Hong, 2010). Because of this potential for ambivalence and internal conflict, explicit measures of identity such as identity rating scales may not be sufficient to fully capture cultural identity processes (Kim, Sarason, & Sarason, 2006; Weinreich, 2009). In support of that idea, Benet-Martínez, Leu, Lee, and Morris (2002) found that Chinese Americans who perceived their two cultural identities as incompatible behaved in culturally noncongruent ways when primed with cultural icons (e.g., making individualistic attributions after being primed with Chinese icons), whereas those who perceived their cultural identities as compatible behaved in culturally congruent ways.

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These results point to the importance of examining implicit aspects of cultural identity in acculturative processes.

Kim et al. (2006) used one such implicit measure, the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), to compare the relative contribution of implicit and explicit cultural identification and attitudes in predicting psychological distress. Widely used in social psychology, the IAT is a latency-based task that measures the strength of the association between concepts (e.g., male vs. female) and attributes (e.g., pleasant vs. unpleasant). In their study, Kim and colleagues asked Korean American immigrants to classify Korean and American names into self versus other categories to tap into implicit cultural identification and into pleasant versus unpleasant categories to tap into their cultural attitudes. Supporting the importance of implicit measures, they found that implicit measures predicted psychological distress better than did explicit measures (i.e., traditional self-report rating scales).

In addition, for participants with inconsistent scores between explicit and implicit attitude measures (e.g., someone who explicitly reports positive attitudes toward Koreans but implicitly expresses a preference for Americans), Kim et al. (2006) found a positive relation between psychological distress and the magnitude of the discrepancy between explicit and implicit scores. These results suggest that culturally related aspects of migrants' implicit social cognition may have interesting health implications and that the methods used to implicitly measure cultural positioning are worth exploring. Although there are some technical controversies concerning validity and reliability issues with this methodology (see, e.g., Blanton, Jaccard, Christie, & Gonzales, 2007), the IAT is arguably the most popular method to measure implicit cognitions. We discuss it here as a case in point; exploring how other implicit measures of social positioning could be adapted to research on acculturation and health is a promising direction.

Identity Structure Analysis

According to Weinreich (2009), the dominant bidimensional acculturation framework implies making conscious "gross identity choices" based on "wholesale acceptance and/or rejection of mainstream and heritage cultures" (p. 125), which "does not accord with the actuality of identity processes, these being far more nuanced and generally without explicit conscious awareness" (p. 125). Instead, he argues, "cultural formulations are selectively incorporated into people's identities and are varyingly expressed by people as aspects of their identities" (p. 126). Accordingly, Weinreich developed a methodological framework, identity structure analysis (ISA; Weinreich & Saunderson, 2003), to accommodate the study of these complex identity processes. Drawing on Kelly's repertory grid methods, Erikson's psychodynamic work, and symbolic interactionism, ISA conceptualizes a person's identity through self-relevant entities and constructs that the

person uses to appraise self and others. Self-relevant entities include not only temporal and aspirational facets of the self (e.g., "me as I would like to become," "me as I was as a child," "me as I am afraid of becoming"), but also salient others (e.g., "a person I hate," "my best friend"). In an ISA instrument, participants evaluate these entities using bipolar constructs chosen according to the research question investigated (e.g., "is conservative" vs. "is adventurous"). Next, specific mathematical formulas make it possible to compute the degree of similarity between participants' self-representations and the self-relevant entities included (see Weinreich & Saunderson, 2003, for an exhaustive description of these formulas), indexing the degree to which participants view themselves as similar or dissimilar to relevant others.

Weinreich, Luk, and Bond (1996) used ISA in a study of ethnic stereotyping and identification among Hong Kong Chinese students. In this study, the list of entities reflected the local multicultural context by including entities such as "a typical Taiwanese male" or "typical male Vietnamese boat-people." Relevant to health researchers, they found a positive relation between self-esteem and empathetic identification with valued entities and a negative relation between self-esteem and empathetic identification with devalued groups. This study is only a case in point, but it demonstrates the usefulness of ISA for acculturation and health research. Several advantages of the method are noteworthy. First, unlike traditional identity scales, the ISA provides an implicit measure of identity, thus addressing potential issues regarding social desirability bias. Second, both the self-relevant entities and constructs used in a particular implementation of the ISA can be customized to fit a specific research question and cultural context. This allows researchers to create different instruments that are customized to the specific issues under study while at the same time fitting within a single coherent theoretical and methodological framework.

Life Story Narratives

Weinreich's ISA can capture the nuances and multiple facets of complex multicultural identities. In-depth qualitative interview methods, such as life story narratives, provide another way to reach that goal. Theoretically, the life story narrative approach, popularized by McAdams (2001; McAdams, Josselson, & Lieblich, 2006), is grounded in a narrative identity framework. From that perspective, identity is an "internalized and evolving self-story, an integrative narrative of self" that provides life with unity and purpose (McAdams, 2001, p. 101). The stories that people tell about their lives reflect conjointly how they make sense of life events and circumstances and the sociocultural environments in which the stories are embedded. As such, life story narratives could become a method of choice for acculturation researchers seeking to understand the complexities of multicultural identity negotiations. Furthermore, narrative coherence—a core structural characteristic of life stories reflecting how well the various parts of the

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story fit together—represents an indicator of well-being (Yampolsky, Amiot, & de la Sablonnière, 2013). This finding suggests that life story narratives might prove useful to acculturation researchers interested in health outcomes.

In practice, the life story narrative interview (as formulated by McAdams, 2008) consists of a methodological structure guiding participants through their storytelling. Participants are instructed to divide their life into chapters and to address a number of specific events (e.g., "a peak experience," "a turning point"). In addition, participants are prompted to incorporate several narrative features such as "challenges" and "positive and negative influences." This framework ensures a certain level of equivalence among the narratives collected, thus facilitating later coding. At the same time, the procedure focuses on structural aspects of the narrative, thus leaving ample room for participants' idiosyncratic stories and for researchers' specific questions.

For example, Yampolsky and colleagues (2013) adapted the procedure to examine the relation between various identity configurations and narrative coherence, with narrative coherence taken as an indicator of well-being. The researchers asked participants to tell the story of their cultural identification, instead of their entire life story. They found that stories about integrated cultural identities evinced more narrative coherence compared with stories about compartmentalized cultural identities, thus shedding some light on the processes by which multicultural identities may be related to well-being. That study underscores the potential for research on acculturation and health of life story narratives in particular, but also of qualitative or mixed-methods in general.

Indeed, by combining the strengths of two complementary research traditions, mixed methods are ideally suited for research touching on complex cultural meanings (Doucerain, Vargas, & Ryder, in press). Acculturation is at the core a process of cultural change, but critics have argued that the concept of culture is largely absent from both theoretical and empirical accounts of acculturation (Ryder & Dere, 2010). Integrating qualitative methods that afford more in-depth and nuanced examination of cultural meanings with more traditional quantitative approaches to acculturation may provide a way to address this pertinent critique.

Measuring Cultural Participation Aspects of Acculturation

Cultural participation pertains to behavioral aspects of migrants' engagement with their relevant cultural traditions and is closely tied to sociocultural adjustment (Ward & Kennedy, 1999). For instance, what language migrants use, what food they eat, in what neighborhood they choose to live, or what friendships they choose to form are all issues related to cultural participation. Importantly, these facets of acculturation may be related

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to health issues in different ways. For example, the health implications of adopting new lifestyles may be very different from health issues associated with inner struggles to develop a sense of belonging in two separate cultural groups.

Behaviors and Practices

Acculturation scales typically assess culturally relevant behaviors/practices by asking participants to report their endorsement of overall cultural characteristics of a very few, fairly broad, behavioral categories. The item "How often do you actually eat the food of your culture of origin" in the Asian American Multidimensional Scale (AAMS; Gim Chung et al., 2004) is a case in point. In the AAMS, food consumption is, beside language, the only category tapping into behavioral aspects of acculturation, thus constituting a limited indicator of the general construct of behavioral acculturation. In addition, this item is very vague, thus opening the door to potential biases, for example, as participants try to figure out what counts and what does not count as, "the food of their culture of origin."

The Flannery LIsting Protocol (FLIP; Flannery, Reise, & Yu, 2001) and the Multicultural Assessment of Preferences and Identities (MAP-ID, an extension of the FLIP; Yampolsky & Ryder, 2009), address these issues by starting with concrete elements in a given participant's life and then relating these elements to cultural categories. Practically, participants begin by identifying salient cultural identities in a guided free-listing exercise, with examples provided to encourage broad thinking about various cultural affiliations. For example, a Chinese immigrant to Montreal may list not only "Chinese" and "Canadian" as relevant identities, but also "Chinese Canadian," "Asian," or "Quebecois." Next, participants identify and rank order their top three foods, TV programs, practices, stores, etiquette rules, and so forth. These categories aim at covering the majority of life domains, including both concrete components, such as favorite books and movies, and less tangible aspects, such as important people, practices, and aspirations. In the next step, participants associate each identified element with its most relevant cultural identity by using the previously listed affiliations. For example, in the "favorite musicians" category, a participant might associate the entry "Francis Cabrel" with the cultural affiliation "French" and "Alphaville" with the affiliation "German." Requiring participants to use previously listed cultural identity labels ensures that only personally relevant cultural affiliations will be used. The resulting data offer a fairly comprehensive inventory of participants' engagement with their local cultural ecology.

Three advantages of this approach are noteworthy. First, the concrete nature of the elements listed may help this instrument yield more objective scores than do typical acculturation scales. Second, the stepwise procedure temporally disconnects listed elements and listed cultural affiliations, thus lending a more implicit character to the instrument. Third, researchers can choose categories that are directly relevant to their

research question, thus allowing easy customization of the breadth and depth of this inventory. For example, an acculturation researcher interested in the relation between acculturation and diabetes may choose to focus more heavily on food categories, perhaps differentiating food choices by context, by asking participants about their top three "dishes typically eaten at home," "dishes typically eaten at work," and so on. Finally, this approach allows one to investigate not only the extent of participants' engagement with their cultural traditions but also the homogeneity of their engagement across domains. Scholars have shown a clear distinction between cultural preferences in private versus public domains (e.g., Arends-Tóth & van de Vijver, 2004), and this type of instrument allows one to explore such distinctions by examining the extent to which people culturally compartmentalize their life in domain-specific ways.

Examining Daily Life

Scholars have argued that acculturation processes are context-specific (Lopez-Class et al., 2011) but that "acculturation measures do not capture this interaction between context and individual level processes" (Alegría, 2009, p. 3). In most cases, these authors seem to construe "context" in terms of macrolevel influences such as sociopolitical characteristics of the receiving society (for example, widespread immigration ideologies). While these influences are significant, we believe it equally important to consider the local contexts within which acculturating people actually live. The notion that local, typical, spontaneous contextual influences matter lies at the core of the "daily life" approach (Mehl & Conner, 2012). Daily life protocols include a broad range of methods, such as daily diaries, experience sampling, or event-contingent sampling, that all aim at characterizing the texture of people's lives.

In spite of its potential, this approach has been largely ignored by acculturation researchers. As a notable exception, Yip (2005) used an experience sampling method to examine the association between contextual cues, ethnic salience, and well-being. For one week, Chinese American students answered questions on a Palm Pilot device each time they were beeped (six times each day). Yip found that aspects of the local context—specifically, language spoken and ethnicity of others present—were associated with the extent to which ethnic identity was salient in the moment. Participants also reported greater well-being in moments when ethnic salience was greater. These results illustrate the fluid nature of acculturation processes and underscore the importance of going beyond static measures of individual differences in acculturation orientations or cultural identities. Unfortunately, experience sampling methods have two important drawbacks, perhaps partly explaining why they have not been widely adopted in acculturation research. First, they are fairly burdensome for participants. Beeps can be intrusive and disrupt the flow of participants' daily lives. Second, they require substantial resources (in this example, a set of Palm Pilots).

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Diary methods represent an interesting alternative addressing these issues. For example, the cultural day reconstruction method (C-DRM; Doucerain et al., 2013) is an adaptation of Kahneman and colleagues' (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) well-validated diary method for use in acculturation research. In practice, participants divide their previous day into episodes, like scenes in film, and answer a series of questions for each episode. Doucerain et al. (2013) used the C-DRM to examine shifts in momentary cultural affiliation among Canadian multicultural students. They found that both characteristics of the local context of an episode (e.g., language spoken, cultural background of conversation partner, type of physical location) and individual differences in acculturation orientations were associated with momentary cultural affiliation. These results underscore the significant role of local contextual factors in the study of acculturation, but they also speak to the importance of combining research methods to capture complex acculturation processes. They support the argument that traditional acculturation scales play an important role but are insufficient on their own to fully assess acculturation. We believe that they are most useful when used in combination with methods that tap into more malleable, context-specific, dynamic aspects of acculturation.

Social Networks

The migrant's re-creation of a social architecture (a structured network of social contacts) is a central task of acculturation (Kuo & Tsai, 1986), although the magnitude of this task depends partly on a person's preexisting social ties with the new context. This rebuilding of a social environment will be influenced by individual agency (those with whom one chooses to associate) as well as by contextual constraints (e.g., the likelihood of meeting X vs. Y, which will be influenced by one's occupation or social status) (Smith, 1999). As such, migrants' social networks both index their social participation in their various cultural communities and reflect their preferences and acculturation orientation (Smith, 1999, p. 646). Indeed, past research has shown a positive association between identity integration and the number of friendships with members of the mainstream cultural group (Mok, Morris, Benet-Martínez, & Karakitapoğlu-Aygün, 2007). In that sense, the structure of a migrant's social network might provide a more implicit index of his/her acculturation attitudes than would self-report questionnaires. In addition, relevant to research on acculturation and health, existing studies have established a clear link between social ties and psychological well-being (Kawachi & Berkman, 2001). For these reasons, a social network approach is ideally suited to research on cultural participation aspects of acculturation and holds great promise "to explain the structural configurations encompassing the process of cultural adjustment and the role they play as culture acquisition mechanisms" (Smith, 1999, p. 637).

A number of traditional acculturation scales assess aspects of migrants' social networks, albeit in very rough and approximate ways. The item "Whom do you now associate with in

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the outside community?" in the Acculturation Rating Scale for Mexican Americans (ARSMA; Cuellar et al., 1980) is a case in point. Participants can choose between "Almost exclusively Mexicans, Chicanos, Mexican Americans (La Raza)," "Mostly Mexicans, Chicanos, Mexican Americans," "About equally Raza (Mexicans, Chicanos, or Mexican Americans) and Anglos or other ethnic groups" and "Almost exclusively Anglos, Blacks, or other ethnic groups," thus yielding a very crude picture of the cultural composition of one's social network. In contrast, social network theory, which is gaining prominence in psychology (Butts, 2008; Westaby, Pfaff, & Redding, 2014), provides a theoretical and methodological framework to make sense of social structure in complex and quantifiable ways. At its core, social network theory emphasizes that people are embedded in webs of social relations (Borgatti, Mehra, Brass, & Labianca, 2009) and that the *structure* of the system influences and constrains the individual actors within it.

In practice, studies investigating personal social networks (or egocentric networks) all follow a similar procedure. First, participants nominate alters, that is, other members of their social network. Name elicitation methods vary, ranging from simple, single-name generators such as the commonly used General Social Survey item ("Looking back over the last six months, with whom did you discuss matters important to you?") to complex procedures allowing one to build comprehensive contact diaries (e.g., Fu, 2007). The relative pros and cons of name-elicitation methods are currently under active discussion in the social network literature (see, e.g., Marin, 2004; Marin & Hampton, 2007). Next, participants answer a series of questions about each alter, and indicate whether pairs of alters know one another. The resulting adjacency matrix, combined with alters' characteristics, can yield a number of indices characterizing the structure of participants' personal social network such as, for example, the interconnectedness or cultural homogeneity of their network.

A growing number of studies have documented associations between social network characteristics and health outcomes (e.g., Hall & Valente, 2007; Valente, Fujimoto, Chou, & Spruijt-Metz, 2009), but unfortunately acculturation and health researchers have not yet exploited this potential. When including social network variables, acculturation studies have typically relied on network size only (e.g., Suarez, Lloyd, Weiss, Rainbolt, & Pulley, 1994), neglecting structural aspects. However, the idea that structure matters, which is at the core of a social network approach, is a promising direction to examine social participation mechanisms underlying acculturative changes. Supporting this argument, a recent study (Doucerain, Shiri Varnaamkhaasti, Segalowitz, & Ryder, 2015) indicated that immigrant students with more interconnected second-language social networks reported less communication-related acculturative stress.

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Acculturation as a Multilevel Phenomenon

Recent conceptualizations of acculturation emphasize its context-specificity (Alegria, 2009; Lopez-Class et al., 2011). Expanding on this idea, acculturation can be described as a multilevel phenomenon (Sam & Berry, 2006). For example, acculturation orientations do not emerge in a vacuum. They are strongly influenced by the surrounding social and political context. Similarly, a variety of physiological processes underlie and influence the emergence and expression of acculturation orientations. This range of contexts, from local to global, from biological substrates to societal variables, forms a continuum shaping acculturative processes. It may useful to consider this continuum as a single, multilevel dynamical system (Ryder, Ban, & Chentsova-Dutton, 2011): configurations and changes characterizing a given level afford and constrain at the same time the emergence of configurations at another level.

Methodologically, this perspective invites acculturation researchers to move beyond single-level studies that focus on migrants' stable dispositions by including variables that characterize various levels along this continuum. Examining the influence of neighborhood characteristics on acculturation can be a way to expand in the direction of more macro levels. For example, a study of immigrant students living in Montreal (Jurcik, Ahmed, Yakobov, Solopieieva-Jurcikova, & Ryder, 2013) indicated that more positive heritage acculturation orientations were related to lower depression, but only for participants living in ethnically dense neighborhoods. Through participants' postal codes, the researchers were able to use census data on neighborhood-level ethnic concentration, an approach that highlights the potential of combining small-scale psychological data with variables from large-scale population studies.

Another promising direction is to consider the joint contribution of biological and cultural factors to the relation between acculturation and health. A recent study examining the role of respiratory sinus arrhythmia (RSA), a physiological marker of social engagement capacity, in the development of acculturation orientations (Doucerain, Deschênes, Aubé, Ryder, & Gouin, 2015), illustrates multilevel approaches toward the micro end of the continuum. In this longitudinal study of international students recently arrived in Canada, the authors found that higher baseline RSA levels predicted a greater increase in acculturation orientations toward the mainstream cultural group in the following months, thus suggesting that it may be important for acculturation researchers to take into account physiological factors. Taken together, these results highlight the potential of conceptualizing acculturation as a multilevel phenomenon and to consider variables that span micro to macro levels.

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Acculturation as Developmental Process

Conceptually—and etymologically—acculturation is a process of change over time. In spite of this, the vast majority of acculturation studies employ cross-sectional designs, thus treating acculturation more as a trait than as a process (Ryder & Dere, 2010). Encouragingly however, the last decade has witnessed an increase in longitudinal studies of acculturation, with a general tendency to focus on changes in acculturation orientations and adjustment in youth (Brown et al., 2013; Kiang, Witkow, & Champagne, 2013; Rogers-Sirin & Gupta, 2012; Schwartz et al., 2013; Updegraff, Umaña-Taylor, McHale, Wheeler, & Perez-Brena, 2012). Given the overall novelty of longitudinal designs in acculturation research, these studies mostly map out trajectories of change in acculturation in descriptive ways (Schwartz et al., 2013). It will be important for future research to build on this growing body of longitudinal work and to investigate antecedents and outcomes of different trajectories of change.

As an example of such research, Schwartz and colleagues (2013) examined the associations between different trajectories of change in acculturation orientations and family functioning and risky behavior among Hispanic adolescents in the United States. There is now a need not only for more longitudinal acculturation studies but also for longitudinal studies that unpack the mechanisms underlying the temporal dynamics of acculturation and health. The increasing popularization of trajectory modeling techniques (including hierarchical modeling, latent class analysis, growth mixture modeling, and group-based trajectory modeling; Nagin & Odgers, 2010) should facilitate this line of research.

Conclusion

Ten years ago, after reviewing the major flaws of acculturation research, Hunt et al. (2004) concluded that the concept of acculturation represents an "ideologically convenient blackbox" (p. 982). They recommended that "use of acculturation measures be suspended, at least until their ambiguity and lack of predictive power can be remedied: an event that [they] do not anticipate is forthcoming" (p. 982). Today, although we agree with the tenor of critiques of acculturation research, we do not support this pessimistic proposal. A substantial proportion of studies on the relation between health and acculturation still rely on questionable conceptualizations and measures, but the last decade has also witnessed an increasing number of noteworthy efforts to pull acculturation research out of its methodological quagmire. In the second half of this

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chapter, we discussed a number of such efforts. Our goal was not to produce an exhaustive review of novel ways to study acculturation, but rather to provide a rough map of possibilities in the hope of inspiring researchers interested in acculturation and health. We believe that these methods suggest exciting and promising future directions for research.

We realize that such an eclectic collection of methods, ranging from biomarkers to life history narratives, may be disconcerting to readers expecting a more unified perspective on "best practices" in acculturation and health research. However, we have come to appreciate that, as handy as they are, Birmingham screwdrivers will not suffice. Rather, the complex and multifaceted nature of acculturation must be met with a sophisticated set of methods. Thus, our hope with this chapter was to persuade acculturation researchers to leave behind concerns about the "best tool," in favor of "toolkit" considerations: that is, assembling a set of flexible, complementary methods that can do justice to the multidimensional, multilevel, and developmental nature of acculturation processes.

In any given domain, theories and methods are often considered separately, obfuscating the synergistic relationship between these two facets of science. Not only do existing theories shape the development of new methods but also new methods can yield results that lead to "previously inconceivable theories" (Greenwald, 2012, p. 99). As a case in point, when Galileo built and used the first telescopes, his observations profoundly influenced theoretical controversies between Ptolemaic and Copernican views of astronomy and helped pave the way to the scientific revolution. In a similar way—albeit on a much more modest scale—we strongly believe that developing and using new methods in research on acculturation and health is desirable not only to address known limitations of the field but also to prompt new research questions and inspire new theories.

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Notes:

([1]) A Birmingham screwdriver is defined in the *Urban Dictionary* as "A hammer. Usually used on delicate devices when a real screwdriver would be better. Refers to the habit of a Birmingham [UK] inhabitant (i.e., simpleton) to take a rather simplistic view of maintenance."

([2]) The term "migrant," which we use to describe our target population, is in line with traditional definitions of acculturation. However, most of the arguments and methods discussed in this chapter are applicable to the study of cultural minorities or of people living in complex cultural environments.

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